Copyright Statement

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

This thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognize the author's right to be identified as the author of this thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from their thesis.

General copyright and disclaimer

In addition to the above conditions, authors give their consent for the digital copy of their work to be used subject to the conditions specified on the Library Thesis Consent Form and Deposit Licence.
The Right Sentence?

Examining the communication skills and experiences of male youth offenders in youth justice residences in New Zealand

Sarah Alison Lount

Abstract

This thesis aimed to: 1) investigate the hearing, auditory processing and language skills of male youth offenders in youth justice (YJ) residences in New Zealand (NZ); 2) describe the perceptions of male youth offenders of communicating in NZ’s YJ system; and, 3) describe the perceptions of key YJ professionals of communicating with young people in NZ’s YJ setting.

Study 1 included 33 male youth offenders from two YJ residences, and 39 controls, aged 14-17 years old. Testing consisted of tympanometry, self-reported hearing, pure-tone audiometry, four auditory processing tests, two standardised language tests, and a nonverbal intelligence test. The two qualitative studies used semi-structured interviews of 8 youth offenders and 15 YJ professionals. Data analysis used latent thematic analysis.

In study 1, hearing thresholds and performance on all language measures were significantly worse for the youth offenders than the controls. Sixty-four percent of youth offenders and 10% of controls fulfilled the criteria for language impairment; 27% versus 18% had auditory processing disorder, respectively. Study 2 showed that the youth offenders found communicating in court an area of significant difficulty; they reported feeling unable to say what they wanted or understand what was going on. Trust and familiarity with YJ professionals were considered important to facilitate communication; most young people could identify strategies that helped communication, but not all reported using them. In study 3, the YJ professionals identified several challenges for communication, including factors relating to the young people, the YJ environment, and to themselves and their role. All desired to communicate effectively and mentioned strategies they use, but also wanted additional training. They acknowledged that many youth offenders struggle with communication, but some professionals expressed mixed feelings about the consequences of labelling those young people language impaired.
Language may be an area of significant difficulty for the young people in New Zealand’s YJ system. These difficulties may be accompanied by poorer hearing or auditory processing. Courtroom language and environments appear especially challenging. The findings highlight a need for speech-language therapy services to improve communication for the young people and those working with them to maximise participation in the YJ system.
Acknowledgements

There have been so many people that have helped make this research possible. First and foremost, I would like to thank my wonderful supervisors, Professor Suzanne Purdy and Dr Linda Hand for all of their wisdom, patience, encouragement and time that they have given me over the many years of this part-time degree. I will always be truly grateful and indebted to you both for your help. Suzanne, how you find the hours in the day to devote so selflessly to all of your students, I do not know, but I am in awe of your constant energy, knowledge, and generosity. Professor Alan France and Sally Kedge, I also thank you both for your help, sage advice, and valuable feedback on my research.

This research would not have been possible without the help of many staff working for the Ministry of Social Development. Nikki Halford (nee Ranns), thank you for all your enthusiastic help in the early days during the recruitment of young people for the first study, it was a long slog, but we got there! Also, thank you to Kyle Kuiti, Manager of Te Au rere a te Tonga Youth Justice Residence for providing the staff and resources to enable me to conduct the research at your facility. To Parani Wiki, Ellen Mullan, Julie Trigger, and all of the helpful staff at Korowai Manaaki Youth Justice Residence, thank you for your time and help to find young people for my research. In recruiting and finding eligible participants, thanks must also be given to Anita and the staff at Evita Health who were invaluable for overcoming hiccoughs in recruitment.

Thank you to Marion Norton, my Aunty, whose role in the PPTA union gave me the foot in the door with the Principals of the schools that provided the control group participants for the first study. To the Principals and staff at those five high schools (Paraparaumu College, Naenae College, Kapiti College, Mana College and Aotea College), thank you for providing access to the students, and for the planning, rooms and time it took.

Thank you also to the staff at NZ Police who supported my research and gave their time to help make it possible. In particular, thank you to Senior Sergeant Mike Fulcher and Julee Browning, who gave the time to help me find participants for my interviews. Special thanks also to Clare-Ann Fortune
of Victoria University, who took the time to meet with me and give me names and numbers of people who could help me access the young people at the youth justice residences, I would have floundered without her help.

Of course, none of the research would have been possible without the young people who willingly, and often enthusiastically, gave their time to be tested and interviewed by me. It was very generous of them to agree to be seen by a complete stranger for something new and unknown for them. Thank you.

Many thanks also to the staff at the University of Auckland who provided me with their knowledge and support throughout my PhD. In particular, I would like to thank Sue O’Shea, Kamalini Gnaniah, Brownyn Halcombe and Adeline Fung; thank you for your patience and time.

Finally, to my family, thank you for all your support, encouragement and hours of reading the various drafts of my writing. A special thanks to my mother who looked after my youngest son Alex, walking the streets of Palmerston North with the buggy for hours during all those visits to the youth justice residences. To my father, Peter, who picked up my boys from Kindergarten and school, and entertained them so I could get some writing done; thank you so much. And to Simon, Ben and Alex, thank you for always being there for me with love, support, hugs and smiles – welcome distractions – but also for reminding me of the bigger picture.
“This wasted potential is there for us to see... Rather than being the hope for our future these young people represent our future fears.”

John Key - Former Prime Minister of New Zealand (January 2008).

This quote from the former Prime Minister of New Zealand succinctly represents the country’s common discourse on young people who offend. It illustrates a negative view that is often fuelled by misrepresentation of issues facing youth offenders in the media. But this quote also highlights a more important issue - we can all see these young people have potential, we just have to help them overcome the hurdles that prevent them from using it.

My Doctoral journey began with a strong desire to produce some research that would have the potential to benefit young people in trouble with the law in New Zealand. I have always held the view that as far as possible and reasonable, people in trouble with the law should be given help, support and the chance to try and re-enter society in a meaningful way after they have served their time. It is also my view that young people, especially, should be given all the help possible to achieve this.

This thesis was crafted with the utmost care in preventing me, as a researcher, in transferring my own views and experiences into the analysis of the data and interviews. This possibility was reduced by including the advice and suggestions from my supervisors, cultural advisors, as well as professionals and cultural advisors with experience in the youth justice sector in the development of the research protocols and questions. As such, I believe that the essence of the participants was captured through this work. And it is my hope that the findings of this work will add meaningful information to the evidence for professionals and policy makers in the youth justice sector to use to benefit the lives of young offenders in New Zealand.
# Table of Contents

Abstract..................................................................................................................................... ii  
Acknowledgements ................................................................................................................ iv  
Reflective Statement ............................................................................................................... vi  
List of Figures ........................................................................................................................ xii  
List of Tables ........................................................................................................................ xii  
List of Appendices ................................................................................................................ xiii  
Co-Authorship Forms: Study 1 ........................................................................................... xiv  
Co-Authorship Forms: Study 2 ........................................................................................... xv  
Co-Authorship Forms: Study 3 ........................................................................................... xvi  

Chapter 1. Introduction .......................................................................................................... 1  
  1.1. Overview of the problem ........................................................................................ 1  
  1.2. Research questions ............................................................................................. 6  
  1.3. Thesis outline ........................................................................................................ 7  

Chapter 2. The development of communication skills and the consequences of impairment 9  
  2.1. Communication ....................................................................................................... 9  
  2.1.1 Hearing ............................................................................................................... 9  
  2.1.2 Auditory processing ......................................................................................... 13  
  2.1.3 Language ......................................................................................................... 15  
  2.2. Factors affecting the development of communication skills ............................... 16  
  2.3. Communication disorders ...................................................................................... 21  
  2.4. Communication disorders and the school environment ...................................... 22  
  2.5. The importance of communication skills during adolescence ............................ 23  
  2.6. Communication disorders and behaviour ............................................................ 27  
  2.7. Communication disorders and young people in youth justice ............................ 29  
  2.8. Communication and New Zealand’s Youth Justice System .................................... 38  
  2.8.1 A brief profile of New Zealand’s Youth Justice System .................................... 38  
  2.8.2 Pathways through New Zealand’s Youth Justice System .................................. 39  
  2.8.3 Communication demands and the consequences of impairment in youth justice 42  
  2.9. Methodological approach ...................................................................................... 46  
  2.9.1 Quantitative approach ...................................................................................... 47  
  2.9.2 Qualitative approach ......................................................................................... 54  

Chapter 3. Hearing, auditory processing, and language skills of male youth offenders and  
remandees in youth justice residences in New Zealand .................................................. S7  
  3.1. Introduction ............................................................................................................. 57  

vii
3.1.1 Language and young people in the criminal justice system ..........57
3.1.2 Importance of hearing and auditory processing............................59
3.1.3 Youth justice in New Zealand.......................................................61

3.2. Method ..........................................................................................62
3.2.1 Ethics approval ...........................................................................62
3.2.2 Participants ..................................................................................62
3.2.3 Procedure .....................................................................................64
3.2.4 Auditory Processing Test Battery ................................................65
3.2.5 Language and Cognitive Assessments ..........................................66

3.3. Results ..........................................................................................67
3.3.1 Self-reported Hearing Loss ...........................................................68
3.3.2 Immittance and Pure Tone Audiometry ..........................................68
3.3.3 Auditory Processing ....................................................................72
3.3.4 Language and Nonverbal Intelligence Tests ..................................74
3.3.5 Overlap of Auditory Processing and Language Disorders .............76

3.4. Discussion .....................................................................................77
3.4.1 Hearing and auditory processing ..................................................77
3.4.2 Language Outcomes ....................................................................79
3.4.3 Overlap between LI and APD .......................................................81
3.4.4 Nonverbal IQ ..............................................................................82
3.4.5 Limitations ..................................................................................83
3.4.6 Considerations and recommendations .........................................84

Chapter 4. Tough Talk: Youth offenders’ perceptions of communicating in the youth justice system in New Zealand..........................87

4.1. Introduction ....................................................................................87
4.1.1 The voice of the young person ....................................................90

4.2. Method ..........................................................................................92
4.2.1 Ethics approval ...........................................................................92
4.2.2 Participants ..................................................................................92
4.2.3 Procedure .....................................................................................93
4.2.4 Data collection and analysis .......................................................93
4.2.5 Reflexivity ..................................................................................95

4.3. Results ..........................................................................................95
4.3.1 Lack of control ...........................................................................96
4.3.2 Understanding what’s going on ..................................................98
4.3.3 Confidence and participation ....................................................99
4.3.4 Factors that help communication ............................................101
4.3.5 Relationship with communication partner ..............................103

4.4. Discussion ....................................................................................106
4.4.1 Limitations ...............................................................................109
4.4.2 Future research .......................................................................110
Chapter 5. Communicating with young people in youth justice; the perception of professionals in New Zealand

5.1. Introduction
5.1.1 Communication disorders in youth offenders
5.1.2 Communication demands in New Zealand’s Youth Justice System
5.1.3 Why do youth offenders’ communication skills matter?
5.1.4 The value of examining experiences in the youth justice setting

5.2. Method
5.2.1 Ethics approval
5.2.2 Participants and procedure
5.2.3 Data collection and analysis
5.2.4 Reflexivity

5.3. Results
5.3.1 Theme 1: Youth justice system is a foreign environment for the young people
5.3.2 Theme 2: Professional’s role and responsibilities
5.3.3 Theme 3: Relationship with the young person
5.3.4 Theme 4: Strategies to overcome communication barriers
5.3.5 Theme 5: Looking to the future

5.4. Discussion
5.4.1 Limitations
5.4.2 Implications and future directions

Chapter 6. Discussion

6.1. Summary of findings
6.1.1 Review of communication skills and the youth justice system
6.1.2 Hearing, auditory processing and language skills of male youth offenders
6.1.3 Young people’s perceptions of communicating in the youth justice system
6.1.4 Youth justice professionals’ views of communicating with youth offenders

6.2. Research limitations and considerations

6.3. Implications for future practice
6.3.1 Support for youth offenders’ communication skills
6.3.2 Implications of findings for criminal proceedings
6.3.3 Implications of findings for different ethnicities
6.3.4 Support for youth justice professionals

6.4. Ideas and challenges
6.4.1 Approaches to delivering intervention in New Zealand’s youth justice context
6.4.2 Communication support through court intermediaries?
6.4.3 A coordinated approach to support communication skills
6.4.4 Early identification of communication difficulties
6.4.5 Addressing poverty to support the development of communication skills
List of Figures

Figure 1. Inserted supplemental material 3: Number of participants with present or absent acoustic reflex thresholds (1 kHz) occurring at ≤100 dB HL. .................................................................71

Figure 2. Inserted supplemental material 5: Number of participants with auditory processing scores two SDs outside the mean for each assessment. ..............................................................................73

Figure 3. Number of participants in each group with LI, APD or both. ..........................................................76

Figure 4. Theme hierarchy: how youth offenders describe communicating in the youth justice context. ........................................................................................................................................96

Figure 5. How youth justice professionals describe communicating with young people (YP) in the youth justice context. .................................................................................................................124
List of Tables

Table 1. Self-identified ethnicity of the controls and youth offender and remandees (YORs). ..........64
Table 2. Results for tympanometry, four-frequency average (500, 1000, 2000, and 4000 Hz) hearing threshold, auditory processing, language and nonverbal intelligence tests....................69
Table 3. Number of professionals in study 3 contributing to each theme and subtheme.................125
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPENDIX 1</td>
<td>Study 1 ethics approval (University of Auckland)</td>
<td>180</td>
</tr>
<tr>
<td>APPENDIX 2</td>
<td>Study 1 ethics approval amendment (University of Auckland)</td>
<td>182</td>
</tr>
<tr>
<td>APPENDIX 3</td>
<td>Study 1 ethics approval (Ministry of Social Development)</td>
<td>183</td>
</tr>
<tr>
<td>APPENDIX 4</td>
<td>Study 1 parent information sheet (youth offender group)</td>
<td>185</td>
</tr>
<tr>
<td>APPENDIX 5</td>
<td>Study 1 parent consent form (youth offender group)</td>
<td>188</td>
</tr>
<tr>
<td>APPENDIX 6</td>
<td>Study 1 participant information sheet (youth offender group)</td>
<td>190</td>
</tr>
<tr>
<td>APPENDIX 7</td>
<td>Study 1 participant consent form (youth offender group)</td>
<td>191</td>
</tr>
<tr>
<td>APPENDIX 8</td>
<td>Study 1 parent information sheet (control group)</td>
<td>192</td>
</tr>
<tr>
<td>APPENDIX 9</td>
<td>Study 1 parent consent form (control group)</td>
<td>195</td>
</tr>
<tr>
<td>APPENDIX 10</td>
<td>Study 1 participant information sheet (control group)</td>
<td>197</td>
</tr>
<tr>
<td>APPENDIX 11</td>
<td>Study 1 participant consent form (control group)</td>
<td>198</td>
</tr>
<tr>
<td>APPENDIX 12</td>
<td>Studies 2 &amp; 3 ethics approval (University of Auckland)</td>
<td>199</td>
</tr>
<tr>
<td>APPENDIX 13</td>
<td>Studies 2 &amp; 3 ethics approval amendment (University of Auckland)</td>
<td>201</td>
</tr>
<tr>
<td>APPENDIX 14</td>
<td>Studies 2 &amp; 3 ethics approval (Ministry of Social Development)</td>
<td>203</td>
</tr>
<tr>
<td>APPENDIX 15</td>
<td>Study 1 supplemental materials 1 &amp; 2</td>
<td>204</td>
</tr>
<tr>
<td>APPENDIX 16</td>
<td>Study 1 supplemental material 4: Individual audiograms of participants with slight or mild hearing loss</td>
<td>205</td>
</tr>
<tr>
<td>APPENDIX 17</td>
<td>Youth Offender Interview Schedule</td>
<td>207</td>
</tr>
<tr>
<td>APPENDIX 18</td>
<td>Youth Justice Professional Interview Schedule</td>
<td>211</td>
</tr>
</tbody>
</table>
this form is to accompany the submission of any phd that contains published or unpublished co-authored work. please include one copy of this form for each co-authored work. completed forms should be included in all copies of your thesis submitted for examination and library deposit (including digital deposit), following your thesis acknowledgements. co-authored works may be included in a thesis if the candidate has written all or the majority of the text and had their contribution confirmed by all co-authors as not less than 65%.

please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

chapter 3:

lount, s. a., purdy, s. c., & hand, l. j. (2017). hearing, auditory processing, and language skills of male youth offenders in youth justice residences in new zealand. journal of speech, language and hearing research, 60, 121–135.

<table>
<thead>
<tr>
<th>nature of contribution by phd candidate</th>
<th>completed data collection, statistical analyses and wrote article text</th>
</tr>
</thead>
<tbody>
<tr>
<td>extent of contribution by phd candidate (%)</td>
<td>90</td>
</tr>
</tbody>
</table>

**co-authors**

<table>
<thead>
<tr>
<th>name</th>
<th>nature of contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>professor suzanne c. purdy</td>
<td>advice on data collection, statistical analyses and editing of article text</td>
</tr>
<tr>
<td>dr linda hand</td>
<td>editing of text</td>
</tr>
</tbody>
</table>

**certification by co-authors**

the undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the phd candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and
- that the candidate wrote all or the majority of the text.

<table>
<thead>
<tr>
<th>name</th>
<th>signature</th>
<th>date</th>
</tr>
</thead>
<tbody>
<tr>
<td>suzanne c purdy</td>
<td>[signature]</td>
<td>12 june 2017</td>
</tr>
<tr>
<td>linda hand</td>
<td>[signature]</td>
<td>12 june 2017</td>
</tr>
</tbody>
</table>
Co-Authorship Form

This form is to accompany the submission of any PhD that contains published or unpublished co-authored work. Please include one copy of this form for each co-authored work. Completed forms should be included in all copies of your thesis submitted for examination and library deposit (including digital deposit), following your thesis Acknowledgements. Co-authored works may be included in a thesis if the candidate has written all or the majority of the text and had their contribution confirmed by all co-authors as not less than 65%.

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Chapter 4:

Nature of contribution by PhD candidate: Completed data collection, data analysis and wrote article text
Extent of contribution by PhD candidate (%): 85

CO-AUTHORS

<table>
<thead>
<tr>
<th>Name</th>
<th>Nature of Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Suzanne C. Purdy</td>
<td>Advice on data analysis and editing of article text</td>
</tr>
<tr>
<td>Dr Linda Hand</td>
<td>Advice on data collection, analysis and editing of article text</td>
</tr>
<tr>
<td>Professor Alan France</td>
<td>Advice on data analysis and editing of article text</td>
</tr>
</tbody>
</table>

Certification by Co-Authors

The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate’s contribution to this work, and the nature of the contribution of each of the co-authors; and
- that the candidate wrote all or the majority of the text.

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suzanne C. Purdy</td>
<td></td>
<td>19 Sept 2017</td>
</tr>
<tr>
<td>Linda Hand</td>
<td></td>
<td>29 Sept 2017</td>
</tr>
<tr>
<td>Alan France</td>
<td></td>
<td>1 Oct 2017</td>
</tr>
</tbody>
</table>

Last updated: 19 October 2015
Co-Authorship Form

This form is to accompany the submission of any PhD that contains published or unpublished co-authored work. Please include one copy of this form for each co-authored work. Completed forms should be included in all copies of your thesis submitted for examination and library deposit (including digital deposit), following your thesis Acknowledgements. Co-authored works may be included in a thesis if the candidate has written all or the majority of the text and had their contribution confirmed by all co-authors as not less than 65%.

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Chapter 5:

<table>
<thead>
<tr>
<th>Nature of contribution by PhD candidate</th>
<th>Completed data collection, data analysis and wrote article text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of contribution by PhD candidate (%)</td>
<td>85</td>
</tr>
</tbody>
</table>

**CO-AUTHORS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Nature of Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Suzanne C. Purdy</td>
<td>Advice on data analysis and editing of article text</td>
</tr>
<tr>
<td>Dr Linda Hand</td>
<td>Advice on data collection, analysis and editing of article text</td>
</tr>
<tr>
<td>Professor Alan France</td>
<td>Advice on data analysis and editing of article text</td>
</tr>
</tbody>
</table>

**Certification by Co-Authors**

The undersigned hereby certify that:
- the above statement correctly reflects the nature and extent of the PhD candidate’s contribution to this work, and the nature of the contribution of each of the co-authors; and
- that the candidate wrote all or the majority of the text.

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suzanne C Purdy</td>
<td>![Signature]</td>
<td>25 September 2017</td>
</tr>
<tr>
<td>Linda Hand</td>
<td>![Signature]</td>
<td>28 September 2017</td>
</tr>
<tr>
<td>Alan France</td>
<td>![Signature]</td>
<td>1st October 2017</td>
</tr>
</tbody>
</table>

Last updated: 19 October 2015
Chapter 1. Introduction

1.1. Overview of the problem

New Zealand’s Youth Justice System relies on oral language to communicate with young people in trouble with the law. International literature suggests that more than half of such young people are likely to have difficulties with oral language, which brings their participation in youth justice processes into question. There is currently no research specifically examining the communication skills of the young people who offend in New Zealand. This doctoral research addresses this gap in our knowledge, and outlines the importance of supporting the communication skills of this vulnerable population.

The effects of youth crime are damaging and can have long-lasting effects not only for the victims, but also the young people committing such crimes. Youth crime may involve harm to an individual victim, the community, and the offender (Van Ness, 1993). Victims may experience emotional and psychological effects, as well as physical and economic harm through a loss of trust, sense of control over their lives, feelings of safety, and self-esteem (Garkawe, 1999). The community may also face harm through the undermining of its cohesion and stability, and through the breakdown of social bonds that link individuals and families (Moyle & Tauri, 2016; Umbreit & Coates, 1999). As a result of a young person’s offending, the community may also experience a loss of security and potential removal of one of its members (the young offender) through separation and alienation. Finally, the offender may also be harmed by experiencing the immediate and long-term effects of stigmatisation, isolation, and loss of personal esteem as a result of their offending (McGrath, 2009; Thompson & Cummings, 2010).

In New Zealand, there has been positive progress in the last decade with a consistent pattern of decreasing numbers seen across the youth justice system: there have been fewer Police apprehensions, and fewer children and young people charged in the Youth Court, with decreases seen across gender, age and ethnic groups since 1992 (Ministry of Justice, n.d.-b). According to the Ministry of Justice
report, the majority of children and young people charged in court are aged 15-16 years (75%), are male (79%) and increasingly of Māori ethnicity (from 46% in 2005 to 62% in 2015).

These data show that progress is being made in reducing youth crime in New Zealand, but there remains a small group of more serious and recidivist youth offenders of roughly 5-15% of youth offenders, who account for around 50% of all youth offending (Becroft, 2014). These more serious offenders represent the most vulnerable group of offenders, a group most in need of assistance to prevent repeat offending, and undergo rehabilitation.

Young people in trouble with the law are a diverse population, but typically come from dysfunctional families (defined in the literature as having high rates of parent psychopathy, poor parenting practices and increased parental conflict) and low socio-economic status (SES) backgrounds (Moffitt & Lynam, 1994; Snow & Powell, 2011c, 2011b). These young people also tend to have a higher incidence of overlapping disorders and more risk factors overall than their non-offender peers. For example, many have poor general health and increased substance abuse (Braverman & Morris, 2011; Ministry of Health, 2005), chaotic, neglectful or abusive home environments (Stewart, Livingston, & Dennison, 2008), and increased diagnosed rates of conduct, attentional disorders or cognitive disturbances (Lipsey & Derzon, 1998; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998). The youth offender population also tends to have an over-representation of learning disabilities, poor literacy levels, and poor social skills (Rucklidge, McLean, & Bateup, 2009; Snowling, Adams, Bowyer-Crane, & Tobin, 2000). While they do not show causation, the findings mentioned above have come primarily from prospectively-collected longitudinal data and demonstrate associations between these factors and youth offending.

Backgrounds and risk factors such as low SES, social, emotional and behavioural difficulties, learning difficulties and psychiatric status have been found to correlate with the nature and extent of language difficulties in longitudinal studies (Beitchman et al., 1996; Clegg, 2006; Cross, 2011; Roy & Chiat, 2013). The past decade has seen an increasing number of studies around the world suggesting that a disproportionate number of young people in trouble with the law have difficulties with oral
language, compared with their non-offending peers. These data have primarily come from the UK (for example Bryan, 2004; Bryan, Freer, & Furlong, 2007), Australia (Humber & Snow, 2001; Snow & Powell, 2011c) and the USA (Sanger, Moore-Brown, Magnuson, & Svoboda, 2001).

Most of the studies examining language abilities of young people who offend have not considered their hearing or listening status, despite the fact that this population has several factors putting them at risk of developing hearing and auditory processing difficulties. The few studies that have, have only included limited-frequency measures for screening purposes, mostly to determine eligibility (Belenchia & Crowe, 1983; Blanton & Dagenais, 2007). The hearing status of the young people in trouble with the law is particularly relevant to New Zealand, where Māori are over-represented in young offending statistics (Statistics New Zealand, 2016), but also in statistics relating to poverty (Simpson, Duncanson, Oben, Wicken, & Gallagher, 2016), reduced access to healthcare (Brabyn & Barnett, 2004), higher rates of health-related risk factors (Ministry of Health, 2013), and greater rates of otitis media with effusion (glue ear) (Simpson et al., 2016). Extended periods of hearing impairment specifically associated with middle ear disease have been implicated in the development of problems with both auditory processing (Gravel et al., 2006; Moore, Douglas, Hartley, & Hogan, 2003; Neville & Bavelier, 2002; Schilder, Snik, Straatman, & van den Broek, 1994; Tomlin & Rance, 2014) and language outcomes in some individuals (Roberts, Rosenfeld, & Zeisel, 2004; Uclés, Alonso, Aznar, & Lapresta, 2012). As with oral language, hearing and auditory processing skills are essential for effective communication and representation in the justice system. There is currently no published New Zealand-based data on the hearing status of youth offenders; however, an unpublished study showed that, in the adult prison population in New Zealand, 69% had some form of hearing loss, with rates as high as 83% in Māori inmates (Bowers, 1986). Furthermore, a US-based study by Holmes et al. (1996) showed that 36% of 226 youth offenders failed their hearing screening test. There is also very little data on the auditory processing skills of the youth-offender population; one US-based study found that 72% of their sample of 399 adjudicated young people exhibited difficulties with an auditory processing task, and their performance on this test was significantly worse than the non-adjudicated control group.
(Moncrieff, Demarest, Mormer, & Littlepage, 2014). No New Zealand-based research assessing the auditory processing skills of youth offenders has been published to date.

The growing literature base showing the difficulties that youth offenders have with oral language, has been accompanied by an increasing awareness of the communication difficulties young people are likely to face during their journey through youth justice systems. Two influential reports published in the UK directly relate to these concerns. John Bercow, now the Speaker of the UK House of Commons, produced a report on the state of the nation’s provision for supporting children and young people who have speech, language and communication needs (Bercow, 2008). The report emphasised the status of communication as an essential life skill. It also confirmed that children and young people with communication disorders (including difficulties with hearing and processing language, speech production, oral language expression and comprehension, and social aspects of communication) were at increased risk of experiencing school exclusion, the development of emotional, behavioural and social problems, and entry into the youth justice system (Bercow, 2008).

The second, more recent report by the Children’s Commissioner for England found evidence suggesting a high prevalence of neurodisabilities, including communication disorders, in young offenders (Hughes, Williams, Chitsabesan, Davies, & Mounce, 2012). Through an expert-panel review of available evidence in the literature, Hughes et al. also asserted that rates of speech, language and communication disorders are higher than those of other neurodisabilities. New Zealand-based research used the findings of Hughes et al.’s (2012) report to examine the consequences of neurodevelopmental disorders in New Zealand’s legal context (Peirse-O’Byrne, 2014). Pierse-O’Byrne’s analysis found that the high rates of neurodisability in young offenders have implications for fitness to stand trial as it is now a potential basis for a finding of unfitness in New Zealand. Peirse-O’Byrne noted that, in New Zealand, the screening processes and legal programmes do not currently accommodate or meet the needs of young people with neurodisabilities – especially those with communication disorders.

The findings of these reports, and those of the international literature show a disproportionate rate of (mostly undiagnosed) communication difficulties in youth offenders. This suggests that young
people in trouble with the law in New Zealand are likely to have communication difficulties and therefore face considerable barriers to participation and due process.

New Zealand’s Youth Justice System has been described as ‘revolutionary’ and has set international trends in youth justice (Lynch, 2016; Wundersitz, 2000). It has a restorative focus emphasising diversion, community-based sanctions, family decision-making, and flexibility (Lynch, 2016). Most of the interactions in this system are orally based under often very stressful conditions. Despite this, and the growing international evidence of the language difficulties many youth offenders face, there is no New Zealand-based research examining the communication skills of youth offenders. There is some qualitative data on the general experiences of young people and their families who have attended Youth Court, which suggest young people struggle to understand the language and proceedings in court and are not sure how to participate (Ministry of Justice, 2011). However, there is no direct research examining their views of communicating with youth justice professionals, or how those professionals perceive communicating with the young people.

These omissions are critical. New Zealand’s Youth Justice System has a duty to comply with Sections 10 and 11 of the Children, Young Persons and their Family (CYPF) Act 1989 (now known as the Children’s and Young People’s Well-being (Oranga Tamariki) Act 1989). These Acts say that the Court and Counsel must explain the nature of proceedings and orders in a manner and in language that can be understood by the child or young person, and be satisfied the young person has understood them. Court and Counsel must also encourage participation from the young person in proceedings. Additionally, addressing the causes of youth offending in section 208(fa) of the CYPF Act cannot be achieved without an understanding of contributing communication disorders and other neurodisabilities.

Most importantly, the requirements of the CYPF Act necessitate an understanding of the young person’s communication skills for due process. Information on the communication skills of young people who offend, and factors they feel are important for communication, are key to ensuring full participation and the development of appropriate and effective treatment programmes. From international research we know that speech-language therapy can benefit this population (Burrows, Yiga, & Heneker, 2012; Gregory & Bryan, 2011). Therefore, better understanding of their communication skills will promote more effective allocation of resources and determine how best we can address the communication needs of young people in trouble with the law in New Zealand.

This thesis will provide much-needed quantitative and qualitative information on the communication skills of young people in the youth justice system in New Zealand. It will use quantitative measures to compare the hearing, auditory processing, and language skills of male youth offenders in youth justice residences in New Zealand with a group of similarly-aged male high school students. It will also use a qualitative approach to analyse how male youth offenders in youth justice residences describe communicating in the youth justice system in New Zealand, as well as how key youth justice professionals in New Zealand describe communicating with the young people they work with.

1.2. Research questions

This research asked the following questions:

1) Do measures of hearing, auditory processing, and receptive and/or expressive language differ between New Zealand-based male youth offenders and remandees in two youth justice residences, compared with New Zealand high school students (aged 14-17 years)?

2) Do the nature and/or pattern of difficulties found on these measures vary between the two groups according to nonverbal intelligence?

3) How do young people in trouble with the law describe:

a) their overall experiences of communicating in New Zealand’s Youth Justice System,
b) understanding professionals in the youth justice system, and
c) expressing themselves with professionals in the youth justice system?

4) How do youth justice professionals in New Zealand describe:
a) their overall experiences communicating with the young people they work with in their role,
b) how well they think the young people can understand what was being said,
c) how well they think the young people can say what they needed to, and
d) what they think helps when communicating with the young people?

1.3. Thesis outline

To answer these research questions, this thesis begins in chapter 2 by introducing the reader to the acquisition of communication skills and factors that can affect their development. This will provide a contextual framework for this doctoral research. Chapter 2 will highlight the importance of oral language competence during adolescence, as well as the psychosocial risk factors for, and possible consequences of, having a communication disorder. This chapter will then examine connections between behaviour and communication disorders, and current research on what is known about communication disorders in youth offenders. Chapter 2 will also provide the reader with an overview of New Zealand’s Youth Justice System and the context(s) in which young people who offend must communicate. This will also show the importance of hearing, auditory processing and oral language competence for these young people, and why understanding the status of their communication skills is essential to their participation in youth justice processes.

The following three chapters present the three empirical studies that were conducted for this doctoral research. Each is presented in the form in which they have been published or submitted for publication in various journals. Study one (chapter 3) presents the findings of a New Zealand-first study that investigated the hearing, auditory processing and language skills of a group of male youth offenders and remandees from two youth justice residences in New Zealand, compared with a group of similarly-
aged non-offenders. The second study (in chapter 4) includes the voice of eight young people from one youth justice residence in a qualitative study. This study examined their perceptions and experiences of communicating in the youth justice system. The third study, in chapter 5, presents the findings of a second qualitative study that examined fifteen youth justice professionals’ perceptions and experiences of communicating with youth offenders. The thesis then concludes with a discussion of the overall findings with a focus on the implications for future practice in the youth justice system in New Zealand.

This thesis uses the term “young people”, “young person”, “youth” and “youth offender” to describe the population of interest for this research. Using the terms “young person” and “young people” aligns this research with relevant New Zealand legislation that defines people aged between 14 and 17 years using this label. Both “young people” and “young person” are commonly used in New Zealand and are often used synonymously for “adolescent” or “juvenile”. The term “youth offender” is also used synonymously with the terms “juvenile offender”, “juvenile delinquent” and “young offender”. Clarification about the particular population of young people will be provided where necessary. For example: community-based versus incarcerated youth offenders, versus young people in youth justice residences (youth offenders and remandees). The term “offender” has been used in this thesis to be consistent with other research in this area, and to facilitate literature searching; however, where possible, the terms “young people who offend”, or “young people in trouble with the law” are preferred to avoid ‘dehumanising’ and defining this vulnerable population of young people purely by their past behaviours.

Additionally, the term “communication skills” and “communication disorders” are used in this thesis to include hearing-, auditory processing- and language-related domains. “Language disorder” and “language impairment” are used synonymously, and “developmental language disorder” is used in place of “specific language impairment” for language disorders not associated with a known condition (such as autism spectrum disorder, brain injury, genetic conditions such as Down’s syndrome and sensorineural hearing loss), in accordance with the consensus of the CATALISE panel (Bishop, Snowling, Thomspn, Greenhalgh, & CATALISE consortium, 2016).
Chapter 2. The development of communication skills and the consequences of impairment

2.1. Communication

The World Health Organisation states that “communication and interpersonal skills” is one of five areas of globally-relevant life skills (World Health Organisation, 1999). Communication is how we inform others of our ideas, needs, desires and intentions, and it requires active participation by both the sender and receiver of the information. As humans, there are many different aspects to communication, for example our choice of words, articulation, fluency, voice, body language, sign language, text-based communication, emotions, etc. These aspects require an ability to see and/or hear the particular mode of chosen communication, as well as cognitively process that information into meaningful messages. The communication skills that the current thesis focuses on are hearing, auditory processing and language.

A detailed description of all of the complex aspects relating to the development of hearing, auditory processing and language is beyond the scope of this thesis; therefore, this chapter will provide an overview of the areas of hearing, auditory processing and language development that are most relevant to this doctoral research.

2.1.1 Hearing

The ability to hear is an essential part of understanding the world around us, especially spoken language. The human ear is fully developed at birth, and responds to sounds that are very faint as well as sounds that are very loud. Infants have been shown to respond to sound even before birth (Yost, 2013). There is also evidence suggesting that almost from birth, infants are sensitised to the subtle auditory cues particular to their linguistic community (Carney, 1999).

The importance of hearing cannot be overestimated when considering language development. Chomsky (1995) posited that the human baby is born with a “language organ” or pre-existing,
specialised neural networks specific to humans that are awaiting auditory input and stimulation of symbol-based triggers to initiate activation and further development of those networks. Later research has suggested that what is innate is not a universal grammar and phonetics, but innate biases and learning strategies that place constraints on perception and learning according to auditory stimulation (Kuhl, 2000). This suggests that language and its underlying neural pathways are dependent on our ability to hear for their development in the typically-developing child.

The critical periods for hearing development begin very early, and infants are born with billions of neurons and trillions of connections (synapses) that await auditory stimulation to strengthen them (Chugani, 1999). Neurons and their associated synapses that receive no stimulation are then ‘pruned’ (Tierney & Nelson, 2009), such as in the case of deafness, meaning that for acoustic speech stimulation to affect the development and strengthening of neurons, the speech spectrum must be audible. This has been supported by research; for example, Webb, Heller, Benson and Lahar (2015) demonstrated experience-dependent plasticity in the auditory cortex in preterm newborns exposed to authentic recordings of maternal sounds before full-term brain maturation. Measurements using cranial ultrasonography at 30 days showed that newborn babies who had randomised exposure to maternal sounds (mother’s voice and heartbeat) had a significantly larger auditory cortex bilaterally, compared with the controls who received no such auditory input. Kuhl (1988) also demonstrated, using electrophysiological measurements, that by 6 months of age, the infant has already learned all of the basic sounds of his/her native language, and the human infant’s auditory repository or linguistic ‘map’ is completely formed by 1 year of age. Research using functional magnetic resonance imaging (fMRI) also supports this early cortical specialisation for speech and voice perception, along with a process of ongoing cortical refinement. For example, Dehaene-Lambertz and colleagues (2010) examined the organisation of brain activity in two-month-old infants when listening to speech or to music, and to their mother’s voice relative to a stranger’s voice. The results showed that listening to speech specifically activated the left planum temporale (auditory cortex) region of the brain, and that in this area there was a left-hemisphere advantage for both speech conditions (mother or stranger voice), while the activations
induced by music were symmetrical. Additionally, upon hearing the mother’s voice, activation was modulated in several areas including areas involved in emotional processing, but also most of the left posterior temporal lobe. Based on this, the authors suggest that cortical regions are differentially sensitive to the auditory environment very early on, and that the mother’s voice appears to have a special role in the early shaping of posterior language areas. The use of fMRI with infants has limitations because it measures slower changes in blood-oxygenation rather than fast cortical activity, the infants must remain still, and infants must be shielded from the loud fMRI machine sounds (Kuhl & Rivera-Gaxiola, 2008). However, electric potential measures (e.g. electroencephalography or event-related potentials), which have better temporal resolution of the cortical activity, have also shown results supporting early specialisation of cortical regions to auditory speech stimuli and preferential responses to sounds of the infant’s native language (e.g., Cheour et al., 1998).

This neural commitment to native-language phonetic properties and associated pruning and refinement explains some of the pattern of neurodevelopmental change in the early years. Research suggests that the influence of sensory experiences on these neural structures and function varies according to age, with some ‘sensitive periods’ of development. Buran and colleagues (2014) used adult gerbils to examine whether auditory deprivation during development or adulthood would affect one auditory processing domain, i.e. frequency (or pitch) modulation (FM) detection thresholds (defined as the minimum deviation from the continuous carrier tone that the animal could reliably detect). To do this, they induced bilateral conductive hearing loss of around 30 dB at either postnatal day 10 or after sexual maturity. All adult animals were then trained to respond to a 5 Hz FM (frequency modulated) tone embedded in a continuous 4 kHz tone. The researchers found that inducing hearing loss led to a deficit in FM detection relative to the control group. However, this deficit was greatest for early-onset hearing loss. Moreover, this difference could not be explained by sensation level (e.g. reduced hearing sensitivity with age) or task performance. Also using gerbils, Mowery, Kotak, and Sanes (2014) examined whether mild and transient hearing loss using earplugs during discrete sensitive periods could induce changes to cortical cellular physiology. By varying the age of hearing loss onset, the researchers
revealed brief sensitive periods of vulnerability for membrane and firing properties, and for inhibitory synaptic currents. These sensitive periods closed 1 week after ear canal opening on postnatal day 18 in the gerbils. The researchers then examined whether the cellular properties could recover from the induced periods of hearing loss. They removed the earplugs either prior to or after the closure of the sensitive period on days 17 or 23, and found that the earlier the age that hearing had been restored, the better the recovery of cellular function, but the firing rate remained disrupted. Furthermore, when earplugs were removed after the closure of the sensitive period, several changes in neural cellular function persisted into adulthood. Similar findings demonstrating sensitive periods for auditory processing functions have also been shown in mouse models (Polley, Thompson, & Guo, 2013).

Animal studies have limitations in terms of their generalisability to humans and are based on the assumption that neurodevelopment of those species parallels that of humans. However, such age-dependent effects have also been shown in human subjects through interventions (such as cochlear implants to restore hearing) that restore activity during these sensitive periods, and result in better recovery of neural function compared to providing these interventions at ages outside this period. Ponton and Eggermont (2001) examined the cortical maturation (using auditory evoked potentials [AEPs]) of people fitted with cochlear implants, normal-hearing individuals, and congenitally-deaf and implanted kittens. Analysis of the AEPs showed that some aspects of auditory cortical function do not mature during a period of deprivation from profound deafness, but maturation was partly restored by the use of cochlear implants. Although the study used non-speech stimuli, the researchers postulate that their finding of altered cortical processes of sensation and perception seen in the cochlear implanted group can be considered as prerequisite stages of the processing required for higher-order functions such as spoken language. This also suggests that auditory deprivation, whether in the case of deafness or temporary periods of conductive hearing loss from otitis media with effusion (OME), for example, may have an effect on the development of the neural pathways for auditory processing and/or language, especially if it occurs during these developmentally ‘sensitive periods’ (Kral & Sharma, 2012).
Taken together, this evidence demonstrates a link between auditory deprivation, whether from chronic OME or other hearing problems, and possible subsequent development of difficulties with auditory processing in both animal models and in children. Although restricted physically to the middle ear, OME can affect the transmission of sound through to the inner ear, and by extension, the auditory cortex (Whitton & Polley, 2011). Extended periods of hearing impairment specifically associated with middle ear disease have been implicated in the development of problems with both auditory processing in prospective longitudinal research (Gravel et al., 2006; Moore et al., 2003; Neville & Bavelier, 2002; Schilder et al., 1994; Tomlin & Rance, 2014), and language outcomes in some individuals (Laws & Hall, 2014; Roberts et al., 2004; Uclés et al., 2012; Yiengprugsawan & Hogan, 2013). However, the nature and extent of the contribution of OME-related hearing impairment to both auditory processing and language development is difficult to ascertain due to differences in these studies in methodological approach, measures for auditory processing or language outcomes, adjustment for confounding variables (such as socioeconomic status [SES]), and definitions of what constitutes chronic OME.

2.1.2 Auditory processing

Auditory processing describes the mechanisms the brain uses for recognising and interpreting the sounds it hears. More specifically, auditory processing includes the auditory mechanisms relied upon for the following abilities or skills: sound localisation and lateralisation, auditory discrimination, and auditory pattern recognition; temporal aspects of audition such as temporal integration, temporal discrimination (for example, temporal gap detection), temporal ordering, and temporal masking; auditory performance in competing acoustic signals (such as dichotic listening); and, auditory performance with degraded acoustic signals (ASHA, 1996; Bellis, 2011; Chermak & Musiek, 1997). These skills are essential for discriminating speech sounds and listening to language in environments with competing noise (for example, in the classroom or near loud traffic).

Auditory processing disorder (APD) (sometimes called central auditory processing disorder) is characterised by difficulties with listening and interpreting auditory information in the presence of normal peripheral hearing. Technically, it has been defined as a “deficit in neural processing of auditory
stimuli that is not due to higher-order language, cognitive, or related factors, yet CAPD [central auditory processing disorder] may lead to, or be associated with difficulties in higher-order language, learning, and communication functions” (Chermak & Musiek, 2014, p. 11). APD may also coexist with other disorders, such as learning disability, developmental language disorders or attention-deficit hyperactivity disorder (see for example, Moore, Rosen, Bamiou, Campbell, & Sirimanna, 2013; Sharma, Purdy, & Kelly, 2009).

There is ongoing debate about APD. Namely, whether it is a deficit specific to the auditory modality or is a multimodal deficit, where its neural basis lies, but also, around methods of testing and differential diagnosis in children (Jerger, 2009). The controversies arise, in part, because some assessment methods are dependent, at least in part, on additional modalities and cognitive abilities, such as attention, language, cognition and memory. As Bellis (2011) pointed out, “the ultimate utility of basic acoustic encoding in the auditory system is inextricably linked with how the individual is able to use the information provided by such encoding” (p. 92). APD is a disorder researched by, and with contributions from, both audiologists and speech-language therapists. Consequently, auditory processing disorder is controversial regarding its definition and diagnosis (Moore et al., 2013; Vermiglio, 2014).

Position statements from the American Speech-Language-Hearing Association (ASHA; 2005b), the American Academy of Audiology (2010), and the British Society of Audiology (2011) suggest that APD arises from deficiencies in the central auditory nervous system (the brain pathway from the cochlear nerve to auditory cortex) which leads to impaired performance on basic psychoacoustic tasks (for example, temporal processing, frequency discrimination and binaural interaction). However, as Moore, Ferguson, Edmondson-Jones, Rathib, and Riley (2010) pointed out, mapping performance on such psychoacoustic tasks with clinical presentations is difficult and they suggested that the diagnosis of a child or young person often depends more on the route of referral (i.e. audiologist versus speech-language therapist). However, in their review of evidence of APD, these authors noted that the close similarities between children with dyslexia or developmental language disorder (DLD) and APD are
only true on the group level. They add that there are many instances of children with auditory processing diagnoses who do not have accompanying language difficulties and vice versa. As such, ASHA (2005b) recommend APD be viewed as “a deficit in the neural processing of auditory stimuli that may coexist with, but is not the result of, dysfunction in other modalities”.

Controversies aside, the most common reason individuals are referred for auditory processing difficulties is listening problems in a wide range of scenarios, including difficulty in noisy environments, inability to follow conversations and, with respect to children, concerns over speech production, hearing in class, and inattention (Hind et al., 2011). Research has also shown that children and young people with APD are often characterised by adults, as someone “who just doesn’t listen!”, is distractible, obstructive or difficult (Bellis, 2011; Chermak, Somers, & Seikel, 1998).

2.1.3 Language

The American Speech-Language-Hearing Association defines language as a “complex and dynamic system of conventional symbols that is used in various modes for thought and communication”. Language includes understanding verbal expressions, organising thoughts and expressing them verbally. To use language effectively for communication requires a “broad understanding of human interaction including such associated factors as nonverbal cues, motivation, and sociocultural roles” (ASHA, 1982).

The majority of children’s language skills are acquired in the preschool years (Owens, 2015). It is still unknown exactly how infants are able to acquire most aspects of language with seemingly minimal input and without being explicitly taught, and there is still debate about the influences of an infant’s inherent, or “pre-wired” language abilities (nature) versus those of the environment (nurture). However, a child’s environment influences both cognitive and language development, especially in the socialisation elements of language (Bates & Tomasello, 2001).

Typically-developing children rapidly acquire both expressive and receptive language skills, which are made up of phonology, semantics (vocabulary and other meaning elements), syntax
Language acquisition and development occurs in the context of children’s early attachment experiences along with the attunement of their emotional responses to events and other people, and the development of some self-awareness and empathy towards others (Cohen, 2001). This acquisition of social cognition (that is, the knowledge, processing and application of socially-appropriate behaviours) is essential for establishing and maintaining relationships of all degrees of intimacy and complexity. Social cognition helps a child to acquire language, where sophisticated “mind-reading” abilities are needed to deduce word meanings and communicate in a socially-appropriate way (Fitch, Huber, & Bugnyar, 2010).

2.2. **Factors affecting the development of communication skills**

The development of social cognition and language occur in synchrony. This illustrates the importance of communicative competence for the development of social awareness and knowledge. It also suggests that the development of communication skills depends on the quality of relationships and language exposure with those around us. Children at greatest risk of developing a communication or language disorder include those who grow up in poor communication environments (for example, with minimal books, few toys, and limited parent-child activities) (Roulstone, Law, Rush, Clegg, & Peters, 2011), as well as those from families with a lower level of parental education, poor social support, teen parents, depressed mothers, poor nutrition, exposure to drugs or alcohol during or after pregnancy, pre-term or low birth weight, neglect or abuse, and placement in foster care (see Amster, 1999 for a review). Government-sponsored research in the UK suggests that young children from neighbourhoods with high levels of social deprivation are also more likely to be identified as having communication difficulties, with pre-school rates reaching 50% in the most disadvantaged neighbourhoods (Dockrell, Ricketts, & Lindsay, 2012; Roulstone et al., 2011). Research has shown that, in order to learn language best, a child
needs direct, child-focused engagement and ongoing opportunities to have meaningful communicative interactions with caregivers and other adults, as well as peers (Kuhl, Williams, Lacerda, Stevens, & Lindblom, 1992; Tomasello, 2003; Vihman, 1996).

Studies investigating the effects of maltreatment (various forms of abuse and/or neglect) have shown profound and far-reaching effects on a variety of neurobiological functions, including language (Snow, 2009). Unfortunately, the majority of child maltreatment begins in infancy and early childhood during the most critical and sensitive stage for post-natal brain development - between birth and age 3 (Cummings & Berkowitz, 2014). This is also the key early phase of language development.

Research findings from two recent meta-analyses suggest that both the receptive and expressive language skills of maltreated children consistently fall short of expected developmental norms. Sylvestre, Bussières and Bouchard (2016) looked at the results of 23 cohort studies that compared the language skills (receptive language, expressive language and pragmatics) of children who had experienced neglect and/or abuse, with those who had not experienced neglect and/or abuse. Their analysis showed that globally, there was a moderate, and significant, inverse association between physical abuse and/or neglect and language, especially in younger children. On average, these children performed .53 standard deviations lower than non-maltreated children, and all three domains of language were affected. Similarly, in their meta-analysis of 26 studies, Lum, Powell, Timms and Snow (2015) found that maltreated children had consistently and significantly poorer language skills, including receptive and expressive language. They concluded there was a “reliable association between child maltreatment and poor language skills” (p. 961), with effect sizes of .528 to .860. Although there was some overlap in the studies included in these two meta-analyses (16 studies), data from these reviews are compelling because they combine data from several independent primary studies addressing the same question and show a consistent pattern of poor language outcomes in children experiencing abuse and/or maltreatment.

As well as a child’s language development being dependent on the social and emotional relationships with those around them, it is also dependent on the quality of the language environment.
Hart and Risley’s (1995) ground-breaking study showed that the vocabulary of young children in the USA, from 10 months to 3 years of age, was profoundly affected by the amount of interaction they had with their parents. By age 4 years, in this study, children from professional families heard on average around 32 million more words than children from welfare-recipient families, and this correlated with their receptive vocabulary scores. Furthermore, over the study period, children in the professional families had heard 500,000 words of praise or approval, whereas children in the welfare-recipient families had heard only 75,000; the reverse was true for discouragements or words of disapproval (80,000 versus 200,000). Hart and Risley’s study is not without limitations (for example, although based on repeated measures over a long timeframe, it was only based on 42 families which were further divided into four socio-economic (SES) groups with data for the above findings based only on 13 professional versus 6 welfare families). However, subsequent studies have shown similar findings - that a low SES environment is a risk factor for poorer language outcomes (Clegg, 2006; Fernald, Marchman, & Weisleder, 2013; Hoff, 2003; Hoff & Tian, 2005; Locke, Ginsborg, & Peers, 2002; Roy & Chiat, 2013), with the educational level, age and interaction style of both mothers and fathers also having a substantial impact on a child’s language skills (see Hoff, 2006 for a review).

Studies have also shown that the effects of maltreatment and suboptimal language-learning environments may extend beyond language skills and affect other aspects of communication, such as auditory processing, although these studies are as yet few in number. Murphy, Pontes, Stivanin, Picoli and Schochat (2012) investigated the auditory processing skills of a group of children and adolescents who had been removed from home because of unsafe, neglectful or abusive situations, and compared them to age-matched controls. The researchers found that, for both children and adolescents, the study group performed significantly worse than the controls in all of the behavioural auditory processing tests, apart from the Paediatric Speech Intelligibility (PSI) test. Using the criterion of scores in the abnormal range for two or more tests (AAA, 2010), APD was diagnosed in 26 of the 27 (96.3%) study-group participants. It is worth noting that the authors had no information on how long the participants had been in the adverse living environments before being removed; therefore, the degree to which this
contributed to the poorer performance cannot be clearly ascertained, but it is clear that there was a
significant difference between the two groups, regardless of this. Another study also found that auditory
temporal resolution skills varied significantly according to socioeconomic level (Balen, Boeno, &
Liebel, 2010). The study compared 44 children aged 6 to 11 years from high, average and low SES
levels (measured using a parental questionnaire and government SES groupings), and found that the
higher the SES level of the children, the better their performance on the random gap detection test and
gaps-in-noise temporal processing tests. Both of these studies are cross-sectional and have fairly small
sample sizes, which limits their generalisability and power, and the authors of both studies suggest
additional research to confirm the findings. Despite these limitations, the results do suggest that poorer
living experiences and conditions during childhood may have detrimental effects on auditory processing
skills.

One explanation for these findings may be the association between poor hearing or ear health,
associated auditory deprivation from middle ear disease, and their effects on auditory processing
performance. Children subjected to abuse or neglect, and those from low SES levels have been found
to have poorer health and reduced access to healthcare, as demonstrated both internationally (Aday,
2002; Christian & Schwarz, 2011), and in New Zealand (Brabyn & Barnett, 2004). Periods of auditory
deprivation, such as those from chronic OME or other hearing problems, have been linked with
subsequent development of auditory processing difficulties (Moore, Hutchings, & Meyer, 1991;
Schilder et al., 1994; Zumach, Gerrits, Chenault, & Anteunis, 2009).

These findings are especially relevant in New Zealand, where statistics show that about 28% of
children grow up in poverty, with 8% in severe poverty, and with Māori and Pacific children over-
represented in these statistics (Simpson et al., 2016). It is also worth noting that Māori and Pacific
children are at particular risk of health-related hearing problems, as many also have greater unmet
healthcare needs and higher rates of all health risks than other ethnic groups in New Zealand (Ministry
of Health, 2013; Simpson et al., 2017). Recent New Zealand studies have shown high rates of glue ear
(otitis media with effusion, OME) and associated complications, especially in children from deprived
areas (Greville, 2001a; Milne & Vander Hoorn, 2010), and of Māori (Simpson et al., 2017) or Pacific descent (McCallum, Craig, Whittaker, & Baxter, 2015). Earlier studies by Giles and colleagues (Giles & Asher, 1991; Giles & O’Brien, 1989, 1991) found that rural Māori children exhibited some of the highest rates of otitis media in the world.

Extended periods of hearing impairment associated with middle ear disease have been implicated in the development of poorer language and auditory processing outcomes (Roberts et al., 2004; Schilder et al., 1994; Ucles et al., 2012; Zumach et al., 2009). However, mixed findings have been found in a number of prospective studies that have followed children from infancy or early childhood to around 11 years of age. A number of studies have reported evidence of adverse consequences of early OME on language and/or auditory processing measures. Silva, Chalmers, and Stewart (1986) reported that children in New Zealand’s Dunedin Multidisciplinary study identified as having early OME episodes had lower scores for speech articulation and verbal expression, but not verbal comprehension at 7 years of age. Bennett and Haggard (1999) found a low, but statistically significant, correlation between documented early OME and a more limited receptive vocabulary compared with the non-OME group at age 10 years. However, no significant relationships were found for other aspects of language. Similarly, Teele, Klein, Chase, Menyuk, and Rosner (1990) reported that OME in the first 3 years was related to articulation and morphological markers at age seven, but not to seven other language measures. Other research has shown that children who have experienced recurrent episodes of OME have been found to have lasting difficulties with auditory processing skills relevant to speech perception, especially in noise, as well as difficulties with binaural hearing (Moore et al., 1991; Schilder et al., 1994; Zumach et al., 2009).

In contrast, other studies have found no relation between early OME and later language measures (Harsten, Nettelbladt, Schalén, Kalm, & Prellner, 1993; Paradise et al., 2005; Peters, Grievink, Bon, Bercken, & Schilder, 1997; Roberts, Burchinal, & Zeisel, 2002), or have shown that auditory processing recovers after resolution of OME episodes. There are few explanations regarding why some of this research has demonstrated significant relations between early OME and later language or auditory
processing measures, whereas others have not. However, a possible explanation could be that more evidence of long-term OME effects was found in studies that included occurrences of OME as late as 5 years of age and therefore longer periods of auditory deprivation (e.g., Bennett & Haggard, 1999; Silva et al., 1986). Also few studies have measured the level of hearing impairment associated with OME in these children, which is likely to be the key variable affecting language outcomes.

One longitudinal study has also found a connection between recurrent episodes of childhood OME and development hyperactivity and inattentive behavioural problems at 15 years of age, lower IQ at 13 years, and poorer reading abilities between 11-18 years (Bennett, Haggard, Silva, & Stewart, 2001). The children in this study who had bilateral OME at age 5 also went on to be rated by their teachers as having significantly more behavioural problems than their peers at 7, 9, and 11 years of age.

The studies presented in this section show that there are a range of factors that can affect the development of hearing, auditory processing and language, and that often the development of more than one modality may be affected. Studies show there is often an overlap between language, auditory processing and learning disorders (Čeponienė, Cummings, Wulfeck, Ballantyne, & Townsend, 2009; Miller & Wagstaff, 2011; Sharma et al., 2009); however, there is debate about the nature of auditory processing difficulties in individuals with learning and language impairments. Hence, co-morbidity of these conditions is well documented, but the causal and underlying links have not been clearly established.

2.3. Communication disorders

As noted above, many factors can affect language development and communication skills (those mentioned are but a few relevant to the population of interest), and not all children are born with an equal advantage, in either biological or psychosocial terms, to maximise their communication competence. The childhood occurrence of a communication disorder or language impairment reflects a failure to acquire or develop competence in processing or using language. However the consequences are complex: children with language disorders can present with difficulty with all or parts of language,
including grammar, syntax, vocabulary, the social use of language, and using language effectively; effects can extend to difficulty with sequencing ideas, describing events, following directions, understanding others’ speech, and socialising (Tanner, 2002). Children exhibiting problems with language comprehension (receptive language) can easily be confused with those with APD, and co-morbidities between these and other disorders are well-established, meaning that accurately establishing the particular diagnoses for an individual child requires careful and often multimodal assessment (Moore & Hunter, 2013).

2.4. Communication disorders and the school environment

Once a child starts school, language and communication competency become increasingly important. Adequate hearing and auditory processing skills are needed to listen to instructions and lessons in an often-noisy classroom environment. Receptive and expressive language skills are needed to understand the linguistic content of teacher and peer conversations, as well as to contribute meaningfully.

Numerous studies have shown an association between speech and language impairments and difficulties with literacy (Harrison, McLeod, Berthelsen, & Walker, 2009; Nathan, Stockhouse, Goulandris, & Snowling, 2004; Sharma et al., 2009; Sices, Taylor, Freebairn, Hansen, & Lewis, 2007). Longitudinal studies have shown that children with speech and/or language difficulties are likely to have poorer academic outcomes and greater literacy-related learning difficulties than their typically-developing peers (Catts, Fey, Tomblin, & Zhang, 2002; Fraser & Conti-Ramsden, 2008; Leitão & Fletcher, 2004; Snowling, Adams, Bishop, & Stothard, 2001; Whitehouse, Line, Watt, & Bishop, 2009). In particular, Whitehouse and colleagues (2009) found that, of young adults with childhood-diagnosed pragmatic language impairment, autism spectrum disorder, or DLD, those with DLD were most likely to engage in vocational training and work in jobs requiring lower levels of language/literacy ability. However, other studies have suggested that the association is not a simple one. They find that the association between early speech and language difficulties and literacy varies according to the particular
skill being assessed and the child’s individual abilities (Hesketh, 2004; Hesketh, Dima, & Nelson, 2007; Holm, Farrier, & Dodd, 2008).

Unfortunately, the difficulties for a child with a communication disorder at school may extend beyond literacy and academic outcomes. The school years are when children learn to form meaningful friendships with peers that help nourish their self-esteem and general mental health. Delays in language development can have significant negative effects on a child’s social and emotional functioning, including an increased risk for social problems, anxiety, depression, and attention problems (Horwitz et al., 2003; Irwin, Carter, & Briggs-Gowan, 2002; Willinger et al., 2003). Moreover, language impairment has been found to affect social participation in school-age children (Sylvestre, Brisson, Lepage, Nadeau, & Deaudelin, 2016), resulting in fewer and poorer peer relationships (Fujiki, Brinton, & Todd, 1996), as well as poorer ratings of health-related quality of life (Hubert-Dibon, Bru, Guen, Launay, & Roy, 2016).

Unfortunately, longitudinal evidence suggests that language deficits remaining untreated by the age of 5 years have a substantial likelihood of persisting in some form beyond childhood (Clegg, Hollis, Mawhood, & Rutter, 2005; Elbro, Dalby, & Maarbjerg, 2011; Johnson, Beitchman, & Brownlie, 2010). This suggests that children entering adolescence with communication disorders, especially if undiagnosed, are at greater risk of experiencing continued difficulties across many domains of their lives.

2.5. The importance of communication skills during adolescence

A child’s academic and social success in school depends on his or her cognitive functioning and language development. When moving into secondary school, academic and social demands increase and the need for advanced language skills becomes increasingly important for success.

During adolescence, language develops to enable critical and higher-level thinking skills. This stage is characterised by increased word development and sentence length, a greater complexity of syntactic forms, significant growth and mastery of figurative language and lexical ambiguity, discourse,
and pragmatics (Nippold, 1993, 2016; R. Paul & Norbury, 2012; Scott & Stokes, 1995; Turkstra, Ciccia, & Seaton, 2003). Adolescents face increasingly complex linguistic and social situations as they process classroom lessons, engage in more sophisticated relationships with their peers, or join the workforce.

Language is also the primary tool adolescents use to gain entry into peer groups and form intimate relationships, both of which play an increasingly important role in the development of an adolescent’s personal identity (Hartzell, 1984; E. L. Paul & White, 1990; Smetana, Campione-Barr, & Metzger, 2006).

A communication or language disorder in adolescence has been described as an “invisible disability”, where its surface manifestations are often interpreted as behavioural, personality, and/or attention disorders (Patchell & Hand, 1993). Problems with communication during adolescence can include difficulty with verbal expression, limited vocabulary, an inability to ask appropriate questions or understand figurative language, violation of conversational rules and poor organisational skills – all of which are emerging vital skills for a young person’s educational or vocational success (R. Paul & Norbury, 2012; Ward-Lonergan, Liles, & Anderson, 1998; Wiig, 1984). Adolescents with persistent language impairments often continue to have difficulties with elements of language such as processing morphology and syntax (Nippold, Mansfield, Billow, & Tomblin, 2009; Stuart & van der Lely, 2015). They also tend to use less complex structures in their spontaneous utterances (Tuller, Henry, Sizaret, & Barthez, 2012), and their vocabulary knowledge is more limited in both extent and depth (McGregor, Oleson, Bahnsen, & Duff, 2013). Longitudinal data has also shown that adolescents with language impairment can experience a decline in nonverbal functioning (Botting, 2005; Conti-Ramsden, St Clair, Pickles, & Durkin, 2012). This may result from our reliance on language for most of our interactions with the world; most of our learning is dependent on being able to articulate and understand verbal reasonings and descriptions, and our reliance on these processes increases as we get older. However, these activities may be curtailed in individuals who have difficulties with language, particularly as children get older and the interactions become more complex.
Struggling to succeed in school, for whatever reason, can take a toll on a young person’s emotional health and self-concept/school-achievement relationship. Masi et al. (2000) found that a young person’s emotional beliefs about schooling and learning were significantly related to depressive symptomatology. In this study’s school-based sample of 150 adolescents (without diagnosed learning difficulties), self-reported depressive feelings correlated significantly with: self-reported high scholastic anxiety, the feeling of not being able to concentrate on studying, low self-evaluation, poor relationships with school-fellows and teachers, and a generally negative attitude toward school. These results were subsequently supported by the findings of a larger study by the same research group (Masi et al., 2001) and a large Finnish study (Fröjd et al., 2008). Examining the school experiences of young people in trouble with the law, a New Zealand-based qualitative study found that the majority of the 25 young people in youth justice residences that they interviewed reported negative memories of their schooling from an early age. Because they found learning difficult, especially towards the end of primary school, they reported boredom and negative experiences with learning and behavioural expectations in school, and used this to justify their aggressive and antisocial behaviour (A. Sutherland, 2011).

Adolescents with a hearing or communication disorder may have similar, if not worse, negative feelings towards themselves, their relationships, and their schooling if their difficulties leave them struggling to cope with ever increasing academic and social demands. Language impairments have been found to have a negative effect on the development of more intimate and meaningful friendships during adolescence (Conti-Ramsden, Mok, Pickles, & Durkin, 2013; Durkin & Conti-Ramsden, 2007; Wadman, Durkin, & Conti-Ramsden, 2011). Wadman, Durkin, and Conti-Ramsden (2008) also found that 16- and 17-year-olds with DLD experienced significantly greater shyness and had significantly lower global self-esteem than their typically-developing peers. Another study of 15- to 16-year-olds found links between DLD and an increased risk of poor emotional health symptoms using both self- and parental-report, compared with a group of age-matched controls (Conti-Ramsden & Botting, 2008). Similarly, a UK-based, nationwide birth cohort study of 6941 men and women study found that early
receptive language skills (at age 5 years) predicted mental health problems at the age of 34 (Schoon, Parsons, Rush, & Law, 2010).

There are other communication disorders besides language impairment that can have adverse consequences for adolescents. Young people with auditory processing difficulties also face a variety of problems that have the potential to interfere with their academic achievement and social interactions. Ahissar, Protopapas, Reid and Merzenich (2000) found a connection between the presence of auditory processing difficulties and poorer reading performance, as did Sharma and colleagues (2006) who used electrophysiological and behavioural tasks to investigate the auditory processing abilities of children with reading disorders. Difficulties with auditory processing have been linked with greater problems of listening and maintaining auditory attention (Chermak, Tucker, & Seikel, 2002), and increased risk of psychosocial and emotional difficulties (Kreisman, John, Kreisman, Hall, & Crandell, 2012).

Stevenson, Kreppner, Pimperton, Worsfold and Kennedy (2015) performed a systematic review and meta-analysis of 45 studies to examine whether children and adolescents with hearing impairment have higher rates of emotional and behavioural difficulties compared with normally hearing individuals. The researchers found that children and adolescents with hearing impairments have a greater likelihood of emotional and behavioural difficulties, especially in the area of peer relationships.

Longitudinal data show that failure to master advanced language skills can have consequences beyond the school years and have a negative effect on future vocational success. Several studies show that individuals with a history of language impairment are more likely to have jobs requiring limited education or training (Howlin, Mawhood, & Rutter, 2000), jobs classified as of lower SES (Johnson et al., 2010), or to be out of work (Conti-Ramsden & Durkin, 2012).

A qualitative study also revealed that children and young people with communication difficulties may experience an impoverished quality of life, compared with their peers – especially with regards to their social acceptance and emotional well-being (Roulstone & Lindsay, 2010).
2.6. Communication disorders and behaviour

Links have been found between communication disorders and behavioural problems in children and adolescents (Beitchman et al., 1999; Cohen et al., 1998, 2000; Cohen, 2001; Nelson, Benner, Neill, & Stage, 2007; Van Daal, Verhoeven, & Van Balkom, 2007; Yew & O’Kearney, 2013). Typical results are those of Mackie and Law (2010), who studied the structural language, pragmatic language, and word decoding abilities of seventeen 7-11 year-olds who had been referred to educational psychological services because of concerns about their behaviour. Compared with typically-developing matched controls, children in the referred group were significantly more likely to have difficulties with structural language, pragmatic language, and word decoding, with 94% having significant difficulties in at least one of the three language skills. In another example, Gilmour, Hill, Place and Skuse (2004) found in their survey of children diagnosed with conduct disorder and antisocial behaviour, who were excluded, or about to be excluded from school, that over two thirds had undiagnosed pragmatic language impairment, scoring at least two standard deviations below the typically developing mean on the Children’s Communication Checklist (Bishop, 1998). In Canada, Cohen and colleagues (Cohen, Davine, Horodezky, Lipsett, & Isaacson, 1993; Vallance, Im, & Cohen, 1999) found that almost 50% of children and adolescents receiving services for a range of disorders, such as behavioural disturbances or anxiety disorders, were found to have language impairments when they were tested. In New Zealand, Purvis, McNeill and Sutherland (2014) assessed the language and literacy skills of a group of male and female adolescents in mainstream education with behavioural difficulties, compared with peers with no behavioural issues. They found that the group of students with behavioural difficulties scored more poorly on receptive language and nonverbal intelligence measures, and there were significant associations between the severity of behavioural difficulties and two measures of receptive language, metalinguistic abilities, and nonverbal intelligence.

A large US-based longitudinal cohort also found that language ability predicted within-individual variability in the development of hyperactive and externalising behavioural problems regardless of the effects of sex, ethnicity, SES, and performance in other academic and intellectual
domains (Petersen et al., 2013). Two large, longitudinal birth-cohort studies based in Australia also found that poor language ability when young increased the risk of anti-social behaviour during adolescence (Bor, McGee, & Fagan, 2004; Smart et al., 2003). And on a similar note, UK-based longitudinal data have also revealed an increase in antisocial behaviour with age in individuals with diagnosed language impairments (Lindsay & Dockrell, 2012).

The relationship between communication disorders and behavioural problems in children and adolescents may not be a straightforward one. There is considerable variation in the studies that examine this relationship. For example, many of the studies above are based on different populations. Some studies investigated populations with specific diagnoses, such as conduct disorder (Gilmour et al., 2004) or attention-deficit hyperactivity disorder (Cohen et al., 2000). Other studies used populations defined by the behaviour exhibited by the children, i.e. externalising versus internalising (Nelson et al., 2007), by referrals to services (Mackie & Law, 2010; Vallance et al., 1999) or exclusion from school (Purvis et al., 2014; Ripley & Yuill, 2005). The studies also vary in terms of ages of the participants, sample sizes, cross-sectional versus longitudinal, aspects of communication that were assessed, and methods of assessing communication skills. Despite this, the studies above show a common finding: that language and communication difficulties are over-represented in children and young people with behavioural disorders. Stattin and Klackenberg-Larsson (1993) in a Swedish longitudinal study made a specific link to delinquent behaviour. They found that a childhood diagnosis of communication disorder or language delay was associated with a greater propensity to later engage in delinquent and criminal activity. Furthermore, language delays were a better predictor for male criminal activities than female, and at the age of 5 years, language maturity ratings were a stronger predictor for future registered criminality than intelligence at the same age. Results from the prospective Dunedin longitudinal study conducted in New Zealand also found that language measures, specifically verbal and auditory-verbal memory, were more predictive of self-reported delinquency than any other neuropsychological measure (Moffitt & Lynam, 1994).
Similar longitudinal research findings have emerged more recently. In Canada, a group of children diagnosed with a language impairment at age 5 years scored higher on parent-rated delinquency measures at 19 years of age (Brownlie et al., 2004). Lahey, D’Onofrio, Van Hulle and Rathouz (2014) in the USA found an indirect, significant association between receptive vocabulary (measured at 4-9 years of age) and later self-reported adolescent delinquency. This association was found to be mediated by mother-reported childhood conduct problems (at 4-9 years of age). Furthermore, the authors noted that significant interactions between receptive vocabulary and childhood conduct problems reflected steeper slopes for the predictive association between childhood conduct problems and adolescent delinquency when receptive vocabulary scores were higher.

These studies suggest that language impairment may be a risk factor for offending, but a causal relationship has not been established. Establishing causal links is difficult because of the complex interplay of factors that influence both offending and communication difficulties. Correlational studies can identify a link between two factors, but cannot establish whether changes in one factor (e.g. language skill level) will produce a change in the other variable (offending behaviour). Further research is needed to establish how compromised language development interacts with a background of psychosocial disadvantage to increase the risk of delinquency and offending (Snow, Sanger, & Bryan, 2011). The application of statistical approaches that examine moderating and mediating effects may be helpful in future research examining these interactions (Fairchild & MacKinnon, 2009).

2.7. Communication disorders and young people in youth justice

Both international and New Zealand-based research has shown that young people in trouble with the law often come from dysfunctional and low SES backgrounds (Moffitt & Lynam, 1994; Snow & Powell, 2011a). These young people also tend to have a greater overlap of disorders and more risk factors overall than their non-offender peers. These include, for example, poor general health and increased substance abuse (Braverman & Morris, 2011; Ministry of Health, 2005), chaotic, neglectful or abusive home environments (Stewart et al., 2008), conduct disorders, attentional disorders or
psychiatric disturbances (Lipsey & Derzon, 1998; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998), as well as learning disabilities, poor literacy levels, and poor social skills (Rucklidge et al., 2009; Snowling et al., 2000).

Backgrounds and risk factors such as these correlate with the nature and extent of language difficulties (Clegg, 2006; Cross, 2011; Roy & Chiat, 2013). These studies show that young people in trouble with the law have a much higher chance of having some form of language or communication disorder. In New Zealand, there are also additional considerations for this population. There is an over-representation of males, Māori and, to an extent, Pacific young people in youth offending statistics relative to the general population (Statistics New Zealand, 2016). These ethnicities are also over-represented in statistics for poorer health outcomes, higher rates of untreated otitis media, higher rates of permanent hearing loss and higher rates of APD than the general population (Digby, Kelly, Welch, & Thorne, 2014; Giles & Asher, 1991; Ministry of Health, 2013; Purdy, Taylor, Paterson, Zahoor, & Schluter, 2012). Low SES and Māori and Pacific ethnicities are also over-represented, relative to the general population, in family and child maltreatment statistics (Marie, Fergusson, & Boden, 2009, 2014), and, as outlined earlier, there is evidence showing that childhood maltreatment has links with poor language outcomes.

Harrison and McLeod (2010) analysed data from a large Australian birth cohort study of 4983 children which aimed to determine risk and protective factors for speech and language impairment in early childhood. They identified (using multivariate analysis) that the significant and consistent risk factors were being male, having ongoing hearing problems, and having a more reactive temperament. In New Zealand, more youth offenders are male, and a New Zealand-based birth cohort study found that, for young males especially, the combination of poor academic achievement, dysfunctional family backgrounds and low SES, are all predictors of deviant peer affiliation and involvement with youth justice (Fergusson, Horwood, & Nagin, 2000; Statistics New Zealand, 2016). Unfortunately there is little published information on the hearing and language status of youth offenders in New Zealand.
International studies from several countries have already established that youth offenders are more likely than their non-offending peers to have difficulties with language. In the UK, Bryan (2004) found that, of the 30 young males at one youth offender institute, 43% had significantly lower scores than expected for their age on the Boston Naming Test (Kaplan, Goodglass, & Weintraub, 1983), 73% were significantly below their age range on grammatical competency measures, 23% were also significantly below their age range on language comprehension, and 47% had more than one rating of moderate impairment on picture description tasks. A later study by Bryan, Freer and Furlong (2007) reported rates of language impairment between 66% and 90% on the oral subtests of the Test of Adolescent and Adult Language (Hammill, Brown, Larsen, & Wiederholt, 1994), with 46-67% of these being in the poor or very poor group. None of the 58 incarcerated male youth offenders obtained their age level for the vocabulary task. Although a strength of this study was the random selection of the young people, there was no comparison group in this or Bryan’s earlier study. A more recent UK-based study by Gregory and Bryan (2011) in community-based male and female youth offenders (n = 72; average 15 years of age), showed that 14-21% of the young people had language scores two or more deviations below the mean on at least one language subtest of the Clinical Evaluation of Language Fundamentals-Fourth Edition (CELF-4; Semel, Wiig, & Secord, 2003). Another recent study by Bryan, Garvani, Gregory and Kilner (2015) looked at language skills and whether any language difficulties had been previously identified in a slightly younger cohort (11-17 years) of young males with confirmed or alleged offending who were residing in a secure children home. Using standardised language and vocabulary assessments, the researchers found that around 30% of the cohort had scores 1.5 standard deviations below the mean on those assessments. Furthermore, only two young people had a previous record of language difficulties; whereas 20% had a diagnosis of mental illness, 50% had recorded previous drug abuse, and 31% had previously been taken into state care.

Higher rates of language difficulties have also been reported in a range of Australian studies. Snow and Powell (2008) found that a community-based sample of 50 male youth offenders had significant deficits in their abstract/figurative language skills, sentence repetition and narrative skills,
compared to a group of 50 non-offending peers matched for SES and education attendance who were on average one year younger. Moreover, 52% of the youth offenders also fulfilled the study’s criteria for DLD (1 standard deviation or more below the control group’s composite mean). In another study (this time examining figurative and narrative discourse ability), Snow and Powell (2004b) found that their group of nearly 70 male youth offenders on community-based orders exhibited significant difficulty understanding figurative and abstract language at the level of everyday idioms and turns of phrase, such as “it’s all up in the air”. Moreover, this same group produced fewer story grammatical elements when telling a basic story, and created qualitatively poorer narratives than the comparison group of non-offending peers. Two of the Australian-based studies also looked at the association between the degree of language difficulties and the severity of offending of the young people (Snow & Powell, 2008, 2011c). In their 2008 study, Snow and Powell found no significant associations between property-related versus violent offending; however, in their 2011 study of incarcerated youth offenders, they found an association that approached significance for non-violent offences in those classed as language versus non-language impaired. Moreover, a group of their young people considered “high offending” performed more poorly on all language measures than a group considered “non-high offending”; 71% of those with extremely high offending scores had DLD according to the study criteria.

A more recent Australian study by Snow, Woodward, Mathis and Powell (2016) examined the language status, emotion recognition and mental health of 100 male (85%) and female, mixed-race (30% Aboriginal) incarcerated youth offenders. The researchers hypothesised that, in addition to higher rates of language impairment, rates of alexithymia (difficulty identifying and describing emotional states) would be over-represented in youth offenders, and impoverished language skills would contribute to the alexithymia scores. The findings showed that 40% of the young people had CELF-4 language scores in the low-severe language impairment group, 26% were in the clinical range for anxiety, 40% were in the clinical range for stress, and alexithymia was present in 59%. Contrary to their hypothesis, alexithymia was associated only with mental state, and not language impairment.
Researchers in the USA have contributed a number of studies into the language skills of youth offenders. In their group of 24 incarcerated Caucasian males, Davis, Sanger and Morris-Friehe (1991) found significantly lower language scores for the youth offender group compared with the control group, with 38% of youth offenders meeting their criterion for language impairment. Sanger and colleagues (2001) reported that nearly 19% of their group of 67 mixed-race incarcerated female adolescents performed at least 1.3 standard deviations below the mean on two standardised language tests and fulfilled the study’s criterion for language impairment. Blanton and Dagenais, (2007) found that composite expressive and receptive language measures for a group of mixed-race incarcerated male and female adolescents were significantly poorer than results for a group of same-age, non-adjudicated peers, with 25% of the incarcerated youth versus 3% of the non-incarcerated control group considered language impaired. In another US-based study, just over 19% of a group of 67 mixed-race incarcerated female adolescents performed at least 1.3 standard deviations below the mean on the CELF-3 (Semel, Wiig, & Secord, 1995) and the WORD Adolescent Test (Zachman, Huisingh, & Barrett, 1989), and on that basis, fulfilled the study’s criterion for language impairment (Sanger, Moore-Brown, Magnuson, & Svoboda, 2001).

Reported rates of DLD tend to be lower in some studies of female than male youth offenders (for example, 19% of females had DLD in Sanger et al., 2001, versus 52% of males in Snow & Powell, 2008). These and other studies do show, however, that a disproportionate number of female youth offenders may also have communication difficulties relative to their non-offending female peers (see for example, Anderson, Hawes, & Snow, 2016; Sanger et al., 2001; Sanger, Moore-Brown, Montgomery, Rezac, & Keller, 2003; Snow et al., 2016). The few studies that have assessed the language skills of both male and female youth offenders have found no statistically significant gender-based differences - both genders performed significantly worse than their non-offending comparison groups (Blanton & Dagenais, 2007; Hopkins, Clegg, & Stackhouse, 2017; Snow et al., 2016). However, the studies are few in number, the samples sizes were small, and there remains a relative paucity of research specifically assessing the language skills of female youth offenders.
Looking at New Zealand’s youth offender population, one prospective study of 60 male youth (aged 16-19 years) from two prison sites had their oral language skills assessed as part of the Wechsler Individual Achievement Test-II (WIAT-II; Wechsler, 2001) to establish the presence of a learning disorder (Rucklidge et al., 2009). Measures of attention and general intelligence were also used. Using a cut-off standard score of 85 (1 standard deviation below the norm), 92% of the young offenders had learning disabilities (defined as at least one subtest composite score of <85). The WIAT-II average oral composite score for the entire group was 84.5, at the lower limit of the normative range. Over half (51%) scored below the cut-off of 85 for the listening comprehension sub-score, with 38% below the cut-off for the oral expression sub-score. Of interest in this study, 25% of the young people said they had sustained head injuries, and 58% of the 41 mothers who provided pregnancy information reported using harmful substances during pregnancy. The WIAT-II is normed on American populations and the study sample were from New Zealand, of whom 42% were Māori, which may mean the results over-estimate the prevalence of learning disabilities in this group.

The use of standardised assessments in youth offender populations has been critiqued for a potential lack of relevance to the young people’s actual experiences communicating (Bryan, 2004). It is also likely that standardised assessments of more formal English may pose difficulties for minority populations where English is not the first language, or where more formal language is less often used. This also raises the point that the youth offender population is unlikely to match the normative sample of those standardised tests, which is a general limitation of using norm-referenced material (Capitani, 1997). These standardised tests may also miss information about an individual’s language use during different social interactions, and limits the extent to which poor language skill scores on such tests can be extended to real-world communication performance (Whitmire, 2000). UK-based researchers, Hopkins, Clegg and Stackhouse (2016) used thematic analysis of semi-structured interviews with 31 youth offenders on court orders to examine their perspectives on their language and literacy skills to overcome these limitations of relying on standardised assessments and provide information about the young people’s language skills in real-life settings. The analysis revealed themes suggesting that the
young people were dissatisfied with their communication and literacy skills; they reported difficulties understanding others, a perceived lack of support and respect from others, and a negative impact on their self-esteem. The young people also expressed frequent disputes with authority figures, and reported that they often avoided using positive communication to resolve these disputes.

The same group of researchers looked at the receptive and expressive language skills and expository discourse abilities of fifty-two 16-year-olds engaged with youth offending services, compared with a matched group of 25 non-offending youth (Hopkins et al., 2017). Expository discourse was defined as language conveying knowledge of the technical and factual information of a given topic, which differs from temporally-based narrative discourse as it includes descriptions of terminology, concepts and procedure, specific to factual information, and is organised around cause-and-effect relationships that explain the topic. The researchers argued that this type of discourse more closely resembles the type of discourse a young person might experience in the youth-justice setting. They found an incident range of 69-100% for DLD in the offender group based on the criteria of -1 standard deviations from the 16-year-old norm on language tests and over half met this criterion for DLD based on their expository discourse scores; using the stricter criterion of -2 standard deviations from the norm, DLD was present in 44%. This compared with significantly fewer non-offenders (37% and 13%, respectively).

Anderson, Hawes and Snow (2016) conducted a systematic review of studies of the language skills of youth offenders. Sixteen studies that met the following inclusion criteria were included: English language; cross-sectional or longitudinal design; sample mean age between 10 and 21 years; youth offenders with documented link to juvenile justice system; standardised testing of more than one language domain and/or compared with control group; and, analysis of associations between language skills and youth offending. The review demonstrated, without exception, a strong association between youth offending and language impairment. However, the researchers noted that conclusions could not be drawn on causal-related factors due to the range of data and analytical variations in studies. Limitations of the studies included the varied nature of offending definitions for the study group.
(ranging from including community-based to incarcerated youth offenders), and varying criteria for diagnosing language impairments. There was also variation in the language modalities and skills that were assessed in the studies. This suggests that there is still little clarity on which language skills are a priority for assessment and for targeting for intervention. Furthermore, there was variation in which additional factors were measured that may also influence language skills (such as literacy skills, gender, ethnicity, SES, cognitive functioning and social skills). Determining the nature, and direction, of the relationships of these factors with language skills is limited by these methodological variations across studies. Additionally, all of the studies are cross-sectional in design, and some did not include comparison groups, or included non-matched control groups. Consequently, Anderson and colleagues stated that these methodological limitations do not allow conclusions to be drawn about the exact nature of the relationship between language difficulties and offending behaviour, i.e. whether it is causal or correlational, or direct or indirect. However, they concluded that the “available evidence demonstrates that youth offenders have compromised language skills” (p. 201). One limitation with this research is that there has been a focus on risk factors and little investigation of protective factors that could mitigate the relationship between language impairment and youth offending.

Bryan et al. (2015) recently noted that the literature base of research into language skills in youth offenders is relatively young. There is no real longitudinal data to establish whether the language difficulties have persisted from childhood, or even whether the language difficulties fit with a definitive diagnosis of DLD (i.e. when the language disorder is not associated with a known condition such as autism spectrum disorder, brain injury, genetic conditions and sensorineural hearing loss (Bishop et al., 2016)). Snow and Powell (2011c) suggested that the language difficulties of youth offenders could be described as generalised and non-specific, possibly reflecting disruptions in early socio-environmental factors that negatively influence the development of a range of language skills.

Most of the studies examining language abilities of young people who offend have not considered their hearing or listening status, despite the fact that this population has several factors putting them at risk of developing hearing difficulties. As with oral language, hearing and auditory
processing skills are essential for effective communication and representation in the justice system. A US-based study by Holmes et al. (1996) showed that 36% of 226 youth offenders failed their hearing screening test. Studies in adult prison inmates in the USA, Australia, and New Zealand have also shown very high rates of hearing impairment. In the USA, Jacobson, Jacobson and Crowe (1989), McRandle and Goldstein (1986), and Melnick (1970) all found that around 30-40% of adult prison inmates had some form of hearing loss. In Australia, Murray and LePage (2004) found that the hearing acuity of 789 prison inmates in New South Wales was significantly poorer than the general Australian population, especially in indigenous inmates. No New Zealand-based research into the hearing status of youth offenders has been published; however, in the adult prison population in New Zealand, unpublished research has shown 69-83% had some form of hearing loss, with rates especially high in Māori inmates (Bowers, 1986).

To date, only one (US) study has been found that focused on the auditory processing skills of youth offenders. The researchers examined one aspect of auditory processing, binaural processing, in male and female youth offenders (Moncrieff et al., 2014). Using the randomised Dichotic Digits Test, Moncrieff and her colleagues screened 399 adolescents in a juvenile detention centre (adjudicated group), 104 typically-developing adolescents from the community, and 27 adolescents diagnosed with APD. This test simulates a difficult listening situation by presenting different words (digits) simultaneously to the two ears. Seventy-two percent of the adjudicated young people had abnormally low scores (i.e. under the 95th percentile of the population norm), 17% showed signs of difficulties in both ears, and 25% had difficulties in one ear. Overall, less than 25-35% of the adjudicated participants had scores within the typical range. Furthermore, their performance was significantly poorer than the typically-developing adolescent group.

Only limited conclusions can be drawn from one cross-sectional study. However these findings suggest that the youth offender population may also be at risk of more difficulties with aspects of auditory processing than their non-offending peers, especially when considered in combination with the
documented hearing difficulties in adjudicated populations, and the possible links those hearing difficulties may have with the development of APD.

Despite the limitations of the research, the evidence outlined above supports the assertion that young people who offend are likely to have difficulties with oral language. Although these is a paucity of research into the hearing and auditory processing skills of these young people, the available evidence also suggests the likelihood that these skills will be poorer in the youth offending population.

2.8. Communication and New Zealand’s Youth Justice System

2.8.1 A brief profile of New Zealand’s Youth Justice System

Historically, New Zealand’s Justice System has been dominated by Western and colonial ideologies that lacked any acknowledgement of traditional Māori customary laws, or tikanga o ngā hara (Jackson, 1987). The Treaty of Waitangi (te Tiriti o Waitangi) was the original guiding set of principles that formed the context for New Zealand governmental responses of all kinds, justice included; however, these principles were rarely abided by in practice until the 1980s (McHugh, 2008). The 1980s saw the introduction of influential reports and law changes that would shape the future of New Zealand’s Youth Justice System. The first of these was the 1988 report of the Ministerial Advisory Committee on a Māori perspective for the then Department of Social Welfare, called Puao-Te-Ata-Tu (Day-break), which called for a more culturally-appropriate way of dealing with youth offenders (Ministerial Advisory Committee, 1988). The report argued for and emphasised the importance of true bicultural policies and strategies that would provide Māori with resources to develop their own programmes (Morris, 2004). Reforms to include the views of Māori were further supported by Moana Jackson’s influential two-part report for the then Department of Justice (Jackson, 1987, 1988). In 1989, two changes in law came into being that had the potential to significantly improve the lives of children and young people in New Zealand. One, the United Nations Convention on the Rights of the Child (UNCRC) (United Nations, 1989), would benefit young people the world over; the other, the Children, Young Persons, and Their Families Act (1989), was specific to New Zealand. Both place the child or
young person at the forefront and outline the importance of listening to children and young people in
general, but also within a cultural context (Ministry of Social Development, 2007).

The Children, Young Persons, and Their Families (CYPF) Act reformed New Zealand’s Youth
Justice System from a penal system towards one emphasising diversion, community-based sanctions,
family decision-making, and flexibility (Lynch, 2016). The new system held the young person
accountable, but also aimed to rehabilitate and reintegrate young offenders and support their families,
whilst also taking into account the needs of victims (Ministry of Justice, n.d.-b). It also emphasised the
 provision of culturally-sensitive and appropriate procedures for youth offenders (Morris, 2004).

2.8.2 Pathways through New Zealand’s Youth Justice System

New Zealand’s Youth Justice System has a number of ways it can respond to a young person’s
offending, depending on severity. The majority of youth offences are dealt with by the Police using
diversion with an on-the-spot warning. Some may be dealt with by specialist Police Youth Aid Officers
where further intervention may be required, but there is a clear preference under the CYPF Act to deal
with young people less formally (Maxwell, Robertson, & Kingi, 2002).

One of the main restorative processes used in the system is Family Group Conferences, where
the young person, their family, youth justice professionals, and sometimes the victim, meet to plan how
to deal with the young person who committed the offence. Family Group Conferences are compulsory,
closed meetings with a restorative focus, and are a partial amalgamation of aspects of traditional Māori
and European approaches to criminal justice, where, in Māori custom, tikanga o ngā hara (the law of
wrongdoing) is based on collective rather than individual responsibility (Ministry of Justice, n.d.-a). It
is an orally-based meeting where the aim is to help the young person to take responsibility for their
offending, find practical ways to make amends, address why they offended and find ways to prevent
recidivism (Cleland & Quince, 2014). A successful result is an agreed plan for the offender, with his/her
acknowledgement and acceptance of the crime, and its effects on the victim and wider community
(Morris, 2004).
Youth Court is a separate division of the District Court that deals with young people aged 14-16 years who have engaged in more serious criminal offending (12 and 13 year olds can be included if charged with particularly serious offences). While the young person appears in the Youth Court, providing they accept their charges, most of the important decisions are still made during Family Group Conferences. Where a young person has admitted their crime, and depending on their ethnicity, a young person’s follow-up Youth Court hearings may be seen in Rangatahi Court (Ngā Kooti Rangatahi) or Pasifika Court. Rangatahi and Pasifika Courts operate in the same way as the Youth Court, but are held on a marae (a Māori cultural space that includes open space and buildings) and follow Māori cultural processes, or in Pasifika churches or community centres and follow Pasifika cultural processes. These courts are designed to help young Māori, and Pacific young people and their families to engage in the youth justice process.

If the young person denies a charge that is subsequently proven in a defended hearing, or where the crime is of a more serious nature, the Youth Court can sentence the young person to custody in a youth justice residence, or be transferred to the District Court to consider a prison sentence (Ministry of Justice, n.d.-b).

In New Zealand there are four youth justice residences overseen by Oranga Tamariki - Ministry for Children; these were formerly run by Child, Youth and Family of the Ministry of Social Development. The residences cater for young people 14-17 years of age who are subject to Youth Court matters. The young people either have a Supervision with Residence Order or sentence, or they are on remand (held in custody while they wait for their trial or sentencing). Supervision with Residence Orders are for between 3 and 6 months and the young people must serve at least two thirds of that order in residence, with the reminder in the community. The length of a remand stay varies based on a number of factors including community placement options and the nature of the charges a young person is facing. Nationally, the average length of stay on remand is about 50 days (Nikki Halford, email, 8 January 2013). Often those young people who serve a Supervision with Residence Order have already spent a period of time in residence on remand.
The charges young people in residence face vary significantly. For instance, a young person may be remanded for a short period of time for breaching the conditions of his or her community-based Youth Court Order, while more appropriate conditions or options are considered. At the other end of the spectrum, they may be remanded facing purely indictable charges such as rape or murder. A Supervision with Residence Order is the highest order a Youth Court Judge can impose. Young people may, however, have their matters transferred to the jurisdiction of the District or High Courts depending on their charges, but can remain on remand in residence until sentencing (Ministry of Justice, n.d.-b).

The youth justice residences operate under a service model which seeks to balance the need for accountability for offending with an opportunity to offer therapeutic intervention to young people and their families. Young people attend school onsite, and are assessed by a full-time medical team. These young people have often not engaged in education for a period of time and are not operating academically at a level which matches their chronological age. Similarly, many have not accessed medical services on a regular basis, such as audiology, optometry or dentistry, and their time in residence is an opportunity to address any presenting needs in these areas (Nikki Halford, personal communication, 12 January 2013). The residences are also serviced by a Youth Forensic Team, who address mental health needs, and there is provision for Alcohol and Other Drug counselling.

Young people progressing through New Zealand’s Youth Justice System have to engage with many different youth justice professionals even if they do not progress to a youth justice residence. Most will interact with the Police (Frontline and Youth Aid), their Youth Advocate Lawyer, Oranga Tamariki professionals (such as Social Workers and Youth Justice Coordinators), and possibly the victim(s). For those attending Youth Court, Rangatahi Court or Pasifika Court, they will also engage with Youth Court staff and Judges, possibly forensic psychologists, health professionals, education specialists, and their families. And if sentenced to a youth justice residence they will have day-to-day interactions with residence staff, teachers and contracted youth justice programme providers. One thing that is common to nearly all of the interactions between the young people and these professionals is that they are verbal.
2.8.3 Communication demands and the consequences of impairment in youth justice

New Zealand’s Youth Justice System makes a number of demands on the communication skills of young people. They must be able to hear what is being said, be able to process and interpret those sounds, attach meaning to that auditory information, and process for structure or syntax, morphology, pragmatic or social meanings, and utilise their general knowledge base in order to understand the message. Then, when responding, they must organise their thoughts into coherent, structured sentences with appropriate grammar, and speak this message with an appropriate tone and body language. All of this must occur under often very stressful conditions for the young person.

Snow and Sanger (2011a) examined restorative justice through the lens of communication disorders to identify the communication demands of youth justice processes on young offenders. Drawing on a study by Strang and Sherman (2009), Snow and Sanger identified the communication skills youth offenders require in order to be able to participate in youth justice processes. These included: understanding questions posed by restorative meeting co-ordinators, youth justice workers, Police and victims; understanding complex narratives; having real-time responses to questions; having narrative skills to be able to meaningfully and clearly explain their perspective of what happened; having appropriate non-verbal communication, such as eye contact and body language; and, adequate hearing, and language and auditory processing to understand language when people speak over each other in emotionally-charged environments.

The authors concluded that, under pressure, it is more likely that responses of young people with communication difficulties will become monosyllabic, poorly elaborated, non-specific and with poor eye contact. These all potentially confirm often pre-formed biases about the young person’s attitude or character, such as interpreting them as apathetic, rude or refusing to comply. Stressful conditions and limited communication skills may also contribute to aggressive behaviour and detrimental outcomes for the young person (LaVigne & Rybroek, 2010). Young offenders have themselves described resorting to aggressive behaviour as well as having trouble controlling their anger during difficult conversations, especially with authority figures (Hopkins et al., 2016; Sanger et al., 2000).
Effective communication during restorative justice meetings such as Family Group Conferences or during group-based youth justice programmes requires additional skills to those of every-day interactions. These include social cognition (i.e. the ability to see the other person’s perspective, and identify verbal and non-verbal cues about another’s affective state and to infer unspoken meanings (Fitch et al., 2010)) and an understanding of the social rules of language (pragmatic aspects of language) in order to express genuine contrition and empathy for a victim.

Research into a range of populations with language disorders has found that impairments in social cognition impact on abilities to interact with peers (Botting & Conti-Ramsden, 2000; Rescorla, Ross, & McClure, 2007). Marton, Abramoff and Rosenzweig (2005) studied the social cognition skills of 7-8 year-old children with DLD. They found that “[t]he reactions of these children reflected the tendency of often departing the scene without resolving the conflict or expecting a third person to solve the conflict in an attempt to avoid the negotiation process” (p. 155). Their participants also tended to make inappropriate comments that exhibited a lack of understanding of the other person’s perspective. In a restorative justice context, this could mean a young person not seeing it as their responsibility to resolve issues and avoiding discussing them, thereby potentially creating an impression of disingenuity and an unwillingness to participate.

The young person needs to tell and re-tell their story of what happened at almost every stage. They tell it to the Police when first apprehended, again in forensic interviews, with their lawyer, and during court and Family Group Conference appearances. This task involves narrative skills. Vallance, Im and Cohen (1999) described narrative discourse as what enables speakers to describe characters and events, while explaining the reasons for their actions. They observed that language difficulties may only become apparent when the speaker has to respond to an unfamiliar topic, or generate answers to specific questions in extended discourse, especially “when the answers are expected to be complete and fully explained” (p. 702). In a justice context, speakers are encouraged to deliver a ‘free-narrative account’ of the incident (Wilson, Powell, & Freeman, 2002). Although seemingly simple, this is a developmentally complex skill that draws on sophisticated expressive and receptive language that
gradually increases during childhood and adolescence. These skills extend across semantics (the subtle shades of meaning that come with an increasing vocabulary), syntax (increasingly complex sentence structures, such as embedding ideas in relative clauses), and pragmatics (being able to respond appropriately according to the social context). A good story or advanced narrative should also have an appropriate temporal sequence describing the order of events. In adolescence, narratives increasingly require mastery of more abstract linguistic devices such as idioms, metaphor and sarcasm (Nippold, 2007). Children’s narrative skills progress through a series of stages (Applebee, 1978). By about age 5-7, children with typically-developing language skills produce at least chain narratives, if not true narratives. By about age 10 or 11, narratives should have progressed to detailed, multiple-episode stories with complex sentences, well-developed characters, some mental state verbs, temporal adverbs, and statements about causal relationships between motives and actions (Gillam & Pearson, 2004). Children or young people with language difficulties may be at an immature level in terms of their narrative development based on deficits in their other language skills (R. Paul & Norbury, 2012). These skills have been found to be problematic for youth offenders (Snow & Powell, 2008, 2011c). Snow and Powell (2005) also found that the narrative skills of their group of 30 youth offenders completing community-based orders displayed qualitative and quantitative features that were sufficiently poorer than, and different from, the non-offending peer group, calling into question their ability to tell their story of events in a forensic interview.

Youth justice systems use specific, technical legal jargon and terminology, as well as phrases and words that are not often used in every-day language. For example, in order to establish whether a young person admits their crime in New Zealand, a Youth Court Judge will ask if the charge is “not denied”. This is a complex negative construction that often has to be explained to young people. Sanger et al. (2001) found that many youth offenders with language difficulties could not define or describe the meaning of words such as ‘remorse’, ‘breach’, ‘conditional’, ‘verify’ and ‘caution’, all highly relevant to youth justice.
LaVigne and Rybroek (2013) examined the effects a language impairment would have on the communication specific to the young person’s client-attorney relationship from a legal perspective. They outlined a number of key issues likely to be problematic and to have negative consequences, including poor vocabulary, difficulty with complex sentences and following directions, poor reading skills, difficulty staying on topic, deficient receptive and expressive narrative skills, inability to understand inferences, difficulty with new material, limited ability to seek clarification, difficulty reading social cues, poor ability to recognise and control inappropriate behaviour, and insensitivity to cause and effect.

Much of the literature into language disorders in youth offenders shows that, in most cases, the language difficulties were previously undetected (Bryan et al., 2015). It may be that as a child’s age increases, communication difficulties are masked by strengthening and adapting ‘surface’ language skills and using everyday scripts that work in their day-to-day communication environment (Bercow, 2008), hence adults around them do not identify an oral language difficulty. However, in the unfamiliar and more formal context of the justice system, these everyday skills are not sufficient and the undetected language difficulty may result in poor participation and negative consequences for the young person.

One of these consequences may be that young people with communication difficulties end up with harsher sentences (Bryan, 2004; Bryan & Gregory, 2013; Snow & Sanger, 2011a). Bryan (2004) found during informal discussions with staff in a youth justice facility that youth who were identified as having communication difficulties were less able to verbalise what they wanted, and were then more likely to become violent. Furthermore, she reported that many of the interventions used during rehabilitation and counselling were verbally mediated, suggesting that, unless pitched at the language level of the young people with difficulties, they are likely to be of limited use. These findings are similar to Snow and Sanger (2011a), who suggested that young people in the youth justice system with inadequate oral language skills are also more likely to struggle with programmes they must participate in, and are more likely therefore to be viewed negatively in restorative justice processes.
This discussion of the literature has revealed the complex world of youth justice, and the high likelihood of young people lacking sufficient language skills to manage their interactions within youth justice well. The research in this area is relatively recent internationally, and almost none of it has been conducted on New Zealand populations. The consequences of these language difficulties may be great for the young people and for the integrity of the justice system. New Zealand is culturally and socially unique and hence the nature and impact of these difficulties could differ from international findings. New Zealand’s population of youth offenders may share many of the risk factors for hearing, auditory processing and/or language difficulties to those in other countries, but we lack data on New Zealand youth, and on the outcomes in the justice system. Opinions and experiences of those involved may be just as important as language skill assessment, as this data allows multiple voices to be heard and a complex interaction of factors to be revealed. These points are the motivation for this research project.

2.9. Methodological approach

Data that involves both skill assessment and reports of experiences requires both quantitative and qualitative research methods. A mixed methods approach can provide a deeper, broader understanding of the phenomenon of interest, and add complementarity and value by increasing validity in the findings (Hurmerinta-Peltomaki & Nummela, 2006). Mixed methods may also assist with knowledge creation and help researchers cultivate ideas for future research that may not have arisen from using just one research approach alone (O’Cathain et al., 2010).

This research took an exploratory approach to both methods of enquiry, whereby it looked for patterns, ideas and/or hypotheses rather than trying to test or confirm hypotheses established by prior research (Onwuegbuzie & Leech, 2005; Vogt, 2005). This mixed-method approach aimed for complementarity between the two research methods, that is, to seek elaboration or enhancement of the findings from one analytical strand [a quantitative study], with the results from the other analytical strand [two qualitative studies] (Onwuegbuzie & Leech, 2005). Using both methods in this way allowed for the description and quantification of the communication skills of the young people, in addition to
capturing how young people (without identified communication difficulties) and youth justice professionals describe communication in the current youth justice context.

2.9.1 **Quantitative approach**

Study 1 sought to compare the hearing, auditory processing, and receptive and expressive language differences between New Zealand-based male youth offenders and remandees in two youth justice residences, compared with a group of New Zealand High School students. This study also aimed to determine whether differences in these measures vary according to nonverbal IQ.

Testing in this study comprised several audiological measures: immittance audiometry (tympanometry and acoustic reflex thresholds), pure-tone audiometry, and self-reported hearing ratings. It also included a battery of four auditory processing tests, two standardised language measures and one nonverbal intelligence test.

Peripheral hearing was assessed in study 1 using pure-tone audiometry and immittance audiometry for several reasons. First, there are no known published data on the hearing status of young offenders in New Zealand. Secondly, understanding the peripheral hearing status of the young people in study 1 was essential to understand and inform interpretation of their performance on subsequent auditory processing and language tests. Self-reported hearing was also included to provide subjective information about the young people’s view of their hearing. Self-reported hearing measures are a quick indicator of perceived handicap that were used successfully with 11 year-olds in the Pacific Islands Family Study (Purdy et al., 2012), and self-reported measures have been validated in several studies (for example, Kramer, Kapteyn, Festen, & Tobi, 1996; Sindhusake et al., 2001).

Pure-tone audiometry (PTA) is the most often used hearing test used to identify hearing threshold levels of an individual; it allows the determination of the degree, type and configuration of a hearing loss (J. W. Hall & Schwanepoel, 2010). Including immittance audiometry provides objective measures of the functioning of the middle ear and, alongside PTA thresholds, can help determine the characteristics of auditory dysfunction (Welling & Ukwins, 2017). Tympanometry assesses mobility of the eardrum and the conduction of sound via the middle-ear bones by creating variations of air pressure
in the ear canal; this test permits a distinction between sensorineural and conductive hearing loss (J. W. Hall & Schwanepoel, 2010). The tympanogram can be classified into four different patterns on the basis of its characteristics, and these can then distinguish normal function from various types of middle ear pathology. For this purpose, immittance audiometry has very high specificity and sensitivity (J. E. Sutherland & Campbell, 1990), although in some rare cases of ossicular fixation, for example, immittance audiometry may miss a conductive hearing problem (Esteves, Silva, Coutinho, Abrunhosa, & Almeida e Sousa, 2014). The acoustic reflex threshold (the contraction of the stapedius muscle following an intense auditory stimulus) can be valuable in determining whether there is conductive hearing loss and other auditory pathologies (J. W. Hall & Schwanepoel, 2010). As a screening tool, immittance audiometry has been shown to be valuable in populations at risk for middle ear effusion (J. T. Jacobson, 1981; J. E. Sutherland & Campbell, 1990), and as outlined above, the demographics of youth offenders in New Zealand suggest many would be at increased risk of middle-ear problems.

Currently, no agreed-upon gold standard test exists for auditory processing due to its complexity and heterogeneous nature (American Speech-Language-Hearing Association, 2005b). Therefore, comprehensive evaluation requires a multidisciplinary approach with special consideration given to cognitive, memory and linguistic aspects (Bamiou, Musiek, & Luxon, 2001). Behavioural audiological tests are most commonly used to assess auditory processing in children and young people as they are easy and inexpensive to administer, but have the disadvantage that they can be influenced by extraneous variables (Jerger & Musiek, 2000). Electrophysiological and electroacoustic tests (such as auditory brainstem and cortical auditory evoked potentials and otoacoustic emissions) provide objective measures that are less influenced by extraneous variables, but are not widely used due to being more time consuming, expensive and not available to all clinicians (Chermak, 2001). Consequently, the best current approach for diagnosis should be based on the outcomes of several key behavioural tests, supplemented by electroacoustic and electrophysical measures (American Academy of Audiology [AAA], 2010; Jerger & Musiek, 2000).
The currently-recommended approach to evaluating auditory processing requires the administration of multiple tests (AAA, 2010; Chermak, 2001; Moore et al., 2010). This helps determine the nature of the auditory processing difficulties, namely, which processes are deficient and the severity of dysfunction of different auditory processing abilities. Interpretation of performance on any one auditory processing test in the test battery is guided by criterion cut-off scores. In order to differentiate typical from atypical performance, cut-off scores based on normative data are set at a performance level. The level most often used is two standard deviations from the mean; this level has been selected in order to achieve the best balance between sensitivity and specificity in APD testing (AAA, 2010). Musiek and Chermak (2013) describe the characteristics of reliable auditory processing tasks: they should exhibit good sensitivity (the ability of an auditory processing test to identify the presence of a disorder when there is one present) and specificity (the ability of a test to correctly identify individuals who do not have the disorder). An auditory processing test should also be robust to peripheral hearing loss, in other words, be able to accurately identify an auditory processing deficit in an individual with some degree of peripheral hearing loss (Musiek & Rintelmann, 1999).

The auditory processing tests used in study 1 were selected based on their minimal linguistic loading and documented high efficiency and sensitivity (Moore et al., 2010; Musiek, Chermak, Weihing, Zappulla, & Nagle, 2011) and followed the minimal-test battery approach of Jerger and Musiek (2000).

The tasks were designed to test a range of auditory processes recommended by the American Speech-language-Hearing Association Task Force on Central Auditory Processing Consensus Development (1996). These were: (a) Dichotic Digits Test Version 2 (DDT; Musiek, 1983), (b) Frequency Pattern Test (FPT; Musiek, 1994; Noffsinger, Wilson, & Musiek, 1994), (c) Frequency Discrimination (FD; Chilekwa, Folkard, Hind, Ferguson, & Moore, 2009), and (d) Backward Masking with a 0-millisecond gap (BM-0ms; Chilekwa et al., 2009). A detailed description of these tasks used for study 1 can be seen in Appendix 15.
Two of the auditory processing tests (BM-0ms and FD) were administered using the Institute of Hearing Research Multicentre study of Auditory Processing System for Testing Auditory Responses-2 (IMAP-STAR2) - a software platform designed to test hearing in children and young people (Chilekwa et al., 2009). The IMAP-STAR2 test battery attempts to overcome the difficulties of sensitivity and specificity outlined above, using computer animations designed to engage and maintain attention, while having the capability to measure a variety of the participant’s auditory abilities. For each of the subtests, the individual must discriminate between three different sounds and make a forced-choice decision. Backward masking is a temporal processing test; deficits in temporal processing might result in difficulties hearing subtle changes in stress, rhythm and intonation of speech, which may lead to problems with spelling or hearing similar words (Bellis, 2011). Backward masking measures how well an individual is able to detect a sound when it is immediately preceded by a competing sound with varying gap durations between the target sound and the preceding sound; in the case of BM-0ms, there is no gap. This skill is particularly relevant to speech perception as one sound can mask another (Koyama et al., 2003); for example, in English, final consonants are softer than the louder vowels that precede them. In conversational speech the gaps between different speech sounds may be very short or absent and hence this type of temporal processing is important for speech recognition. The second subtest for this research in the IMAP-STAR2 test battery is frequency discrimination (FD). This refers to the ability to distinguish between tones of different pitch; this ability is often tested by asking an individual to identify the one sound out of three that is either higher or lower than the others. The ability to discriminate a change in frequency is essential for distinguishing place of articulation in stops, and manner in stops and glides; difficulties with this skill can affect both speech perception and development (Bellis, 2011; R. W. Keith, 2007). BM-0ms and FD have been found to be the most sensitive measures of the IMAP battery as they have the greatest inter-individual variability and have the greatest susceptibility to poor performance in children with learning difficulties (Ferguson, Riley, Ratib, Edmondson-Jones, & Moore, 2009).
The other two tests, DDT and FPT, are tests that assess binaural hearing ability, and frequency
discrimination and temporal sequencing, respectively. The DDT measures the ability of an individual
to recognise and process different messages presented simultaneously to the two ears (in the case of the
DDT, numbers); this is an important skill for listening in noisy environments, or when multiple speakers
talk simultaneously, as often occurs in modern classrooms (Greenland & Shield, 2011). The FPT
measures the auditory process of temporal patterning and interhemispheric transfer via the corpus
callosum; this task requires frequency discrimination, temporal sequencing, auditory memory, and
verbal labelling of the three-tone sequence. Temporal patterning is important for perceiving the
intonation and acoustic contours of language, and difficulties with this skill can include difficulty
understanding sarcasm, and recognising the meaning of words that vary depending upon stress (Bellis,
2011). Both the DDT and FPT tests have been shown to have a good sensitivity, specificity and
efficiency, based on research involving participants with brain lesions affecting the central auditory
nervous system (Musiek et al., 2011). All four of these auditory processing were chosen for their
minimal linguistic and cognitive loading, as it was assumed some of the young people being tested
would be likely to have some difficulties with language. The DDT and FPT, especially, have been
reported as being more difficult than some other auditory processing tests for younger children and the
elderly in a review by Chermak, Bamiou, Iliadou, & Musiek (2017); however, these same authors also
note that these tests have low cognitive and linguistic loading and use over-learned words (numbers 1-
10; ‘high’ and ‘low’), which should pose few problems for older subjects and those of normal cognitive
abilities with adequate practice and familiarisation. It was assumed for the current study, that because
the FD and BM-0ms tests had been developed and used effectively on younger subjects (Ferguson,
Riley, Ratib, Edmonson-Jones, & Moore, 2008; Purdy, Taylor, Paterson, Zahoor, & Schluter, 2012),
these tests should be sufficiently straightforward for adolescents with adequate peripheral hearing
sensitivity and scores on a nonverbal IQ test. Throughout the administration of the tests, attention was
paid to the concentration and attention of the young people performing the tests to ensure optimal
engagement, and familiarisation and practice items were repeated until it was clear the young people
understood the tasks. Because of concerns that auditory processing difficulties may be associated with poorer hearing, only young people who had passed the residence screening test were included in the study (i.e. not suspected of having hearing difficulties), and associations between auditory processing results and peripheral hearing sensitivity were assessed using correlation analysis.

In study 1 a diagnosis of auditory processing disorder was made using the AAA Clinical Practice Guidelines (2010) criterion: a score two standard deviations or more below the mean for at least one ear on at least two different behavioural central auditory tests (AAA, 2010). This criterion is based mostly on studies of sensitivity and specificity obtained using different cut-off values for various central auditory tests used to identify known central auditory nervous system dysfunction; this criterion has also been recommended by the American Speech, Language and Hearing Association (2005b).

Overall, this combination of auditory processing tests and the AAA (2010) used in this research were selected as being among those recommended by professional organisations, well supported by current evidence, but also contributing consistent APD data to New Zealand’s evidence base. This same combination of tests was used on a large group (N=920) 11-year olds in the Pacific Islands Families Hearing Study (Purdy, Taylor, Paterson, Zahoor, & Schluter, 2012).

To assess the language skills of the young people in study 1, three standardised tests were used. The first, the Clinical Evaluation of Language Fundamentals-Fourth Edition Australian version (CELF-4; Semel, Wiig, & Secord, 2006) is a widely-used assessment tool that was chosen to assess the expressive and receptive language skills of the young people. It is a standardised, norm-referenced test that is designed to diagnose and determine the severity of a language disorder by identifying relative strengths and weaknesses over a number of subtests for individuals aged from 5 to 21 years of age (Paslawski, 2005). The Australian version was chosen as it was considered to be more closely aligned with New Zealand language than the American or United Kingdom versions (Babel, 2010; P. Peters Collins, & Smith, 2009). It uses Australian norms reflecting the population characteristics from the 2001 Census and includes data from 852 Australian children and young adults (Semel et al., 2006). The CELF-4 was one of the most commonly used assessments in other studies investigating the language
skills of youth offenders (see the review by Anderson et al., 2016). Furthermore, the Australian CELF-4 has demonstrated good reliability and validity (Semel et al., 2006).

Narrative language skills were assessed using the Test of Narrative Language (TNL; Gillam & Pearson, 2004), where subjects had to listen to stories and answer questions about them, retell stories and create their own stories, with or without pictorial cues. The TNL was designed and normed for children up to the age of 12 years, but in this case was used primarily as a means to collect a narrative for detailed analysis. It was selected to provide a score that could be compared within and between groups as an indicator of narrative ability. The data for this test was collected for intended future sub-analysis, and has not been presented as part of this doctoral research.

The Test of Nonverbal Intelligence-3 (TONI-3; Brown, Sherbenou, & Johnsen, 1997) is a norm-referenced measure of intelligence, abstract reasoning and problem solving that is free of the use of language. The nonverbal intelligence measure was used to reduce the possibility that the young person had an intellectual impairment that could confound the results of the auditory processing or communication assessments. A cut-off standard score of 75 was chosen to rule out intellectual impairment, incorporating the standard error of measurement of the TONI-3, as recommended by the American Psychiatric Association in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (American Psychiatric Association, 2013). Both the American Psychiatric Association and the American Association on Intellectual and Developmental Disabilities suggest a score of <70 as intellectual disability associated with significant cognitive deficits (National Academies of Sciences, Engineering, and Medicine, 2015). The cut-off value of 75 was also selected recognising that intervention studies have shown that gains in language skills by children below the commonly-applied cut-off score of 85 were similar to those above 85 (Bowyer-Crane, Snowling, Duff, & Hulme, 2011; Cole, Dale, & Mills, 1990; Fey, Long, & Cleave, 1994).

Criteria for diagnosis of language disorders vary. They are typically based on a discrepancy between receptive and/or expressive language and nonverbal IQ (when nonverbal IQ scores are within a specified normal range), standard scores being low relative to chronological age, or discrepancies
between receptive and expressive language scores (Bishop et al., 1999; Catts et al., 2002; Fey, 1986; Kamhi, 1998; Weismer et al., 2000). Because of these variations in the literature, the criteria used in study 1 to diagnose a language disorder was that the participant must have one or more of the following:

(a) CELF-4 scores (receptive and/or expressive) below the 10th percentile (equating to a standard score of 80; Bishop et al., 1999; Catts, Fey, Tomblin, & Zhang, 2002),

and/or

(b) CELF-4 scores within the expected range for typically-developing adolescents (≥80), but receptive and/or expressive scores ≥1 SD below TONI-3 scores (Catts et al., 2002),

and/or

(c) CELF-4 scores within expected range but receptive language scores ≥1.30 SDs (20 points) below expressive language scores (Fey, 1986; Kamhi, 1998).

2.9.2 Qualitative approach

The quantitative research conducted for this thesis will provide measures of the nature and extent of the young people’s hearing, auditory processing and language skills. However, these measures will not describe how the young people experience using these communication skills in the context of New Zealand’s Youth Justice System.

Qualitative research offers the opportunity to gather rich information and meaning from the stories of participants that would not otherwise be available through quantitative methods (Creswell, 2013). The use of interviews for this purpose also provides the researcher with access to the context of people’s behaviours and experiences within particular environments, and thereby allows researchers to better understand the meaning of them (Seidman, 2013). Including the voice of young people in trouble with the law has been increasingly encouraged within New Zealand. New Zealand’s Oranga Tamariki recommended that legislative changes should be made to ensure that “the views of young people at an individual and system level are heard” (Ministry of Social Development, 2015a, p. 107) and that processes “must also encourage and value feedback from children, families and caregivers” (Ministry
Therefore, a group of young people, different to those in the first study, were interviewed in study two in order to add context and experiences to enrich our understanding of the settings and situations in which these young people must communicate. The language skills of these young people were not assessed, as the aim was to gather the general communication experiences of an opportunity sample of young people at the residence at that time, rather than assess those experiences through the lens of their language-skill status. Furthermore, including the views of youth justice professionals adds the valuable perspective of those who work with the young people on a daily basis.

There is research showing that professionals in the youth justice setting have useful and informative perspectives on the communication difficulties faced by the young people they work with (Bryan, 2004; Snow, Bagley, & White, 2017). These studies provide unique and valuable insights into what aspects of communication the young people find challenging, as well as what can help those young people to participate. The reality of youth justice settings may be very different for those directly involved to what is often described in the media or by the service providers overseeing youth justice processes; therefore, qualitative data, such as interviews and observation, should be treated as essential for informing changes in policy or practice (R. R. Myers, 2015).

Very little is known about the communication skills and experiences of youth offenders in the New Zealand context. Interpretation and analysis of the interview data for both of the qualitative studies drew on a general inductive approach (Thomas, 2006). This allowed the findings to emerge from content that was frequently occurring either within or across the interviews, or that was emphasised or implied by the participant through the intensity or emotive language the participant used in referring to it. The sample sizes of both of the qualitative studies allowed both a description of themes across the entire data set, as well as at the level of the individual. This was done using a combination of latent thematic analysis and comparative analysis. Latent thematic analysis is an approach that goes beyond the semantic level of the data and looks for the underlying ideas, assumptions and conceptualisations that shape the semantic content of the data (Braun & Clarke, 2006). It is a more flexible approach than a
traditional grounded approach, which requires ongoing revision of a theory that is developed and tested
during the interview process, and may not be possible with difficult-to-access populations, such as youth
offenders (Braun & Clarke, 2006). Comparative analysis analyses the similarities and differences across
cases, and makes connections among the themes or categories in order to test and to develop the
categories further (Onwuegbuzie & Combs, 2010).
Chapter 3. Hearing, auditory processing, and language skills of male youth offenders and remandees in youth justice residences in New Zealand

3.1. Introduction

3.1.1 Language and young people in the criminal justice system

Young people in trouble with the law are a diverse population, but typically come from dysfunctional and low socio-economic status backgrounds (Moffitt & Lynam, 1994; Snow & Powell, 2011c, 2011b). They also tend to have a higher incidence of overlapping disorders and more risk factors overall than their non-offender peers, including poor general health and increased substance abuse (Braverman & Morris, 2011; Ministry of Health, 2005), chaotic, neglectful or abusive home environments (Stewart et al., 2008), conduct, attentional disorders or cognitive disturbances (Lipsey & Derzon, 1998; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998), as well as learning disabilities, poor literacy levels, and poor social skills (Rucklidge et al., 2009; Snowling et al., 2000).

Backgrounds and risk factors such as these have been found to correlate with the nature and extent of language difficulties (Clegg, 2006; Cross, 2011; Roy & Chiat, 2013). Hart and Risley’s (1995) ground-breaking US-based study showed that the vocabulary of young children was profoundly affected by the amount of interaction they had with their parents. By age 4 years, children from professional families heard around 32 million more words than children from welfare-recipient families, and this correlated with their receptive vocabulary scores.

It is not surprising then to see that there is a small, but growing body of research showing that language skills are often significantly worse in youth offenders than their non-offending peers. Studies are relatively recent, and not as yet very extensive, but they are consistent. In the UK, Bryan and her colleagues found rates of language impairment between 66% and 90%, compared with rates of 3% to 12% in typically-developing groups of non-offenders (Bryan, 2004; Bryan et al., 2007). Snow and
Powell (2008) in Australia found that over 50% of a community sample of 50 male youth offenders had significant deficits in their abstract/figurative language skills, sentence repetition, and narrative skills.

A number of studies from the USA have also shown high rates of language impairment in young people in the criminal justice system. In a group of 67 mixed-race incarcerated female adolescents, around 19% performed at least 1.3 standard deviations below the mean on two standardised language tests and fulfilled the study’s criterion for language impairment (Sanger et al., 2001). Similarly, Davis, Sanger, and Morris-Friehe (1991) found that 38% of a group of incarcerated Caucasian males met their criterion for language impairment, while another US-based study also showed that composite expressive and receptive language measures for a group of mixed-race adjudicated male and female adolescents were significantly worse than a group of same-age non-adjudicated peers (Blanton & Dagenais, 2007). In light of these findings, Gregory and Bryan (2011) and Snow and Powell (2012) concluded that it would be reasonable to expect that 50-60% of youth offenders may present with language difficulties.

The rates of language impairment vary in these studies due to a range of methodological differences, such as community-based versus custodial settings, different language measures and different cut-off points for language impairment; what remains consistent, however, is that rates of language difficulties were alarmingly high for youth offenders. The other consistent and disturbing fact is that the language impairments were in most cases previously undetected. This poses a significant problem for youth offenders as a group. Oral communication is the interface between these at-risk young people and law enforcement, welfare agencies, and restorative justice processes (Lynch, 2016; Snow & Sanger, 2011a). The communication skills and hearing status of at-risk young people are critical to all levels of their encounters with the legal system, and there is evidence to suggest many young people presenting at youth courts may be struggling to understand and participate fully in proceedings. Only half of the young people interviewed about their experiences in the youth court in New Zealand said they understood what was happening (Ministry of Justice, 2011). The other half reported they did not understand, or only understood on some occasions, with one young person saying: “I don’t understand
what they are saying … they start talking about something that I don’t even know what they are talking about. I don’t even know what the words are.” (Ministry of Justice, 2011, p. 40).

3.1.2 Importance of hearing and auditory processing

Interestingly, most of the studies examining language abilities of young people who offend have not considered their hearing or listening status, despite the fact that this population has several factors putting them at risk of developing hearing difficulties. As with oral language, hearing and auditory processing skills are essential for effective communication and representation in the justice system. A US-based study by Holmes et al. (1996) showed that 36% of 226 youth offenders failed their hearing screening test. Studies in adult prison inmates in the USA, Australia, and New Zealand have also shown very high rates of hearing impairment. In the USA, Jacobson, Jacobson and Crowe (1989), McRandle and Goldstein (1986), and Melnick (1970) all found that 30-40% of adult prison inmates had some form of hearing loss. Similarly, in Australia, Murray and LePage (2004) found that the hearing acuity of 789 prison inmates in New South Wales was significantly poorer than the general Australian population, especially in indigenous inmates. An unpublished study by Bowers in 1986 showed that, in the adult prison population in New Zealand, 69% had some form of hearing loss, with rates as high as 83% in the indigenous Māori inmates (Bowers, 1986), who currently comprise 51-58% of New Zealand’s prison population (Department of Corrections, 2013).

The high rates of hearing impairment in the Māori inmates are consistent with Māori having greater unmet healthcare needs and higher rates of all health risks than other ethnic groups in New Zealand (Ministry of Health, 2013). Young Māori have also been found to have more hearing loss than their New Zealand European peers (Digby, et al., 2014), and recent studies showed high rates of otitis media and associated complications in New Zealand children, especially those from deprived areas (Greville, 2001b; Milne & Vander Hoorn, 2010). Earlier studies by Giles and colleagues (Giles & Asher, 1991; Giles & O’Brien, 1989, 1991) found that rural Māori children had some of the highest rates of otitis media in the world.
Links between auditory deprivation, whether from chronic otitis media with effusion or other hearing problems, and the subsequent development of auditory processing difficulties have been established in children and in animal models (Buran et al., 2014; Mowery et al., 2014; Polley et al., 2013; Schilder et al., 1994). Extended periods of hearing impairment associated with middle ear disease have been implicated in the development of problems with both auditory processing (Gravel et al., 2006; Moore et al., 2003; Tomlin & Rance, 2014) and language outcomes in some individuals (Roberts et al., 2004). Bennett, Haggard, Silva, and Stewart (2001) also found a connection between recurrent episodes of childhood otitis media with effusion and the development of hyperactive and inattentive behavioural problems at 15 years of age, lower IQ at 13 years, and poorer reading abilities between 11-18 years using data from a longitudinal study. The children in this study who had bilateral otitis media with effusion at age five went on to have significantly lower average scores for verbal comprehension and expression, reading and speech articulation, as well as being rated by their teachers as having significantly more behavioural problems than their peers (Silva et al., 1986). Although there is debate about the presence and nature of auditory processing difficulties in individuals with learning and language impairments, studies show there is often an overlap between these disorders (Čeponienė et al., 2009; Miller & Wagstaff, 2011; Sharma et al., 2009). Hence, co-morbidity of these conditions is well documented even though causal links have not been established.

These studies did not specifically address youth in the justice system. However, one US-based study examined one aspect of auditory processing, binaural integration, in male and female youth offenders. Moncrieff and her colleagues (2014) screened 399 adjudicated adolescents using the randomised Dichotic Digits Test. Seventy-two percent of the young people had abnormally low scores (i.e. under the 95th percentile of the population norm), with 17% showing signs of difficulties in both ears, and 25% with difficulties in one ear. Overall, less than 25-35% of the participants had scores within the typical range.
3.1.3 Youth justice in New Zealand

In 1989, the youth justice system in New Zealand underwent reform that shifted focus toward emphasizing diversion, community-based sanctions, family decision-making, and flexibility (Lynch, 2016). One of the main restorative processes used in this system is family-group conferences (FGCs), where the young person, their family, youth justice professionals, and sometimes the victim, meet to make a plan to deal with the young person who committed the offence. The aim is to help the young person to take responsibility for their offending, find practical ways to make amends, address why they offended and find ways to prevent recidivism (Cleland & Quince, 2014). FGCs underpin the youth justice system, but rely heavily on oral language and effective communication skills under challenging and stressful conditions. A young person responding in monosyllables and failing to display expected nonverbal behaviours or read the appropriate social cues may “create an impression of shallowness, low credibility, and/or low empathy for the victim” (Snow & Sanger, 2011, p. 330).

Verbal communication is the primary interface with the justice system in almost every jurisdiction, from the moments leading up to and following apprehension and questioning by police, to discussions with lawyers, court hearings, and throughout any restorative justice and/or rehabilitation processes. Therefore, any barriers to being able to participate fully – be it through impaired cognitive abilities, language or cultural barriers and/or difficulties with hearing, auditory processing, or language skills – have implications for the offender’s basic rights and access to justice (Hughes et al., 2012).

Studying the hearing, auditory processing and language skills of young people in the youth justice system is important for several reasons: for determining the need for early identification of at-risk young people presenting with comorbid hearing, learning or language needs who could be targeted for intervention before developing problem behaviours; to establish an evidence base for hearing and speech-language therapy services for youth offenders; and, to provide information about the communication needs of youth offenders for professionals working with them in highly verbally-mediated contexts. This study asked the following research questions: 1) Do measures of hearing, auditory processing, and receptive and/or expressive language differ between New Zealand-based male
youth offenders and remandees in two youth justice residences, compared with New Zealand High School students (aged 14-17 years)?, and 2) Do the nature and/or pattern of difficulties found on these measures differ between the two groups, independently of nonverbal intelligence?

3.2. Method

3.2.1 Ethics approval

Ethics approval for this study was obtained from the University of Auckland Human Participants Ethics Committee (reference number 7831) and the Research Access Committee of the Ministry of Social Development (now Oranga Tamariki - Ministry for Children), which oversees the youth justice residences.

3.2.2 Participants

Participant selection criteria included: males aged 14 years 0 months to 17 years 11 months; English as a first or equal language; no history of major psychiatric illness; no known peripheral hearing impairment (for the youth offender group, this meant passing the residences’ basic 4-frequency hearing screening test [Bay Audiology Screener; http://www.bayaudiology.co.nz/]); no traumatic brain injury; and a nonverbal IQ score of 75 or greater on the Test of Nonverbal Intelligence (TONI-3; Brown, Sherbenou, & Johnsen, 1997).

Young people in the youth offender and remandee (YOR) group were recruited from two of the four youth justice residences in New Zealand (see supplemental material 1 [Appendix 15] for a description); 23 (70%) from one and 10 (30%) from another. Potential participants were identified by a member of staff at each facility, and the parents or guardians of the young people were contacted. If signed consent forms were returned, the young person was asked whether they would like to participate. After consistently failing to receive signed consent forms from guardians, the approach was changed so only young people older than 16 years, who were legally able to give consent on their own behalf, were included. This approach was used for the last five (15%) YOR participants. No data for previous
audiological or speech-language therapy, or the socio-economic status (SES) of the YOR group were available.

The control group was recruited from five secondary schools in the lower North Island region. Three of these schools (contributing 25 [64%] control participants) were in areas designated as low SES by the Ministry of Education (MoE) in New Zealand (decile 2-5), and two (14 [36%] control participants) were from higher SES areas (decile 8). SES decile designation is used by New Zealand’s MoE to allocate school funding, where decile 1 schools have the highest proportion of students from low SES backgrounds, and schools in decile 10 have the lowest proportion (Ministry of Education, n.d.). Participants were identified by a member of staff at each school, who randomly selected them from the school’s student list and determined which young people fitted the criteria.

In total, 112 young people were contacted about participating in the study, including 72 youth offenders and 40 controls. Thirty-nine eligible youth offenders did not participate for reasons including: consent not being returned by guardians ($n = 21$); being discharged before consent was obtained from guardians ($n = 7$); young person declining to participate ($n = 4$); guardians not giving consent ($n = 3$); and, incorrect or no contact details for guardians ($n = 4$). One eligible control participant was not included due to being unwell at the time of testing.

Overall, the study included 72 males, 33 in the YOR group and 39 in the control group. The average ages of the YOR and control groups were 16.04 years ($SD = 0.79$; range = 14.58 to 17.33 years) and 15.61 ($SD = 1.12$; range = 14.08 to 17.91 years), respectively; the difference approached significance ($t_{(68)} = 1.88$, $p = .065$, $d = .44$).

The self-identified ethnicity of each group can be seen in Table 1. There were no significant differences between the two groups; although, the Fisher’s exact test approached significance, yielding a 2-tailed $p$-value of .058, with a moderate effect size of $V = .31$. As seen in Table 1, the control group had more New Zealand European, but fewer Pacific Island participants. Self-identified ethnicity was level-1, priority coded according to the Ethnicity Data Protocols for the Health and Disability Sector recommended by New Zealand’s Ministry of Health (Ministry of Health, 2004). Relationships between
ethnicity and test results were examined according to this coding, but also according to the presence versus absence of Pacific Island and/or Māori ethnicity.

Table 1. Self-identified ethnicity of the controls and youth offender and remandees (YORs).

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Controls (n=39)</th>
<th>YORs (n=33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ Māori</td>
<td>16 41%</td>
<td>17 52%</td>
</tr>
<tr>
<td>NZE</td>
<td>20 51%</td>
<td>9 27%</td>
</tr>
<tr>
<td>PI</td>
<td>2 5%</td>
<td>7 21%</td>
</tr>
<tr>
<td>Asian</td>
<td>1 3%</td>
<td>0 0%</td>
</tr>
</tbody>
</table>

Note: NZE = New Zealand European; PI = Pacific Island.

3.2.3 Procedure

Verbal and written assent or consent (if over 16 years) was obtained from each young person prior to the first session, which occurred in quiet locations at the youth justice residences or schools. Testing was undertaken over two sessions, each around 45 minutes in duration.

The first session included an otoscopic ear examination, immittance audiometry, followed by a pure-tone audiometry test and a battery of four auditory processing tests. The second session included two language assessments and a nonverbal IQ test. Test order was not randomised after discussions with a Youth Justice Residence Clinical Team Leader, who, along with the researcher, identified the order most likely to keep the young people engaged and not overloaded with a series of multiple intensive assessments. At the start of the first session, each participant rated their everyday hearing according to a smiley-face pictorial scale. They were asked: ‘What is your hearing like for you?’, is it ‘always difficult’, ‘sometimes difficult’ or ‘always easy’? After recording this, an otoscopic examination of the outer ear canal and eardrum was performed using a basic illuminated otoscope (Parker Otoscope; GIMA SpA).

No young people in this study had ear canals completely occluded by wax; however, two (6%) of the YOR group and 12 (31%) of the control subjects had substantial wax build-up. In contrast, five (15%) YOR subjects and only one control (3%) had slightly inflamed red ear canals. One (3%) YOR subject reported recent use of antibiotics for an otitis externa infection.
Peripheral hearing was assessed using pure tone audiometry and immittance audiometry. Immittance audiometry was conducted using the Titan IMP440 Tympanometer (Interacoustics), and included tympanometry and ipsilateral acoustic reflex thresholds (at 500, 1000, 2000 and 4000 Hz; tested using a 226 Hz probe tone). Tympanogram results were classified according to Jerger’s system (Jerger, 1970). Pure-tone thresholds were tested using the Hughson-Westlake “down 10-up 5” technique (Carhart & Jerger, 1959) in both ears (at octave frequencies 250, 500, 1000, 2000, 4000, and 8000 Hz) using the two-channel, air-bone-speech audiometer, AVANT A2D audiometer (MedRx Inc.) on a calibrated Dell laptop, with Telephonics TDH-39 earphones mounted in noise-excluding Amplivox Audiocups. The start ear was randomised for each participant. Hearing sensitivity was considered to be within normal limits if the average of the 500, 1000, 2000, and 4000 Hz thresholds was 15 dB HL or better and, middle-ear status was considered normal if bilateral Type A tympanograms (American Speech-Language-Hearing Association, 1997) and a 1 kHz ipsilateral acoustic reflex threshold were obtained at or below 100 dB (Silman & Gelfand, 1981).

3.2.4 Auditory Processing Test Battery

The auditory processing tests were selected based on their minimal linguistic loading and documented high efficiency and sensitivity (Moore et al., 2010; Musiek et al., 2011) and followed the minimal test battery approach of Jerger and Musiek (2000). The tasks were designed to test a range of auditory processes recommended by the American Speech-language-Hearing Association (ASHA) Task Force on Central Auditory Processing Consensus Development (1996): (a) Dichotic Digits Test Version 2 (Musiek, 1983), (b) Frequency Pattern Test (Musiek, 1994; Noffsinger et al., 1994), (c) Frequency Discrimination (Chilekwa et al., 2009), and (d) Backward Masking with a 0-millisecond gap (Chilekwa et al., 2009). The DDT and FPT were administered after pure tone audiometry testing at 60 dB HL through the laptop using the audiometry equipment used for the peripheral hearing test. Following this, the FD and BM-0ms tests were administered using IHR Multi-centre study of Auditory Processing System for Testing Auditory Responses-2 (Chilekwa et al., 2009) software run on a calibrated Dell laptop with Sennheiser HD 25-1 II headphones. A total of 20 trials of DDT (two pairs
per trial) were used and there were 14 FPT stimuli per ear; the start ear for the FPT was randomised for each participant. Each of these tasks included training components: five presentations for the DDT and two for FPT. Task performance was expressed as percentage correct. Following this, the FD and BM-0ms tests were administered using IHR Multi-centre study of Auditory Processing System for Testing Auditory Responses-2 (IMAP-STAR2; (Chilekwa et al., 2009) software run on a calibrated Dell laptop with Sennheiser HD 25-1 II headphones (see [Appendix 15] supplemental material 2 for details of these tests). The order of presentation of the last two tests was randomized by the computer software.

Individual test scores were considered to be a “pass” if they fell within two standard deviations of the mean for normative samples (Moore et al., 2010; Musiek, 1983, 1994).

A diagnosis of APD was made using the American Academy of Audiology (AAA) Clinical Practice Guidelines (2010) criterion: a score two standard deviations or more below the mean for at least one ear on at least two different behavioural central auditory tests (American Academy of Audiology, 2010).

3.2.5 Language and Cognitive Assessments

Assessments for the second testing session consisted of the Clinical Evaluation of Language Fundamentals (Fourth Edition) Australian version (CELF-4; Semel, Wiig, & Secord, 2006), the nonverbal IQ test, TONI-3, followed by the Test of Narrative Language (Gillam & Pearson, 2004). Digital voice recordings were made of the CELF-4 and TNL.

The CELF-4 assessed the participants’ expressive and receptive language skills and provided a Core Language Score derived from four subtests: Recalling Sentences, Formulated Sentences, Word Classes (Receptive and Expressive), and Word Definitions. It also provided an Expressive Language Score, derived from the Recalling Sentences, Formulated Sentences, and the expressive component of the Word Classes subtests.

The TNL was used to collect a range of narrative samples for a separate sub-study.
The *TONI*-3 is a norm-referenced measure of intelligence, abstract reasoning and problem solving that is free of the use of language. The cut-off of 75 used in the present study served to rule out intellectual impairment, whilst incorporating the standard error of measurement of the *TONI*-3, as recommended by the American Psychiatric Association (2013).

Language impairment was diagnosed according to one or more of the following criteria:

(a) *CELF*-4 scores (receptive and/or expressive) below the 10th percentile (Bishop et al., 1999; Catts et al., 2002), and/or

(b) *CELF*-4 scores within expected range for typically-developing adolescents (≥80), but receptive and/or expressive scores ≥1 SD below *TONI*-3 scores (Catts et al., 2002), and/or

(c) *CELF*-4 scores within expected range but receptive language scores ≥1.30 SDs (20 points) below expressive language scores (Fey, 1986; Kamhi, 1998).

Data were inspected for normality using Shapiro-Wilk tests, and were analysed using nonparametric statistics where normality could not be established. Significance levels were set at $\alpha = 0.05$. Data were analysed using SPSS version 21.0.

### 3.3. Results

All participants in both groups completed all of the tasks. Two (6%) young people in the YOR group had to complete both testing sessions in one day, but each session was separated by at least an hour, due to early discharge from the residence. Most of the young people in both groups commented that they enjoyed the sessions and wanted to contribute to the research. A few of the young people in the YOR group showed mild agitation and frustration when they found the tasks difficult, but all continued after general encouragement.

There was no increasing or decreasing trend in the proportion of young people failing the various subtests across either session, suggesting a lack of test order or practice effects.
3.3.1 Self-reported Hearing Loss

Self-reported hearing difficulty ratings were similar between the two groups. Sixty-one percent \((n = 20)\) of youth offenders and 56% (22) of the control group reported that hearing was ‘always easy’, and 36% (12) and 44% (17) of participants in the respective groups said hearing was ‘sometimes difficult’. Only one study participant (3%), a youth offender, reported that they found hearing ‘always difficult’. In the control group, results did not differ according to school SES decile ranking (Fisher’s exact test, \(p > .05\)), and in both groups, Fisher’s Exact tests indicated no difference in the hearing question results according to ethnicity (all \(p > .05\)).

3.3.2 Impittance and Pure Tone Audiometry

As seen in Table 2, the majority of both groups had Type A, normal tympanograms in at least one ear; however, fewer youth offenders (16 [48%]) than controls (24 [62%]) had this type of tympanogram bilaterally. The majority of the participants with bilaterally-normal tympanograms also had normal hearing thresholds in both ears (14 [88%] vs 23 [96%] in the YOR and control groups) and acoustic reflex thresholds (ARTs) of \(\leq 100\ \text{dB} \) at 1 kHz in both ears (14 [88%] vs 22 [92%], respectively). Almost a third of participants in both groups had at least one ear yielding an abnormal tympanogram (any result other than Type A). The type of tympanogram did not differ according to ethnicity or self-reported hearing difficulty in either group (Fisher’s Exact Tests; all \(p > .05\)).
Table 2. Results for tympanometry, four-frequency average (500, 1000, 2000, and 4000 Hz) hearing threshold, auditory processing, language and nonverbal intelligence tests.

<table>
<thead>
<tr>
<th>Tympanogram Type</th>
<th>Controls (n = 39)</th>
<th>YORs (n = 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>left ear</td>
<td>right ear</td>
</tr>
<tr>
<td>A</td>
<td>26 (67%)</td>
<td>28 (72%)</td>
</tr>
<tr>
<td>A&lt;sub&gt;s&lt;/sub&gt;</td>
<td>4 (10%)</td>
<td>5 (13%)</td>
</tr>
<tr>
<td>A&lt;sub&gt;d&lt;/sub&gt;</td>
<td>2 (5%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>C&lt;sub&gt;1&lt;/sub&gt;</td>
<td>3 (8%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>C&lt;sub&gt;2&lt;/sub&gt;</td>
<td>1 (3%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>B</td>
<td>1 (3%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>any abnormality†</td>
<td>11 (28%)</td>
<td>10 (26%)</td>
</tr>
<tr>
<td>equipment failure</td>
<td>2 (5%)</td>
<td>1 (3%)</td>
</tr>
</tbody>
</table>

**Note.** Type A<sub>s</sub> = A shallow (peak admittance <0.3mL); type A<sub>d</sub> = A deep (peak admittance >1.5mL); type C<sub>1</sub> = peak pressure of -101 to -200daPa; type C<sub>2</sub> = peak pressure less than -200daPa (Jerger, 1970); † any result other than Type A tympanogram.
<table>
<thead>
<tr>
<th></th>
<th>Controls (n = 39)</th>
<th>YORs (n = 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean (SD)</td>
<td>median (IQR)</td>
</tr>
<tr>
<td><strong>PTA (dB HL):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>left</td>
<td>6.77 (3.3)</td>
<td>8 (5.0)</td>
</tr>
<tr>
<td>right</td>
<td>6.87 (4.5)</td>
<td>6 (5.0)</td>
</tr>
<tr>
<td><strong>DDT (% correct):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>left</td>
<td>95.2 (5.0)</td>
<td>97.4 (7.7)</td>
</tr>
<tr>
<td>right</td>
<td>97.1 (3.4)</td>
<td>97.4 (5.1)</td>
</tr>
<tr>
<td><strong>FPT (% correct):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>left</td>
<td>85.2 (15.9)</td>
<td>92.3 (28.6)</td>
</tr>
<tr>
<td>right</td>
<td>83.3 (21.1)</td>
<td>92.3 (28.6)</td>
</tr>
<tr>
<td><strong>FD (Hz)</strong></td>
<td>6.2 (11.9)</td>
<td>2.0 (4.4)</td>
</tr>
<tr>
<td><strong>BM-0ms (dB)</strong></td>
<td>60.1 (14.5)</td>
<td>64.0 (19.5)</td>
</tr>
<tr>
<td><strong>CELF-4:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Score</td>
<td>104.2 (13.2)</td>
<td>104 (21)</td>
</tr>
<tr>
<td>Exp Score</td>
<td>102.2 (12.8)</td>
<td>104 (17)</td>
</tr>
<tr>
<td>Rec Score</td>
<td>9.9 (2.5)</td>
<td>9 (4)</td>
</tr>
<tr>
<td><strong>TONI-3</strong></td>
<td>104.4 (14.0)</td>
<td>102 (25)</td>
</tr>
</tbody>
</table>

*Note.* PTA = pure-tone audiometry; DDT = dichotic digits test; FPT = frequency pattern test; FD = frequency discrimination; BM-0ms = backward masking with zero millisecond gap; IQR = interquartile range. For FD and BM-0ms tests, high score indicates poorer performance; CELF = Clinical Evaluation of Language Fundamentals; Core = CELF core language standardised score; Exp = expressive standardised score; Rec = receptive score word classes subtest; TONI = Test of Nonverbal Intelligence; †† scaled score (mean 10, SD = 3); * denotes significance vs controls at the p < .05 level.
The majority of both the YOR and control groups had bilaterally-present ipsilateral acoustic reflex thresholds (20 [61%] and 30 [77%], respectively), with only 3 (9%) YORs and 4 (10%) controls with bilaterally-absent thresholds. Additional ART data can be seen in supplemental material 3 (Figure 1).

![Supplemental Material 3](image)

**Figure 1.** Inserted supplemental material 3: Number of participants with present or absent acoustic reflex thresholds (1 kHz) occurring at \( \leq 100 \) dB HL.

Pure tone audiometry (PTA) audiometry results are presented in Table 2. The average four-frequency PTA average thresholds were significantly higher (i.e. poorer hearing) in the YOR group than the controls for the left (\( Mdn \) 12 vs 7 Hz; \( U = 239.0, p < .001, r = -.542 \)) and right ears (10 vs 7; \( U = 273.5, p < .001, r = -.498 \)), and both ears combined (11 vs 7 Hz; \( U = 229.0, p < .001, r = -.553 \)). Notably, all 23 (100%) of the youth offenders who passed the four-frequency threshold average exhibited hearing loss (>15 dB HL) at one or more of the frequencies, compared with 7 (19%) of the 37 controls who passed. This loss was mainly restricted to low frequencies (250 and 500 Hz) in both groups (13 [56%] vs 7 [100%], respectively). Audiograms for participants with hearing loss are shown in supplemental material 4 (Appendix 16).
Overall, more YORs had some degree of hearing loss in one or both of their ears based on their four-frequency PTA thresholds (Clarke, 1981). Eight (24%) youth offenders, compared with 2 (5%) of the control group, had slight hearing loss, whereas 2 (6%) of the YOR group but no (0%) controls had mild hearing loss. More YORs with slight or mild hearing loss had abnormal tympanograms, compared with those with normal hearing thresholds (19 [58%] vs 6 [19%], respectively).

No PTA ear advantage was seen in the YOR group ($Z = -.91, p = .362, r = -.16$) or the control group ($Z = .04, p = .966, r = .01$) using Wilcoxon Signed Rank tests, and hearing thresholds did not differ according to self-reported difficulty in either group (Kruskal-Wallis tests; all $p > .05$). Additionally, there were no differences between the groups in median hearing thresholds according to tympanogram type or ethnicity (Kruskal-Wallis tests; all $p > .05$), or within the control group according to decile ranking in either the left ($X^2_{(2, N=39)} = 1.532, p = .469, r = .245$) or right ear ($X^2_{(2, N=39)} = 0.310, p = .856, r = .049$).

### 3.3.3 Auditory Processing

The results for the four auditory processing tests are shown in Table 2. Scores for the DDT and the BM-0ms tests did not differ significantly between the two groups; however, the FPT and FD test scores were significantly worse for the YOR group. It is also worth noting that the YOR group mean for the FPT was more than two $SD$s (score of 75% correct) below the mean.
Difficulty with an auditory processing test was established using the cut-off point of two SDs or more below the normative mean for either ear on the DDT (score of 90% correct) and FPT (score of 75% correct), or two SDs above the mean for the FD (26.3 Hz) and BM-0ms (78.6 dB) tests. Overall, more youth offenders’ individual ear test scores fell two SDs or more outside the mean (n = 55 [83%] vs 39 [50%] for the YORs and controls). Supplemental material 5 (Figure 2) shows the number of participants in each group that met these criteria for each auditory processing test.

Overall, nine (27%) youth offenders and seven (18%) controls fulfilled the AAA (2010) criterion for the diagnosis of APD (see Figure 3). Of these participants, three (30%) youth offenders had slight hearing loss (16.0-17.5 dB HL), while the remaining participants had normal hearing thresholds. All seven control subjects with APD (100%) failed the FPT bilaterally, compared with three of the youth offenders (33%); in contrast, more youth offenders than controls with APD failed the DDT bilaterally (n = 4 [44%] vs 2 [22%]).

In both groups, auditory processing test results did not vary significantly according to PTA hearing thresholds (Spearman’s correlations), or the presence of hearing impairment (normal versus
slight or mild loss) using Mann-Whitney U tests (all \( p > .05 \)). There were also no significant differences in nonverbal IQ scores in participants identified with APD versus no APD (\( U = 137.5, p = .238, r = .21 \) for the YOR group, and \( U = 120.0, p = .435, r = .13 \) for the controls). However, when examining APD results for each group according to ethnicity using Mann-Whitney U tests; participants in the YOR group self-reported as Pacific Island and/or Māori ethnicity performed significantly more poorly than non-Pacific Island and/or Māori on the FD (\( Mdn = 12.6 \) vs \( 1.9 \); \( U = 35.0, p = .003, r = -.51 \)) and BM-0ms tasks (\( Mdn = 69.7 \) vs \( 54.2 \); \( U = 48.0, p = .015, r = -.42 \)). No such effect was seen in the control group. No significant differences were found when examining auditory processing test results according to SES decile ranking in the control group (Independent-Samples Kruskal-Wallis tests, all \( p > .05 \)).

3.3.4 Language and Nonverbal Intelligence Tests

All of the language scores of the YOR group were significantly lower than those of the controls. These results, including the nonverbal intelligence (TONI-3) scores, are presented in Table 2. It can be seen that the group mean and median scores for the CELF-4 Core and Expressive scores fall below 1SD from the normalised mean of 100 in the YOR group, whereas these scores were just above the normalised mean for the controls.

Notably, only 13% of the three CELF-4 scores for were better than the normalised mean for the YOR group, compared with 67% for the controls. Of the 87% of YOR scores below the normative mean, 22% were up to one standard deviation (SD) below, 39% were one-two SDs below, and 25% were two-three SDs below the mean. For the control group, the proportions were 29%, 7%, and 0%, respectively.

Overall, 21 (64%) youth offenders and 4 (10%) controls fulfilled one or more of the criteria for identifying language impairment (see Figure 1). In the YOR group, 12 (36%) young people fulfilled criterion (a) (i.e. CELF-4 scores below the tenth percentile [standard score of 80]), only one (3%) young person fulfilled criterion (b) (i.e. CELF-4 scores within expected range for typically-developing adolescents [≥80], but receptive and/or expressive scores ≥1 SD below TONI-3 scores), and eight (24%) fulfilled both of these criteria. In the control group, three (8%) participants fulfilled criterion (a) and
one (3%) fulfilled (b), respectively. No participants in either group met criterion (c) (i.e. CELF-4 scores within expected range but receptive language scores ≥1.30 SDs [20 points] below expressive language scores).

Language impairment status did not vary significantly according to ethnicity in the YOR group using Fisher’s Exact Test ($p = .110$). Because of the small number of controls fulfilling the criteria for language impairment ($n = 4$ [10%]), this statistical test was not performed for the controls (one identified as New Zealand Māori and three as New Zealand European). However, significant differences were found in the YOR group, but not the controls, when examining individual language assessment subtest scores according to the presence versus absence of Māori and/or Pacific Island ethnicity. Young people of Māori or Pacific Island ethnicity ($n = 24$ [73%]) exhibited significantly lower mean values for the CELF-4 Core Language Score [$M = 84.93$ (18.8) vs 102.6 (16.2); $t(31) = -3.69, p = .001, d = -1.32$], CELF-4 Expressive Language Score [$M = 84.14$ (18.1) vs 99.5 (16.8); $t(31) = -2.98, p = .006, d = -1.07$], and Word Classes-2 Receptive Scaled Score [$M = 7.0$ (2.6) vs 9.87 (3.2); $t(31) = -2.46, p = .019, d = -0.89$], but not TONI-3 scores ($Md = 91.0$ vs 100.0; $U = 70.0, p = .131, r = -0.27$).

No significant differences were found when examining CELF-4 and TONI-3 scores according to SES decile ranking in the control group (Independent-Samples Kruskal-Wallis tests, all $p > .05$).

It is noteworthy that TONI-3 scores were also significantly lower in the YOR than control groups overall ($Md = 89$ vs 102; $U = 1032.0, p < .001, r = 0.52$), and there were significant correlations in the YOR group between TONI-3 scores and those for the CELF-4 Core [$r_s(31) = .36, p = .04$] and Expressive [$r_s(31) = .39, p = .02$] tests. However, these associations were not present among those identified as having language impairment, in either group ($r_s(19) = -.001, p = .99$ and $r_s(19) = .058, p = .80$, respectively). It is also worth considering that although significantly lower than those of the controls, the mean and median nonverbal IQ scores for the YOR group were within the limits of what is considered typical (score of 85-115): only eight (87%) youth offenders scored below 85, and two (6%) scored below 80; no controls had TONI-3 scores under 85. All participants had TONI-3 scores above the inclusion criterion of 75.
**TONI-3** scores did not differ significantly between participants with versus without combined APD and LI in the YOR group (\(U = 64.0, p = .14, r = -.26\)) or the control group (\(U = 49.0, p = .49, r = 0.12\)). Nor did they differ according to ethnicity in either group (\(H = 2.370, p = .31, r = .41\) and \(H = 2.647, p = .45, r = .42\), respectively)

### 3.3.5 Overlap of Auditory Processing and Language Disorders

A greater percentage of youth offenders displayed a combination of language and auditory processing difficulties, compared with the controls (8 [24%] vs 2 [5%], respectively). Figure 3 shows a Venn diagram of the overlap of APD and LI.

**Figure 3.** Number of participants in each group with LI, APD or both.

Interestingly, a comparison of language scores between participants with and without APD showed that in the control group, but not youth offender group, mean *CELF-4* Core scores were
significantly lower in participants with APD \([M = 94.0 \ (SD = 14.8) \ vs \ 106.1 \ (12.2), \ t_{(37)} = -2.16; \ p = .038, \ r = .33]\). Control participants with APD also had lower CELF-4 Expressive \([92.2 \ (14.0) \ vs \ 104.0 \ (11.9), \ t_{(37)} = -2.18; \ p = .036, \ r = .34]\) and Word Classes Receptive \([7.3 \ (2.5) \ vs \ 10.4 \ (2.1), \ t_{(37)} = -3.05; \ p = .004, \ r = .45]\) subtest scores. Control-group scores for the remaining language tests were comparable between those with versus without APD.

### 3.4. Discussion

This study found significant differences in the hearing, auditory processing and language skills between young males at youth justice residences and a group of similarly-aged male students attending local high schools in New Zealand. These differences were not explained by differences in nonverbal IQ.

#### 3.4.1 Hearing and auditory processing

The YOR group were over seven times more likely than the controls to have some form of hearing loss in one or both ears. Nearly five times more youth offenders than controls with normal average hearing thresholds exhibited hearing loss at one or more of the tested frequencies. This higher rate of hearing impairment is consistent with the findings of the US-based study of youth offenders (Holmes et al., 1996), and the high rates of hearing loss found in studies of adult inmates (Bowers, 1986; C. A. Jacobson et al., 1989; McRandle & Goldstein, 1986). Interestingly, a numerically greater proportion of youth offenders than controls self-reported that they found hearing ‘always easy’ (61% vs 56%), despite the fact that their hearing thresholds indicated greater impairment, and just under half (44%) of the control group found hearing ‘sometimes difficult’. It may be that the YOR group felt more confident about their hearing abilities (or wanted to appear so) than did the control group, or it could be that because the control participants attend school regularly, they would be more accustomed to self-evaluation and addressing areas of perceived difficulty. It is also possible that the school environment is often sufficiently noisy that the control group sometimes find it difficult to hear the teacher or other students. It is well documented that high noise levels in classrooms are a significant problem (ASHA,
One New Zealand-based study found that around 75% of children were exposed to dangerously-high classroom noise levels, with peak noise exceeding 140 dB (McLaren & Dickinson, 2009), while another found that 71% of teachers reported that internal classroom noise was a significant problem (Oticon Foundation of New Zealand, 2002).

Another finding of interest is that around 9% of youth offenders and remandees displayed significant middle-ear pathology (Type B tympanograms). This rate was more than twice that of the controls at 4%, and three-to-four times that found in 11-year-olds in the New Zealand-based Dunedin Longitudinal Study (Chalmers, Stewart, Silva, & Mulvena, 1989). It is also slightly higher than the rate of 7.5% of youth offenders who failed their tympanometry screening (Type B or C tympanogram) in the US-based study by Holmes and colleagues (1996), but similar to the 8-9% found in the Pacific Islands Families Study (Purdy et al., 2012). Type B tympanograms are often associated with low-frequency hearing loss (J. W. Hall & Schwanepoel, 2010), and in this study, nine of the twelve YORs with hearing loss had hearing loss in the lower frequencies, and seven of these had an abnormal tympanogram result.

Without access to their medical histories, it is only possible to speculate on the causes of the documented hearing loss and poor ear health status. Many of the young people in the YOR group are likely to come from lower-income backgrounds known to be at higher risk of middle-ear problems and poorer ear health that can result in subsequent hearing loss (Milne & Vander Hoorn, 2010). Higher rates of middle-ear infections have been documented in individuals from Māori and Pacific Island cultures, which are over-represented in both groups in this study compared with the general population in New Zealand (Digby et al., 2014; Paterson et al., 2006; Purdy et al., 2012). Regardless of possible causes, the high rates of abnormal tympanograms show that the YOR group’s ear-health status is poorer than that of their non-offending peers and suggests more frequent and comprehensive ear-health checks would benefit young people in youth justice facilities.

The percentage of the YOR group identified with auditory processing disorder (APD) was non-significantly higher than that seen in the control group (9 [27%] vs 7 [18%]). The figure for the controls
(18%) is higher than might be expected in the general population; current estimates (not based on New Zealand data) are that around 2-3% of children have APD (Chermak & Musiek, 1997). However, the control group had a higher proportion of Māori and Pacific Islanders (46%) than the general New Zealand population (22%; Statistics New Zealand, 2013), and these groups have more risk factors (e.g., middle ear disease) for developing auditory processing difficulties. Unfortunately studies investigating auditory processing skills in New Zealand have generally lacked ethnicity data (Kelly, 2007; Sharma et al., 2009). It is also worth noting that the YOR group had particular difficulty with two of the four auditory processing tasks (FD and FPT). Difficulties with temporal processing tasks, such as the FPT, have been found after periods of auditory deprivation, as happens with otitis media infections (Buran et al., 2014; Mowery et al., 2014; Polley et al., 2013), and difficulties with FD tasks have been found in individuals with specific language impairment (McArthur & Bishop, 2004). This finding is supported by the higher proportion of youth offenders than controls having Type B tympanograms suggestive of middle-ear problems, and more difficulties with the language tasks.

3.4.2 Language Outcomes

Overall, the CELF-4 scores showed that language was an area of significant difficulty for the YOR group, especially those of Māori or Pacific Island ethnicity. Sixty-four percent of the YOR group, and only 10% of the controls fulfilled this study’s criteria for LI. On average, the YOR group’s CELF-4 Core Language and Expressive Language Scores were significantly worse than the controls, being around 1.5 SDs below the normative mean of 100 – a level often described as the lower boundary of typical development. Using the CELF-4 language disorder classification, the 58% of the YOR group with scores below -1.5 SD could be described as having a moderate to severe language disorder, compared with only 8% of the controls (Semel et al., 2006). Indeed, 87% of the YOR group had scores below 100, indicating the normal curve of this group is shifted significantly downward compared to their peers.

These results are similar to those found by Bryan, Freer and Furlong (2007) in their UK-based study of 58 incarcerated young male offenders. They described 66% of their group as having scores
“below average” on at least one of the subtests of the Test of Adolescent and Adult Language, 3rd edition (Hammill et al., 1994), and 46-67% of participants as having language scores in the “poor to very poor categories” (i.e., equivalent to the bottom 9% of the overall population for this age group). Using the cut-off of \(-1.5SD\), which is similar to the “poor to very poor” category used in the TOAL, the current study yielded a figure of 58%, i.e. in the same range. In their Australian study of 100 incarcerated male young offenders, Snow and Powell (2011b) used a more rigorous criterion of \(-2.0 SDs\) below the mean for the CELF-4 Core Language Score and subtests of the Test of Language Competence-Expanded (Wiig & Secord, 1989), and found that 46% fell below this figure. These results are remarkably consistent across three very different jurisdictions. The consistency of language difficulties in young people in the justice system across a number of English-speaking countries indicates that language assessments should be routinely carried out when they encounter the legal system. In common with other studies (Gregory & Bryan, 2011), the participants in the current study had almost never been suspected of oral language difficulty or been referred for assessment.

Hughes and colleagues’ (2012) report for the UK Children’s Commissioner highlights the lack of ‘connection’ between difficulties such as communication difficulties and young people getting into trouble, and the impact on their ability to benefit from interventions designed to prevent them re-offending once they are there. Encouragingly, programmes delivering speech and language intervention to youth offenders in the UK have shown promising results. For example, Gregory and Bryan (2011) found that 88% of participating youth offenders identified as having expressive language difficulties made significant gains in standardised language assessment scores – equating to an average gain of two standard deviations - after completing an intensive supervision and surveillance program. Moreover, on an individual basis, these improvements were accompanied by gains in the young people’s engagement with education and training programmes. Burrows, Yiga and Heneker (2012) showed that youth offenders with moderate communication difficulties benefited significantly from six sessions of therapy, with progress reported in almost all of the language skills tested. Benefits were less profound in those
with more severe needs, however, suggesting a need for assessment, and individualised, more intensive therapy in these young people.

3.4.3 Overlap between LI and APD

An interesting finding in this study was that the overlap of LI and APD appear to differ between the two groups (Figure 3). Language difficulties dominated the YOR group and the overlap with APD is greater than that of the control group. There were nine youth offenders and remandees with APD, but only one with APD alone; the other eight had both APD and LI. In contrast, of the seven controls with APD, only two had both APD and LI. The smaller overlap in the control group of the current study may be a result of their receiving regular schooling and possibly having a more language-rich, and learning-supportive home environment. It is also worth noting that the control participants with APD still had significantly lower CELF-4 Core Language, Expressive and Word Classes Receptive scores than those without APD. The fact that this same pattern of difficulties is present in the two groups seems to support the idea that protective factors may be at play in the control group that have helped ameliorate their language difficulties, something that has not happened for the youth offenders and remandees.

Overlaps between language and auditory processing deficits have been found in other studies. Sharma and colleagues (2006) used electrophysiological and behavioural tasks to assess the auditory processing and language abilities of children with reading disorders. They found that almost half of their sample had overlaps in all three areas, but overlaps were most likely between APD and LI or APD and reading problems. Other studies also found that individuals with specific language impairment (SLI) have difficulty with certain auditory processing tasks, especially frequency discrimination (McArthur & Bishop, 2004; Wright et al., 1997).

The apparent difference in the overlap in the present study and those mentioned above highlights the difficulty of teasing out the influence of language and auditory processing difficulties. APD is recognized as being heterogeneous in nature, and its diagnosis is a source of ongoing controversy (Moore, 2015). It has been suggested that, because of the overlap between attention, language, learning and auditory processing difficulties, APD is not a disorder per se, but a diagnosis that reflects the
profession choosing and performing the assessments (Friel-Patti, 1999). On the other hand, Moore and Hunter (2013) suggest that the comorbidity of APD with a wide variety of other auditory- and/or other language-based learning disorders reflects a more general, supramodal communication disorder, or ‘neurodevelopmental syndrome’, that incorporates a range of separate deficits, such as language, attention, literacy and behaviour problems, that affects auditory perception. APD is recognised as a clinical entity by AAA and ASHA, but this has been questioned by other groups (Vermiglio, 2014).

The question of interest in the current study was not to determine causal links, but to determine whether significant difficulties with hearing, auditory processing and language are present in the youth offender population in New Zealand, and whether differences in the pattern of these difficulties exist compared with a group of non-offending peers. Although the sample sizes are small, the results appear to answer both of these questions.

3.4.4 Nonverbal IQ

Nonverbal IQ test scores were significantly lower in the YOR group than the control group in this study. Others have also shown that youth offenders perform more poorly on IQ tests in general than their non-offending peers (Herrington, 2009; Lynam, Moffitt, & Stouthamer-Loeber, 1993). It may be tempting to conclude that the language difficulties might be accounted for by this lower IQ. However, there are a number of factors that argue against this. Firstly, the mean and median for the YOR group nonverbal IQ scores were both within the normal range (standard scores 85-115), whereas the language scores were below the normal range, suggesting language was an area of difficulty regardless of IQ. Also, eight (24%) youth offenders scored below the lower normal range cut-off of 85 on the TONI-3 compared with twenty-nine (88%) for the CELF-4 Core Language scores. Secondly, there is evidence that the accuracy of nonverbal IQ scores may diminish with age in those with oral language difficulties; studies of individuals with SLI suggest that as people get older they use verbal skills internally to solve nonverbal problems (Leonard, 1998). This can disadvantage people with SLI; for example, Tomblin, Freese and Records (1992) showed that young adults with SLI had a 9-point drop in nonverbal IQ scores from those recorded at 11-12 years of age.
Consistent with the current findings, Snow and Powell (2011c) found a significant correlation between nonverbal IQ and language scores in their group of youth offenders as a whole. However, as was found in this study, this association was no longer evident when examining the nearly one in two of the young people in the group who were identified as having LI. Although nonverbal IQ is likely to be linked with verbal skills to a degree, the poorer nonverbal IQ performance in the YOR group in itself is not sufficient to explain their lower language scores.

3.4.5 Limitations

As with any study, there are some methodological limitations. Two that should be borne in mind are potential selection bias for the YOR group, and a lack of specific SES data for both groups. The sample of youth offenders and remandees investigated here was only a small group of those passing through the youth justice residences, and may have been biased by several factors. Regardless of group, the young people who chose to participate in this study could have been a source of bias: it may be that only those confident enough in their abilities or those who had greater concern agreed to participate. However, only four of the 79 eligible young people declined to participate, making the main source of selection bias likely to be the requirement for parental consent. This requirement meant that most of the young people came from families and support systems that were motivated to read about the research, complete the forms and return them. When looking at the eligible non-participants, the main reason for non-inclusion was the failure of parents and guardians to return the consent forms. This may have excluded young people with less parental engagement in their up-bringing, perhaps associated with lower parental education levels, and these young people may have had greater difficulties than the participants who were included. Research in younger and vulnerable populations, such as youth offenders, presents a number of challenges with regards to obtaining informed consent (Meade & Slesnick, 2002). In this study, the decision to obtain parental consent for participants younger than 16 years of age was made to be consistent with the researchers’ institutional guidelines; however, it posed a significant barrier to recruitment and there are a number of reasonable arguments against obtaining parental consent in this particular population in future research. First, in New Zealand, there has been a
shift away from an age-based definition of consent in health-related research towards a focus on the competencies of the individual child or young person (New Zealand Psychologists Board, 2015). There would be a strong case for declaring the young people in a study such as this as being mature minors, i.e. to have the capacity to understand the nature, risks and consequences of the research and therefore give consent without parental involvement. As previously mentioned, many young people in trouble with the law come from fractured, difficult, and sometimes abusive home environments, where a parent’s decision may not be in the young person’s best interests. In the current study, over half of the eligible young people could not be included because of a lack of parental consent.

Another significant factor worth bearing in mind was the lack of socio-economic data for the participants. The researchers were not given access to such information for the young people in the youth justice residences and therefore it was not possible to match the participants by SES. It is, however, highly likely that the majority of young people at these residences are from low-SES background, but there is no data to confirm this. Notably, an analysis of the results in the control group according to decile (or SES) ranking found no significant, or clinically-meaningful differences or trends, in any of the assessments or subtest scores. Despite this, it is still possible that there may have been a significant difference in SES between the two groups in this study, which could inflate the between-group differences.

3.4.6 Considerations and recommendations

Assessment of language and hearing as soon as possible after young people enter the youth justice system would assist in determining the types of intervention that should be provided. Consideration should be given to the acoustics of the rooms in which the young people will be expected to hear, process and respond to verbal information - such as in court, rehabilitation programs or restorative justice settings. Assistive listening devices, such as Frequency Modulation (FM), sound-field amplification, or remote microphone hearing aids (RMHAs), could be provided for all young people, especially where hearing and/or auditory processing and listening difficulties are suspected. Such systems have been shown to benefit individuals with both peripheral hearing loss (Tharpe,
Statistics on the apprehension rates and demographic characteristics of youth offenders dominate reports of the youth justice sector both abroad and in New Zealand. However, there is a relative paucity of information regarding the various neurodevelopmental factors that are essential for rehabilitative efforts and successful transition out of the justice system. There has been a gradual recognition of the importance of these factors. A recent report commissioned by the Children’s Commissioner for the UK highlighted the importance of addressing developmental neurodisabilities for young people in the youth justice system (Hughes et al., 2012). Similarly, a review of neurodisability in the New Zealand context highlighted these issues from a legal standpoint, stating that taking account of neurodisability is important not only from a moral standpoint, but is also implicit in ‘fitness to stand trial’ legislation, where neurodisability is now a potential basis for a finding of ‘unfitness’ as outlined in the Criminal Procedure (Mentally Impaired Persons) Act 2003 and the Intellectual Disability (Compulsory Care and Rehabilitation) Act 2003 (Peirse-O’Byrne, 2014). These reports point towards an increasing imperative to assess communication skills in this population.

The current study establishes a starting point for further research on the communication needs of young people in the youth justice system in New Zealand and internationally. It shows there is a need to assess communication skills, as hearing loss, poor auditory processing, and impaired language skills all have a potential negative impact on rehabilitation. Existing orally-based intervention education and restorative justice approaches for youth offenders may need adjustment to accommodate the possibility that the youth offender may have undetected communication difficulties. Speech-language therapy services should be considered for this group of young people, especially considering the promising results shown in the UK (Burrows, Yiga, & Heneker, 2012; Gregory & Bryan, 2011). The current study also provides data for a minority ethnicity (New Zealand Māori) that is over-represented in the youth justice context, which has some parallels with the situation in the USA, where a minority ethnicity,
African Americans, are over-represented in youth crime statistics (Snyder, 2008). Possible future assessment and intervention services for youth offenders should acknowledge the cultural diversity and background of the young people involved. In New Zealand there is now a focus on addressing offending in a culturally-relevant manner (Williams et al., 2011). Ngā Kooti Rangatahi (Māori, marae-based youth courts) and Pasifika Youth Courts have been established to address and reduce reoffending by Māori and Pacific youth in New Zealand and to provide the best rehabilitative response (Ministry of Social Development, 2012a). Being aware of and involving appropriate agencies and cultural groups will form an essential part of any future speech and language therapy services offered this vulnerable group of young people.
Chapter 4. Tough Talk: Youth offenders’ perceptions of communicating in the youth justice system in New Zealand

4.1. Introduction

In 1989, two changes in law came into being that had the potential to significantly improve the lives of children and young people in New Zealand – one, the United Nations Convention on the Rights of the Child (UNCRC), would benefit young people the world over; the other, the Children, Young Persons, and Their Families Act (CYPF; 1989a), was specific to New Zealand. Both place the child or young person at the forefront and outline the importance of listening to children and young people (Ministry of Social Development, 2007; United Nations, 1989).

In response to the Children, Young Persons and Their Families Act, New Zealand introduced new objectives and principles, and an innovative system for responding to young people who offend (Ministry of Justice, n.d.-b). New Zealand’s reform of the youth justice system shifted focus away from a penal system towards one emphasising diversion, community-based sanctions, family decision-making, and flexibility (Lynch, 2016) - a move that has placed New Zealand at the international forefront of what has become known as restorative justice. The new system holds the young person accountable, but also constructs responses aiming at rehabilitation and reintegration, and support for their families, whilst also taking into account the needs of victims (Ministry of Justice, n.d.-b). New Zealand’s Youth Justice System has a number of ways it can respond to a young person’s offending, depending on severity. The majority of youth offenses are dealt with by the police using diversion with an on-the-spot warning; some may be dealt with by specialist Police Youth Aid Officers where further intervention may be required, but there is a clear preference under the CYPF Act to deal with young people less formally (Maxwell et al., 2002).

One of the main restorative processes used in the system is Family Group Conferences, where the young person, their family, youth justice professionals, and sometimes the victim, meet to plan how to deal with the young person who committed the offence. The aim is to help the young person to take
responsibility for their offending, find practical ways to make amends, address why they offended and find ways to prevent recidivism (Cleland & Quince, 2014).

New Zealand’s Youth Justice System makes a number of demands on the communication skills of young people. Because it relies primarily on spoken interactions the young person must be able to hear and understand the linguistic content, structure and emotional cues directed at them, and also be able to formulate and articulate a response that is appropriate and understandable in vocabulary, structure and emotional content. Any one or several of these factors may be affected in someone with a communication disorder (Nippold, 1993).

Snow and Sanger (2011a) identified the communication demands of youth justice processes on young offenders by reviewing the literature on communication disorders through the lens of restorative justice. The communication skills youth offenders are expected to have included: understanding questions posed by restorative meeting co-ordinators, youth justice workers, police and victims; understanding complex narratives; have real-time responses to questions; have narrative skills to be able to meaningfully and clearly explain their perspective of what happened; have appropriate non-verbal communication, such as eye contact and body language; and, adequate hearing, and language and auditory processing to understand language when people speak over each other in emotionally-charged environments.

The authors concluded that, under pressure, it is more likely that responses of young people with communication difficulties will become monosyllabic, poorly elaborated, non-specific and with poor eye contact; all potentially confirming often pre-formed biases about the young person’s apathy, rudeness and refusal to comply. Stressful conditions and limited communication skills may also contribute to aggressive behaviour and detrimental outcomes for the young person (LaVigne & Rybroek, 2010). Young offenders have themselves described resorting to aggressive behaviour and having trouble controlling their anger during difficult conversations, especially with authority figures (Hopkins et al., 2016; Sanger et al., 2000).
This could have consequences for a young person attending a Family Group Conference, where poorer communication skills - such as speaking in monosyllables, failing to display appropriate nonverbal behaviours, or failing to read the social cues from others may “create an impression of shallowness, low credibility, and/or low empathy for the victim” (Snow & Sanger, 2011a, p. 330).

Anderson, Hawes, and Snow (2016) reviewed 16 comparative, cross-sectional studies from the UK, Australia and the USA investigating the language skills of youth offenders, and found there is a strong association between language difficulties and youth offending. In the UK, Bryan (2004) found that, of the 30 young males at one youth offender institute, 43% had significantly lower scores than expected for their age on a picture naming test, 73% were significantly below their age range on grammatical competency, 23% were also significantly below their age range on language comprehension, and 47% had more than one rating of moderate impairment on picture description tasks. Bryan and colleagues (2007) reported rates of developmental language disorder (DLD; difficulties with expressive and/or receptive language skills) between 66% and 90%, this compares with around 7% in typically-developing groups of non-offenders (Tomblin et al., 1997). Similar findings were obtained in Australia by Snow and Powell (2008). Over 50% of their sample of 50 male, community-based youth offenders had significant deficits in their abstract/figurative language skills, sentence repetition, and narrative skills. Snow and Powel (2011c, 2012) found similar rates of DLD (46%) in incarcerated young males.

Studies from the USA have also shown high rates of DLD. In their group of 24 incarcerated Caucasian males, Davis, Sanger and Morris-Friehe (1991) found that 38% met their criterion for DLD, and Sanger and colleagues (2001) reported that nearly 19% of their 67 mixed-race incarcerated female adolescents performed at least 1.3 standard deviations below the mean on two standardised language tests and fulfilled the study’s criterion for DLD. Another US-based study also showed that composite expressive and receptive language measures for a group of mixed-race incarcerated male and female adolescents were significantly poorer than those of their same-age, non-adjudicated peers (Blanton & Dagenais, 2007).
Most research has been conducted elsewhere, however, a recent New Zealand-based study assessing the hearing, listening and language skills of 33 male young males from three youth justice residences found that, compared with a group of similarly-aged males, the youth offenders and remandees had significantly poorer hearing and listening skills, and 64% fulfilled criteria for DLD compared with only 10% of the controls (Lount, Purdy, & Hand, 2017).

While rates of DLD vary in these studies due to methodological differences, such as community-based versus custodial settings, male versus female participants, different language measures and different cut-off points for language impairment, what remains consistent is that in all the studies, the youth offender groups performed more poorly on the language tasks, and that in nearly all of the cases, these difficulties were previously undetected. Overall, Gregory and Bryan (2011) and Snow and Powell (2012) conclude that it would be reasonable to expect that 50-60% of youth offenders may present with language difficulties.

4.1.1 The voice of the young person

Because verbal communication is the main interface with the justice system in almost every jurisdiction, any barriers to being able to participate fully – from language or cultural barriers, impaired cognitive abilities and/or difficulties with hearing, auditory processing, or language skills – have implications for the offender’s basic rights and access to justice (Hughes et al., 2012). Understanding the language skills and communication experiences of young people who offend, will be essential to ensure this vulnerable group have optimal access to any services and support that they need to have positive outcomes.

The majority of research into the language and communication skills of youth offenders has used quantitative measures. There is limited qualitative research reporting the voices and experiences of the young people in the youth justice system, and even less focusing on their communication experiences. Sanger, Moore-Brown, Montgomery, Rezac, and Keller interviewed (2003) 13 incarcerated female youth offenders in USA who had been identified as having language impairment. They found that the participants could identify strategies for communicating effectively, but all said they had trouble with
listening, speaking, reading and learning. These participants reported that they felt dumb or put down by others because of their poor language skills, and many reported yelling, arguing and using physical force to be understood by others. Research to date suggests that rates of language difficulties are lower in female than male youth offenders (for example, Sanger et al., 2001) and there are qualitative differences in these language difficulties according to gender (Sanger, Hux, & Ritzman, 1999). Hopkins, Clegg, and Stackhouse (2016) in the UK examined male youth offenders’ perceptions of their literacy and language skills using semi-structured interviews and focus groups of 31 young people in a youth offenders’ institute. Identified themes included the young people being dissatisfied with their communication, having difficulty understanding others, and feeling they often lacked support and respect of others, and that they often had difficulties communicating with authority figures.

To our knowledge there are no published qualitative studies aimed at including the voice of the young people in the youth justice environment that focus on communication skills and experiences in New Zealand, where it could be argued the youth justice system has an even greater reliance on oral communication than most other jurisdictions because of the restorative focus. Qualitative research offers the opportunity to gather rich information and meaning from the stories of participants that would not otherwise be available through quantitative methods (Creswell, 2013) and including the voice of young people in trouble with the law has been increasingly encouraged within New Zealand. New Zealand’s Oranga Tamariki – Ministry for Children (formerly Child, Youth and Family) – which, amongst other duties, works with the police and the courts in dealing with young offenders – recently reviewed their policies and processes and recommended that legislative changes should be made to ensure that “the views of young people at an individual and system level are heard” (Ministry of Social Development, 2015b, p. 23) and that processes “must also encourage and value feedback from children, families and caregivers” (Ministry of Social Development, 2015c, p. 101).

Therefore, this study used a qualitative approach to include the voice of a group of males in the youth justice system in New Zealand by asking them how they experience: 1) communicating in the
youth justice system, 2) understanding professionals in the youth justice system, and 3) expressing themselves with professionals in the youth justice system.

4.2. Method

4.2.1 Ethics approval

Ethics approval was obtained from the University of Auckland Human Participants Ethics Committee (reference number 010443), New Zealand Police, and the Research Access Committee of the Ministry of Social Development (now Oranga Tamariki – Ministry for Children) which oversees the youth justice residences.

4.2.2 Participants

The participants were an opportunity sample of eight male young people from one youth justice residence in New Zealand. All were male, spoke and understood English as their first or equal language, and were aged between 16 years and 1 month to 16 years and 10 months ($M = 16.51$, $SD = .25$). They had no history of major psychiatric illness, no known peripheral hearing impairment, and no known brain injury.

The four youth justice residences in New Zealand cater to young people aged from 14 years up to their 18th birthday, who are either subject to a Supervision with Residence Order (highest order given by a youth court judge), on a remand status (average stay of 50 days), or sentenced to prison for an indictable offence (Ministry of Social Development, n.d.). Five of the participants were on remand, one had a Supervision with Residence Order and two were sentenced in the High Court. Five young people self-identified as New Zealand Māori (63%), two as Cook Island Māori (25%) and one as part New Zealand Māori, Samoan and New Zealand European (12%). One participant was bilingual in English and Cook Island Māori; another reported speaking Māori as a child but now speaking only English. Six spoke English only. In New Zealand, the majority (79%) of young people charged in the youth justice system are male, aged 15 or16 years (75%), with 62% of Māori decent, 23% New Zealand European and 11% Pasifika (Statistics New Zealand, 2016). The ethnic composition of the study participants is
similar in that Māori form the majority, whereas New Zealand European are under-represented and Pasifika over-represented.

Data on the young people’s education, socio-economic status (SES) or previous speech-language therapy or other services were not made available through records, or permitted to be collected during the interviews due to confidentiality and anonymity reasons, by Oranga Tamariki - Ministry for Children.

4.2.3 Procedure

Young people’s files were reviewed by a residence staff member to identify potential participants; those meeting the inclusion criteria were approached by a member of staff at the youth justice residence and were given information about the research. Ten young people fulfilled the inclusion criteria; of these, two declined to participate. Eight young people agreed to participate and all consented to having their interviews recorded.

Verbal and written consent was obtained from each young person prior to the interview, which was conducted at the youth justice residence. The interviews ranged in duration from 12 minutes to 31 minutes; each interview was conducted in one session. Participant information was de-identified and all responses kept confidential. All young people were informed that they could take breaks, withdraw at any point and refuse to answer any questions.

Interview recordings were transcribed verbatim by the first researcher and analysed using NVivo qualitative data analysis software (version 11, 2015, QSR International Pty Ltd).

4.2.4 Data collection and analysis

All interviews were semi-structured and used mainly open-ended questions to encourage a more in-depth analysis of the young people’s responses (Patton, 2015). The protocol was developed in consultation with staff at the youth justice residence (teachers, team leaders, etc.) and a Māori Youth Advocate (lawyer for young people). The interview questions (see Appendix 17) consisted of six sections that examined the young people’s interactions with the professionals in the youth justice
system, focusing on how they described being able to hear, understand and talk to youth justice professionals, from arrest to the residence, and what they felt might help to make talking and understanding easier (sections 1-4). Section 5 asked about general communication experiences. Section 6 asked about language used between the young people; these last questions were incorporated after discussion with youth justice professionals, who noted their use of their “own” language. The interview questions aimed to complement an earlier quantitative study (with different participants), which examined the hearing, auditory processing (how the brain interprets the sounds it hears), and receptive and expressive language skills of male youth offenders in youth justice residences (see Lount et al., 2017). Oranga Tamariki - Ministry for Children reviewed and approved the final version of the interview schedule.

Interpretation and analysis of the interviews drew on a general inductive approach (Thomas, 2006) allowing the findings to emerge from the dominant, frequently-occurring or significant content. The small sample size allowed both a description of themes across the entire data set, but also at the level of the individual, using latent thematic analysis (Braun & Clarke, 2006). In order to show the prevalence of the themes, the descriptors recommended by Braun and Clarke (2006) of all, many or several participants have been used, with numerical references used for particular accentuation.

Interview transcripts were read multiple times to gain familiarity with the content, identify themes and check for consistency of the coding into overarching themes (Braun & Clarke, 2006). Themes were reviewed by constant comparison, as suggested by Bazeley (2009), using the three-step process of describing their characteristics and boundaries, comparing across individuals and contexts, and relating the themes to others found in the literature. Negative-case analysis was used where any contradictions between the evidence and themes were found (Brodsky, 2008); any themes or sub-themes that were not well supported were not included in the final theme hierarchy. To increase trustworthiness of the analysis, all authors independently and then, at multiple points, collectively reviewed the themes and interpretation to ensure the coding and themes represented an accurate and valid analysis of the data.
The vulnerable nature of the young people and the highly variable numbers of young people at the youth justice residence at any one time created some restrictions on the amount of data and the number of participants that could be included. On the two days the lead author had access to young people to interview, only 10 fulfilled the inclusion criteria. Therefore, obtaining saturation (or the point at which no new information or themes are observed in the data) by the traditional method of interviewing increasing numbers of participants was not possible. However, saturation of codes within a data set have been found to occur in as few as six interviews (Guest, Bunce, & Johnson, 2006), and the data from this study were repeatedly analysed and critiqued for any evidence of new information or themes.

4.2.5 Reflexivity

The first author interviewed the young people. Throughout data collection and analysis, the researcher bore in mind the potential power differential between herself and the interviewees. It was acknowledged that the young people were mostly of Māori ethnicity, which would heighten the perceived differences between themselves and the New Zealand European, female researcher.

Early in the design process the researcher consulted with a senior teacher at the youth justice residence about the best approach and language to use to elicit the most candid responses and best possible participation from the young people being interviewed. Establishing a rapport with the young people was highlighted as important; however, there were restrictions on when, how and where the interviews could take place at the residence due to practical issues for residence staff, which meant only a short time was spent with each participant. This may have limited some of the responses.

4.3. Results

The main finding identified in the data was that the young people struggled to understand much of what happened in court and this resulted in them expressing a sense of having no control or ‘voice’.

(Starks & Trinidad, 2007). Verbatim quotations were selected from the transcripts to demonstrate recurring and dominant themes.
Further examination showed that a number of aspects of the young people’s communication experiences contributed to this, but there were several factors that they perceived helped with communication (see Figure 4 for a theme hierarchy).

Figure 4. Theme hierarchy: how youth offenders describe communicating in the youth justice context.

4.3.1 Lack of control

The sense of a lack of control emerged from how the young people talked about their experiences communicating in the youth justice system; it drew from the subthemes, as well as the emotional content of what they said, including the tone of their voice, their words and length of their answers.
The court appearance was significant for the young people and generated the greatest emotional response; this was when they learned they would “lose their freedom” and go to the youth justice residence. It was clear that aspects of the court hearing presented difficulties for the young people, and that the legal jargon and formal language contributed to a general lack of understanding of the events. This, combined with uncertainty of how and when to participate, led to frustration for the young people.

The young people expressed the sense of powerlessness or having no ‘voice’ in different ways. Several \( n = 4 \) spoke with frustration at not being given the opportunity to speak or ask questions in court, for example, one young person said with some anger:

YP3: *They should have gave me a chance to talk!*

Not all of the participants referred to their courtroom experiences with frustration, but expressed a sense of despondency and powerlessness that they were just passengers in the system with no real ‘voice’ or ability to contribute:

YP4: *It was kind of hard sometimes because I didn’t know what to ask...Yeah, it was like I was just talking to them for nothing.*

Two of the three young people who had the confidence to participate in court also expressed a sense of no control or a sense of confusion, for example:

YP1: *I feel I was asking myself: what are they talking about? Trying to figure out what they were talking about.*

The third expressed frustration and a sense of no control in the outcome of court. When asked what was hard about court, he said:

YP7: *Just, why I’m in here.*

The sense of no control was most prominent and consistent across those who did not mention any communication strategies without prompting, and spoke of limited participation in court (YP 2, 4,
5, and 6). These young people spoke with quite intense frustration about their experiences and lack of opportunities to speak or ask questions.

The one young person who did not portray this sense of having no control or ‘voice’ to participate said the courtroom language was difficult, but notably, at several points in the interview, mentioned strategies he used when communication became difficult:

YP8: [in court] they use all fancy words...I just ask them if, oh, the questions that I didn’t know, I asked my lawyer about them and they just explained them to me...They speak quite fast – I dunno, I just tell them to slow down.

Overall, he spoke about his experiences with a positive tone, and his only suggestion to make things easier in court being “if they put those fancy words into the words that we know, that’s it”. Also, unlike some of the other participants who expressed frustration or a sense of injustice, despite not getting the decision he wanted in court, he found the humour in it saying:

YP8: I was, ha, thinking I’d get bailed...

4.3.2 Understanding what's going on

A closer look at the components that contributed to the sense of no control showed that a significant factor was the participants’ difficulties understanding the language and events in court.

All of the young people reported that understanding in the court environment was hard for them. The difficulties related to the courtroom communication environment but also a macro-level understanding of events and outcomes where the young people expressed frustration and a lack of understanding of the judge’s decision. However, all the participants identified professionals that either could have helped them, or did help them understand what was going on in court, and in the youth justice residence.

Courtroom language was reported by all eight participants as being a source of great difficulty:

Researcher: How did you find it talking to people when you were in court?
YP1: Hard.
Researcher: *It was hard? What was hard about it?*
YP1: *Just finding the words; just hard to talk to them. Because they talk all fancy, and sometimes I don’t understand what they’re saying.*

YP2: *There was a lot of fancy words that I didn’t understand.*

These words were echoed in the other young people’s interviews with many saying the professionals in court used “fancy”, “big” or “long” words that they couldn’t understand. The speed of the talking also made it difficult for several of the young people to understand what was happening; three mentioned that the professionals spoke too quickly. For example, one participant said:

YP7: *They all go fast and a bit quiet.*

Another three participants mentioned that they struggled to hear the speakers:

YP3: *I was like way in the dock, like way back, and can’t really hear anything, even though they’ve got the mics, they’re like, still quiet talkers.*

Several (*n* = 5) of the young people indicated that the difficulty of understanding in court went beyond the vocabulary and speed of talking, and was more related to a macro-level understanding of court events and outcome of their court appearance:

YP1: *I feel I was asking myself: what are they talking about? Trying to figure out what they were talking about.*

YP5: *just the stuff that they say; it was hard to try and get an understanding of what they’re saying.*

Researcher: *What bits were a little bit hard about it [court]?*
YP7: *Just...why I’m in here.*

4.3.3 Confidence and participation

In the context of the young people’s experiences in court, there was a lot of variation in the degree to which the young people seemed to have the confidence to participate when referring to court
events. This was not apparent in how they spoke about their experiences in the youth justice residences or other situations.

Only three young people reported being able to ask questions or say what they wanted to in court:

YP1: *If you don’t understand it, you just ask questions, so I just tried to ask heaps of questions, what that means.*

Researcher: *Were you given the chance to talk [in court]?*
YP7: *Oh, yeah. I just said it anyway {laughs} I just said what I wanted to say.*
YP8: *They speak quite fast [in court] ... I just tell them to slow down.*
Researcher: *You were given the chance to*
YP8: *{interrupts} Speak up? Yeah.*
Researcher: *And that was an easy thing to do?*
YP8: *Yeah.*

The remaining five young people indicated limited participation. Several factors appeared to be barriers to participation for these young people. For one participant, it was clear that a lack of confidence to speak up was a significant factor:

Researcher: *Were you given the chance to ask questions if you needed to?*
YP4: *Yep, but I never did. Nah, I was just too shy - I woulda asked questions but I just, yeah, I’m just not a very good communicator...*
Researcher: *So next time in court, what would you want to be different?*
YP4: *Oh! Talk {positive tone}, because I never talk. Like when they asked me, what do I want to do, or something. Like when they first see me, they asked me that, and I was like, I just kept saying “I dunno”.*

The other three young people reported that they had no opportunities to ask for help to understand things in court. One young person said:

YP2: *All those fancy words, I just couldn’t understand them.*
Researcher: *Did anyone explain them to you?*
YP2: *Oh, {pause - scrunched up face}*
Researcher: Not really?
YP2: Not really.
Researcher: Ok, were you given chances to say if you didn’t understand something?
YP2: Oh, {pause - scrunched up face and shook his head}
Researcher: Not really?

Similarly, when talking about the difficult words in court, two other participants said:

Researcher: Did the people using those long words ever ask if you understood those words?
YP3: Nah, it’s usually the judge, eh, saying those long words, and I’d only talk to the judge.
Researcher: And did they ever give you times where you could ask questions?
YP3: Nah, I never got to talk to the judge myself, barely {frustrated tone}.
Researcher: Did you get the chance to say that you were finding it hard?
YP5: No, because they just skip to the next subject {frustrated tone}.
Researcher: If you went back to the courtroom now...what do you think would make it easier in terms of hearing and understanding what was going on?
YP5: Probably, oh I don’t even know.
Researcher: Ok, do you think having the opportunity or the chance to say...
YP5: To speak, yeah!
Researcher: So you felt you weren’t really given that chance?
YP5: Yeah.

4.3.4 Factors that help communication

This subtheme relates to one of the three pre-specified questions about communication that the interview schedule included (what do you think might help make talking/understanding things easier?).

Having strategies to repair communication breakdowns is essential for effective communication (R. Paul & Norbury, 2012), but there was variation in the degree to which the young people in this study could identify strategies that would help when communication became difficult. Four of the young people mentioned strategies without prompting or suggestions from the researcher:

Researcher: What was hard about it?
YP1: *Just probably – oh I don’t know – just the stuff that they say; it was hard to try and get an understanding of what they’re saying. If you don’t understand it, you just ask questions, so I just tried to ask heaps of questions, what that means.*

Researcher: *What do you think would make it easier for young people if they are struggling to understand? What do you think would really have helped you, if you look back?*

YP2: *Oh, I reckon someone that can stand by your side and if you don’t understand then you can give them a tap and ask them. That’s what I was looking for at the time [in court], but I didn’t have that.*

Researcher: *If a young person was finding it hard to talk with the staff here, what do you think might help?*

YP3: *Oh, talk to them when you’re by yourself.*

Researcher: *So is there anything you would change of how it was like for you in court to make it easier, is there anything you would change?*

YP8: *If they put those fancy words into the words that we know, that’s it.*

Four of the participants gave vague or general ideas, or did not mention any specific strategies, for example:

Researcher: *What do you do when they’re not understanding you?*

YP4: *Oh, just, I just keep saying it! Keep talking in that way.*

Researcher: *What do you think would make it easier if you went back to court now, in terms of hearing and understanding what was going on?*

YP5: *Probably…oh I don’t even know.*

Although some of the young people struggled to spontaneously mention strategies that could help or failed to give any answer, many (*n* = 6) were able to recognise what could help with prompting and directed questions:

Researcher: *If there were some long words [in court] that you struggled to understand, could you ask anyone about what they meant?*

YP3: *Oh yeah, ask my social worker or my lawyer.*
Researcher: *If you went back to the courtroom now, what would you like to change, or what do you think would make it easier?*

YP5: *Probably, {pause} oh I don’t even know.*

Researcher: *Ok, do you think having the opportunity or the chance to say…*

YP5: *{interrupts}…to speak, yeah definitely! {positive tone}.*

Although there was variation in the use of communication strategies, all of the participants were able to identify at least one person that made communicating easier, whether in court or in the youth justice residence. The young people’s lawyers and social workers were mentioned (*n* = 5), or recognised (*n* = 2), by nearly all of the participants as helping when court events or words were confusing:

Researcher: *Who did you find the easiest to talk to?*

YP6: *Just mainly my social worker. Yeah.*

Researcher: *What made it easier talking to them?*

YP6: *Everything. ‘Cause they’re the ones that talk about things with me, that stuff I don’t even know much about.*

Staff at the youth justice residence, and Police Youth Aid were also mentioned by four of the young people as being easy to talk to and understand.

4.3.5 *Relationship with communication partner*

When elaborating on why some people were easier to talk to, the young people identified the relationship between them as significant; moreover, this related to the relationship with the individual (*n* = 7), rather than their role, per se. There were a number of elements to this relationship that came out of the data.

Trust was mentioned by all of the young people when discussing factors that made it easy to talk to someone, and although some (*n* = 3) related this to the professionals’ role (knowing they were there to help), many (*n* = 6) emphasised that it was the relationship and trust with the individual that mattered most:

Researcher: *What about talking to [your lawyer] was easy?*

YP1: *Oh, anything. Just to know that you trust them.*
Researcher: *What about talking with [the youth justice residence staff] makes it easy?*
YP6: *I dunno. It’s just I trust them.*

Researcher: *Who do you find the easiest to talk to?*
YP4: *Probably my mentor, or somebody I know. And I like, get to know them, and like if they’re a good person, I’ll talk to them a lot. If they’re not then, yeah…*

Although four of the participants mentioned a lack of trust and difficulty talking to the Police, two young people identified their Police Youth Aid Officer as someone they could trust and talk to:

YP5: *I have one [Police Youth Aid Officer] on my side.*
Researcher: *And what are they like to talk to?*
YP5: *Good, they just try and keep me away from bad things...you know your Youth Aid Officer really well.*

Familiarity was mentioned by many of the young people as making it easier to talk to someone. Familiarity with the speaker was highlighted by seven of the participants as a key factor that facilitated communication, for example:

Researcher: *What’s it like talking with the [residence] staff here?*
YP1: *Easy, oh, with the staff you know it’s easy, but meet new staff, and you probably have to build that relationship first.*

Researcher: *Why do you think they [lawyer and social worker] were easier to talk to?*
YP3: *Because I always, pretty much, talk to them every week, every day of the week.*

Culture and ethnicity of the communication partner was also a factor that could help or hinder whether the young people (n = 4) felt they could talk to someone easily. For two young people, familiarity and culture seemed to go hand-in-hand as making the youth justice residence staff being easy communication partners:

Researcher: *What do you think makes it easy to understand them [the staff]?*
YP2: *They talk to you like they’re your brother or sister, they don’t say fancy words.*

Researcher: *And how about the staff in here? Do you find it easy or hard to talk to them?*
YP5: *Pretty easy; ’cause they’re like our parents, yeah.*
Whereas, for one Māori young person, it was the fact that the youth justice residence staff were mostly of Samoan ethnicity that made them easy to talk to:

Researcher: And how about the staff at the residence?
YP7: Yeah, they explain things well; the staff here are all Samoan.

However, for one young person, it was this same factor that he felt made it harder to talk with the staff:

Researcher: And the staff here?
YP4: Oh, I’m getting used to it. Because they’re like, Islanders and they’re like, different to how we talk [down South], and then…yeah, I’m getting used to it though.

Apart from the professionals in the youth justice system, the language, or vernacular, that young people use with each other, was recognised by all of the participants as being a useful communication tool in the youth justice residence. It appeared to be used to establish their relationship with other young people, but also as a form of resistance to avoid the adults and professionals understanding what was being said. All but one of the young people could see it was a way for the young people to regain some freedom or control in the youth justice residence, where they felt they were constantly being monitored, for example:

Researcher: Is it helpful for you guys to have your own language?
YP1: Yeah, just so they don’t know what we’re up to! Because they’re always just listening to us, watching us, 24-7.
YP3: It’s like undercover words, miss {smiling}.

Researcher: Is it sometimes good to think that you might have some words that the adults don’t understand? Is that useful sometimes?
YP5: Yep. It’s just like smoking and your parents, they don’t know you smoke.
YP7: When people are around, the staff, it’s hiding talking about stuff.
Notably, not all of the participants reported using this vernacular, even though they recognised its usefulness. Two young people (both sentenced via High Court and staying in the residence long-term) used ‘we’ when referring to its use. In contrast, the other five young people (four on remand and one sentenced in Youth Court) used ‘they’. Of these five participants, three specifically mentioned they did not use the vernacular at all but could understand why it was used. For one participant who reported not using it, it seems to have been used to establish social status and to reinforce his position as a ‘newbie’:

YP4: Sometimes even I don’t get what they’re on about, because when I first came here, they were like “do you have a mors?” - Do you know what a mors is? It’s like a girlfriend outside, a mors – a missus, and I said “eh? What’s that?”, and they were like, having a laugh because I didn’t know what that meant.

For a second participant, it had a clear negative association:

YP6: Sometimes it’s a different story when you’re in here, like us, like, they use words like that, so...they might want to get someone smashed, or, yeah. They just use words like that.

4.4. Discussion

Listening to the voices of a group of adolescent males in the youth justice system in New Zealand showed that the difficulties they experienced communicating had the potential to leave them feeling as though they had no control or ‘voice’. This was expressed in various ways through how the young people talked about communication in court, and many of the young people spoke with frustration and strong emotions about their difficulties understanding the language and events during their court hearing, as well as their limited opportunities to speak.

Feelings of no control or powerlessness in the youth justice setting have also been reported in other studies. New Zealand-based research examining the views of young people in the youth justice system found that the participants also expressed feelings of powerlessness and frustration in dealing with youth justice agencies and navigating through the system (Ministry of Social Development,
A New Zealand-based Ministry of Justice study also found that the young people in their study became disengaged from the court processes as a result of struggling to understand the legal jargon, and overall, the level of their understanding depended on the language used by professionals (Ministry of Justice, 2011). It is concerning, given the present findings, that an Australian longitudinal study of young offenders’ perceptions of the sentencing process and subsequent offending outcomes found that young people who felt stigmatised or alienated during the court hearing were substantially more likely to reoffend in the future (McGrath, 2009).

One of the most notable barriers that contributed to this lack of control that all the young people identified, was difficulty understanding the language used in the courtroom. This is consistent with other studies of the experiences of young people in the youth justice system. A UK-based qualitative study examining youth offenders’ perceptions of advocacy during youth court proceedings reported that most of the young people interviewed said they had difficulty understanding the words in court; one was quoted as saying: “some of the words were too posh, adults might get the words but to teenagers like me it was all like long words and that” (Wigzell, Kirby, & Jacobson, 2015, p.48). A New Zealand-based study found similar results when interviewing young people and their families about their general experiences in youth court: “they use like real big words sometimes and I don’t know what they mean” (Ministry of Justice, 2011, p. 40). Both these studies identified difficulties understanding the language, as well as difficulties with broader, macro-level understanding of courtroom events and outcomes, similar to the current study, where five of eight young people expressed difficulty understanding courtroom events. In the New Zealand-based Ministry of Justice study (2011), half of the 43 young people reported they did not understand or only understood on some occasions what was happening in court. It should be noted that these difficulties were found in a general sample of young people in the youth justice system, not those specifically identified as having speech, language or communication impairments.

The findings from these young interviewees raise concerns that are likely to be relevant to other young people attending court, and question the young people’s ability to fully participate in youth justice
processes. Difficulties understanding court proceedings is a barrier to the young person being able to fully participate and represent themselves, and at a minimum, has the potential to leave the young person feeling frustrated or disengaged. At worst, this raises questions around natural justice, and their fitness or competence to stand trial within the current youth justice system.

Despite the difficulties with court that the young people in this study mentioned, they were able to identify people and factors that made communication easier. All identified a professional that was easy to talk to, and it was the relationship they established with the individual, rather than their role, which the young people identified was important. This supports other research that has shown that building trust and familiarity with professionals, regardless of their official role, is perceived by youth offenders as a key factor for facilitating positive interactions and outcomes (Heath & Priest, 2016; Macdonald, 2006; Soenen, D’Oosterlinck, & Broekaert, 2013; Walsh, Scaife, Notley, Dodsworth, & Schofield, 2011).

Another notable finding from this study was that only half of the young people were able to spontaneously generate strategies they could use for communication breakdowns, but with prompting from the researcher, more could recognise helpful strategies. This is similar to findings of a US-based study by Sanger and colleagues of incarcerated female delinquents with known DLD showing that, although the participants could identify what characterised good and poor communication, they still had difficulty applying this knowledge (Sanger, Moore-Brown, et al., 2003). Similar results were found by Hopkins, Clegg and Stackhouse (2016) in their interviews with male youth offenders on court orders in the UK. Consistent with the current study, these young people were not identified as having DLD, but the findings suggested they were dissatisfied with their communication abilities; they reported that they struggled to understand others, and although they had some knowledge of good communication, they also did not consistently use this. In each of these cases, the young people could recognise what could help, but had difficulties applying that knowledge.

In the current study, the young people reported difficulties understanding the words and wider contextual events in court; they expressed frustration when talking about not being able to express
themselves in court, or use strategies to improve communication. These findings are in line with data from studies using standardised assessments of youth offenders’ language skills. This research has identified that a disproportionate number of youth offenders (mostly with previously-unidentified language difficulties) exhibited difficulty with language comprehension, i.e. receptive language skills (for example, Blanton & Dagenais, 2007; Gregory & Bryan, 2011; Humber & Snow, 2001), poor vocabularies (Sanger et al., 2001), poor pragmatic or social communication skills (Humber & Snow, 2001; Snow & Powell, 2008), and poor expressive language skills (for example, Hopkins et al., 2017; Snow & Powell, 2008; Snow et al., 2016). All these have the potential to impact on their participation in many youth justice processes (LaVigne & Rybroek, 2013; Snow & Sanger, 2011a).

4.4.1 **Limitations**

The number of participants was small, from one youth justice residence, and only included males. Additionally, cultural and social bias may have affected results. Although verbatim quotes are provided to support the thematic analysis, the researcher, being Caucasian, may have interpreted the comments made by the primarily Māori or Pasifika participants in a way that aligns more closely with her own culture. Furthermore, the participants could have given answers they perceived were expected of them, or maintained their self-esteem or social identity.

It is also worth considering when interpreting the results that the language skills of the young people in the current study were not assessed (in accordance with the aim of the study) and the sample size was small; therefore, it is possible this particular sample of participants and their answers are not representative of all male youth offenders. However, the demographics (average age and ethnicity) of the sample do parallel those of the youth offender population in general (Statistics New Zealand, 2016). Secondly, because of restrictions on data collection, it was not possible to collect information on formal education and other potentially-relevant factors during the interviews, which may have provided some insight on factors that could contribute to communication difficulties. The participants are adolescent males and therefore some of their answers and perspectives may have been influenced by general
tendencies of rebellion and conflict with authority figures common to their age (Hartzell, 1984; Wiley & Berman, 2012).

4.4.2 Future research

This is one of only a few qualitative studies reporting the voices of young people in the youth justice system in New Zealand. Not all of the young people contributed to all of the themes and subthemes. Therefore, additional research into the communication experiences of different groups of young people in trouble with the law would help to determine whether the themes derived from interviews with this particular group of adolescent males in youth justice residences extend to the broader youth offender population of New Zealand.

Future research into young people and their communication in the youth justice system could also include measures of their communication skills to help establish whether reported difficulties are associated with DLD. Pilot trials of interventions that include skills to identify and apply strategies for communication breakdowns could be assessed in youth offenders generally, or those with identified communication difficulties. Additionally, further research could include community-based samples, which would give a wider view of the larger proportion of young people in trouble with the law in New Zealand. Although rates of language difficulties tend to be higher in males than females (R. Paul & Norbury, 2012), female offenders should also be included – international research has found that rates of language impairment are also high in female youth offenders, at around 19% in US-based studies (Sanger et al., 2000, 2001) and 27% of an Australian-based study (Snow et al., 2016); compared with what would be expected in the general population (~5%; Larsen & McKinley, 1995).

4.4.3 Implications for future practice and conclusions

The relationships the young people had with the professionals was a key factor in making communication easier for the participants in this study. Therefore, the courts and professionals should pay particular attention to ensuring young people have a familiar source of support that they trust and can approach when communication or understanding becomes difficult. This is also applicable to young
people attending Family Group Conferences (FGCs), where the young person, their family, youth justice professionals, and sometimes the victim, meet to plan how to deal with the young person who committed the offence. These meetings can be highly demanding of the young person’s communication skills, and without adequate support, poor communication may “create an impression of shallowness, low credibility, and/or low empathy for the victim” (Snow & Sanger, 2011a, p. 330).

Court intermediaries – a communication specialist whose role it is to help a witness or defendant understand the court process and give their best evidence - are already available in the UK. The findings of the current study support the introduction of a similar role in New Zealand’s Youth Justice System, both in court and during FGCs.

Involvement of speech-language therapy (SLT) services to assess the language skills of young people in the youth justice system is supported by both international and New Zealand-based research, whether as routine practice or limited to those with suspected difficulties. The results of the current study complement studies reporting data from standardised language assessments by showing that youth offenders without identified communication difficulties could also benefit from intervention aimed at strengthening their communication skills, especially identifying and using strategies for communication breakdown. The findings also suggest it could be beneficial to provide youth justice professionals with additional strategies to recognise and repair such breakdowns, and support the young people’s communication, especially in court.

Provision of SLT services or a court intermediary in the youth justice system in New Zealand would help young people have the greatest chance of full and meaningful participation, and ensure the youth justice system fulfils its role to uphold the rights of all children and young people to have their voices heard, as laid out in the United Nations Convention on the Rights of the Child.
Chapter 5. Communicating with young people in youth justice; the perception of professionals in New Zealand

5.1. Introduction

New Zealand’s Youth Justice System has seen positive progress in the last decade that shows a consistent pattern of decreasing numbers across the youth justice system. There have been fewer Police apprehensions, and fewer children and young people charged in the Youth Court since 1992, with these decreases seen across gender, age and ethnic groups (Ministry of Justice, n.d.-b). The majority of these children and young people charged in court are aged 15-16 years (75%), are male (79%) and increasingly are of Māori ethnicity (from 46% in 2005 to 62% in 2015).

These data show that progress is being made in reducing overall youth crime in New Zealand, but there remains a small group of 5-15% of youth offenders who are recidivist and commit more serious crimes. This group accounts for around 50% of all youth offending (Becroft, 2014). These young people represent the most vulnerable and most in need of the assistance to prevent repeat offending and undergo rehabilitation.

Young people in contact with the justice system are a diverse group, but are generally found to have a range of environmental, developmental and psychiatric risk factors. Both international and New Zealand-based research has shown that these young people are more likely to come from dysfunctional and low socio-economic status (SES) backgrounds (Moffitt & Lynam, 1994; Snow & Powell, 2011a). They also tend to have a greater overlap of disorders and more risk factors overall than their non-offender peers. This includes poor general health and increased substance abuse (Braverman & Morris, 2011; Ministry of Health, 2005), chaotic, neglectful or abusive home environments (Stewart et al., 2008), conduct, attentional disorders or cognitive disturbances (Lipsey & Derzon, 1998; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998), as well as learning disabilities, poor literacy levels, and poor social skills (Rucklidge et al., 2009; Snowling et al., 2000).
Backgrounds and risk factors such as these have also been found to correlate with the nature and extent of language difficulties (Clegg, 2006; Cross, 2011; Roy & Chiat, 2013). This means young people in trouble with the law have a much higher chance of having some form of language or communication disorder. In New Zealand, there are also additional considerations for this population. There is a greater proportion of Māori and, to an extent, Pacific young people in youth offending statistics relative to the general population (Statistics New Zealand, 2016); these ethnicities are also over-represented in statistics for poorer health outcomes, higher rates of untreated otitis media, and higher rates of auditory processing disorder than the general population (Giles & Asher, 1991; Ministry of Health, 2013; Purdy et al., 2012). Low SES individuals and Māori and Pacific young people are also over-represented in family and child maltreatment statistics (Marie et al., 2009, 2014).

Over recent years, there has been a growing awareness of the particular developmental difficulties these young people face. In 2012, a report by the Children’s Commissioner for England demonstrated evidence of staggeringly high prevalence of neurodisabilities in young offenders (Hughes et al., 2012). Hughes et al. asserted that rates of speech, language and communication disorders are higher than those of other neurodisabilities. This assertion came from the increasing number of UK-based and international studies that show a disproportionate number of young people in trouble with the law have difficulties with oral language, compared with their non-offending peers.

5.1.1 Communication disorders in youth offenders

Bryan (2004) found significantly impaired communication skills in a group of 30 young males at one youth offender institute in the UK. Forty-three percent had significantly lower scores than expected for their age on a picture naming test, 73% were significantly below their age range on grammatical competency, 23% were also significantly below their age range on language comprehension, and 47% had more than one rating of moderate impairment for their spontaneous speech samples on picture description tests (this tested aspects of vocabulary, syntax, amount of information, adequacy of description, voice, articulation and fluency). Bryan, Freer and Furlong (2007) later reported rates of developmental language disorder (DLD; difficulties with expressive and/or receptive language skills).
in the range of 66-90%, compared with around 5% in typically-developing groups of non-offenders (Tomblin et al., 1997). Snow and Powell (2008) found similar results in Australia, where over 50% of their sample of 50 community-based male youth offenders had significant deficits in their abstract/figurative language skills, sentence repetition, and narrative skills. More recently, Snow and Powell (2011c, 2012) found similar rates of DLD (~46%) in incarcerated young males in Australia.

Studies from the USA have also shown high rates of DLD in youth offenders. Davis, Sanger and Morris-Friehe (1991) found that 38% of the 24 institutionalised, male youth offenders they tested met the study’s criterion for DLD. Sanger, Moore-Brown, Magnuson and Svoboda (2001) reported that nearly 19% of their 67 mixed-race incarcerated female adolescents performed at least 1.3 standard deviations below the mean on two standardised language tests and fulfilled that study’s criterion for DLD. Another US-based study also showed that composite expressive and receptive language measures for a group of mixed-race incarcerated male and female adolescents were significantly poorer than those of their same-age, non-adjudicated peers (Blanton & Dagenais, 2007).

Most of the research into the language skills of youth offenders has a focus on male adolescents as they are over-represented in youth-offending statistics (Australian Bureau of Statistics, 2017; Statistics New Zealand, 2016; UK Ministry of Justice, 2017; US Department of Justice, 2015). Studies that have included female youth offenders have documented lower rates of DLD than in studies of male youth offenders (for example, Bryan et al., 2007; Sanger et al., 2001); however, the rates of DLD in female youth offenders have been found to be significantly higher than non-offending female comparison groups (Blanton & Dagenais, 2007; Sanger, Hux, & Belau, 1997; Snow et al., 2016).

The research reported above is all from outside New Zealand. Little research has been done in New Zealand so far; however, a recent study assessed the hearing, listening and language skills of 33 young males from three youth justice residences in New Zealand (see Chapter 3 of this thesis). It found that, compared to a group of similarly-aged males, the youth justice residents had significantly poorer hearing and listening skills, and 64% fulfilled criteria for DLD compared to only 10% of the controls (Lount, Purdy, & Hand, 2017).
The rates of DLD vary in these studies due to methodological differences, such as community-based versus custodial settings, male versus female participants, different language measures and different cut-off points for language impairment. What remains consistent is that in all the studies, the youth offender groups performed more poorly on the language tasks, and that in nearly all of the cases, these difficulties were previously undetected. Overall, Gregory and Bryan (2011) and Snow and Powell (2012) concluded that it would be reasonable to expect that 50-60% of youth offenders may present with oral language difficulties.

There is also some qualitative research which suggests that young people presenting at youth courts in New Zealand may be struggling to understand and participate fully in proceedings. In one study, only half of the young people interviewed about their experiences in the youth court in New Zealand said they understood what was happening (Ministry of Justice, 2011). The other half reported they did not understand, or only understood on some occasions, with one young person saying: “I don’t understand what they are saying … they start talking about something that I don’t even know what they are talking about. I don’t even know what the words are” (Ministry of Justice, 2011, p. 40). This study also found that the young people became disengaged from the court processes as a result of struggling to understand the legal jargon, and overall, the level of their understanding depended on the language used by professionals.

One study has directly examined the experiences and perceptions of young people in youth justice residences in New Zealand (see Chapter 4 of this thesis). The study found that the young people described feeling that they had no control or ‘voice’ in court, or with adults whose roles, or with whom, they were not familiar. The young people also reported that the relationship they had with their communication partner, especially trust and familiarity, was very important to facilitate communication (Lount, Hand, Purdy, & France, 2017). It is worth noting here, that the language skills of these young people were not assessed, and they are likely to represent a range of language abilities.
Communication demands in New Zealand’s Youth Justice System

New Zealand’s Youth Justice System underwent significant changes in response to the introduction of the Children, Young Persons and their Family (CYPF) Act of 1989 (now known as the Children’s and Young People’s Well-being (Oranga Tamariki) Act 1989). The legislation set out in statutory form a comprehensive set of general principles and objectives that govern both State intervention in the lives of children and young people, and management of the youth justice system. The Act adopts a restorative approach that holds the young person accountable and takes into account the needs of victims, but at the same time, constructs responses aiming at rehabilitation and reintegration, and support for the young person’s family (Ministry of Justice, n.d.-b). It also emphasises the provision of culturally-sensitive and appropriate procedures for youth offenders (Morris, 2004). This reform shifted focus away from a penal system towards one emphasising diversion, community-based sanctions, family decision-making, and flexibility (Lynch, 2016). New Zealand’s Youth Justice System has been described as a ‘revolutionary’ system that has set international trends in youth justice as a consequence (Lynch, 2016; Wundersitz, 2000).

There are a number of pathways through the system. The majority of young offenders in New Zealand are dealt with by Police and are given a warning and/or diversion (Becroft, 2014). More serious offending will involve youth court appearances. However, most of the pathways will involve Family Group Conferences (FGCs), where the young person, their family, professionals, and sometimes the victim, meet to plan how to deal with the young person who committed the offence (Lynch, 2016). Because of its restorative focus - which encourages participation by the offender to account for their offending - most of the interactions in New Zealand’s Youth Justice System are orally-based under often very stressful conditions. In such situations, a young person with inadequate communication skills may unknowingly be at a disadvantage, “rather than creating an opportunity for healing to begin for the victim, and social belonging to be strengthened for the perpetrator” (Snow, 2013, p.20).

This is important because the youth justice system has a duty to comply with Sections 10 and 11 of the CYPF Act, which say that the court and counsel must explain the nature of proceedings and
orders in a manner and in language that can be understood by the child or young person, and be satisfied the young person has understood them; they must also encourage participation from the young person in proceedings (New Zealand Government, 1989b). Moreover, addressing the causes of youth offending in section 208(fa) of the CYPF Act cannot be achieved without an understanding of contributing developmental communication disorders and other neurodisabilities.

New Zealand-based research used the findings of Hughes et al.’s (2012) report to examine the consequences of neurodevelopmental disorders in New Zealand’s legal context (Peirse-O’Byrne, 2014). Pierse-O’Byrne’s analysis found that the high rates of neurodisability in young offenders have implications for fitness to stand trial as it is now a potential basis for a finding of unfitness in New Zealand. Peirse-O’Byrne noted that in New Zealand the screening processes and legal programmes do not currently accommodate or meet the needs of young people with neurodisabilities – especially those with communication disorders.

5.1.3 Why do youth offenders’ communication skills matter?

Oral language and other communication skills are relied on in almost all aspects of youth justice. Looking through the lens of restorative justice, Snow and Sanger (2011a) identified the communication demands of youth justice processes on young offenders by reviewing the literature on communication disorders. The communication skills youth offenders are expected to have include: understanding questions posed by restorative meeting co-ordinators, youth justice workers, Police and victims; understanding complex narratives; having real-time responses to questions; having narrative skills to be able to meaningfully and clearly explain their perspective of what happened; having appropriate non-verbal communication, such as eye contact and body language; and, having adequate hearing, and language and auditory processing to understand language when people speak over each other in emotionally-charged environments. Most typically-functioning adults would have difficulty performing these skills adequately when under the pressure of the high-stakes setting of the justice system.

There are also a number of reasons why it is particularly important to understand the communication skills and experiences of these young people in New Zealand. New Zealand’s Youth
Justice System has a strong restorative focus that requires discussions, negotiation and re-telling events to account for offending. Many of the risk factors of New Zealand’s young offenders overlap with risk factors for language disorders, and as mentioned earlier, New Zealand research suggests communication difficulties may be overrepresented in its youth offender population (Lount, Purdy, et al., 2017). These young people have also reported difficulties in participating in aspects of the youth justice system (Lount, Hand, et al., 2017; Ministry of Justice, 2011).

5.1.4 The value of examining experiences in the youth justice setting

Qualitative research offers the opportunity to gather rich information and meaning from the stories of participants that would not otherwise be available through quantitative methods (Creswell, 2013). Interviews also provide access to the context of people’s behaviours and experiences within particular environments, and thereby allow researchers to understand their meaning (Seidman, 2013).

There are some published examples of New Zealand qualitative research that has included the views and experiences of what it is like for some young people going through the youth justice system here (for example, Lount, Hand, et al., 2017; Ministry of Justice, 2011). However, there is less research examining the experiences and views of the range of professionals in New Zealand’s Youth Justice System who work directly with these young people. Views of youth court professionals have been examined in Ministry of Justice (2011) research and a Doctoral research project (Slater, 2009), but they did not include the views of professionals from other youth justice contexts, such as Frontline Police and professionals in youth justice residences.

The ways the different professions encounter the young people could well result in different perspectives on them. In a study of the language skills of young people in a Youth Offending Institute in the UK (Bryan, 2004), staff reported that young people with communication difficulties were less able to verbalise what they wanted and were more likely to become violent because of this. Snow, Bagley and White (2017) interviewed workers in a youth custodial centre in Australia. The workers reported that many of the young people need to be engaged to benefit from interventions, and that it was important to establish rapport, have a collaborative approach, and focus on the young person’s
interests and strengths. These studies provide useful insights into what aspects of communication the young people find challenging, as well as what can help those young people to participate.

The reality of youth justice settings has been described as being different for those directly involved, compared with what is often described by textbooks (R. R. Myers, 2015). Qualitative methods, such as interviews and observation, can tap into this reality, and should therefore be treated as essential data to inform any changes in policy or practice.

New Zealand’s Youth Justice System relies heavily on verbal communication, and states, through the CYPF Act 1989, that the youth offenders’ communication must be supported to ensure they can understand and participate fully in its processes. Therefore, this study aimed to explore the perspectives and views of professionals working in New Zealand’s Youth Justice System in order to understand their experiences, challenges, successes, and needs around communicating with young people in trouble with the law. It was also hoped that exploring these views would help raise awareness of the importance of considering the young people’s communication skills in the youth justice context, especially in those with a restorative focus, where offenders are encouraged and expected to participate.

5.2. Method

5.2.1 Ethics approval

Ethics approval for this research was obtained from the University of Auckland Human Participants Ethics Committee (reference number 010443), New Zealand Police, and the Research Access Committee of the Ministry of Social Development.

5.2.2 Participants and procedure

Twelve youth justice professionals were recruited who represented as many roles as possible that would be encountered by young people in trouble with the law. New Zealand has a number of professional roles and settings that are particular to its youth justice system. For example, when a young person has admitted their crime, follow-up Youth Court hearings may be seen in one of two alternative courts, Rangatahi Court (Ngā Kooti Rangatahi) or Pasifika Court. Rangatahi and Pasifika Courts operate
in the same way as the Youth Court, but are held on marae (a Māori cultural space that includes open space and buildings) and follow Māori cultural processes, or in Pasifika churches or community centres and follow Pasifika cultural processes. New Zealand’s Police have Youth Aid Officers, who deal with young offenders and act as the Police liaison between social workers, youth justice, community groups, and victims and witnesses. They investigate youth files, conduct bail checks and attend family group conferences. In New Zealand, the youth justice facilities that house young people on custodial orders are run by Oranga Tamariki - Ministry for Children (formerly Child, Youth and Family of the Ministry of Social Development). There are four youth justice residences in New Zealand that cater for young people between the ages of 14-17 years. The young people are either subject to a Supervision with Residence Order or sentence, or they are on a remand status (held in custody while they wait for their trial or sentencing). To capture a broad range of views, the professionals in this study were: Youth Court judges (two regular Youth Court Judges and one Rangatahi Court Judge); Youth Advocate (lawyer) (one); Police (two Frontline and two Youth Aid Officers); Youth Justice Residence Social Worker (one); Youth Justice Residence Alcohol and Other Drug Practitioner (AOD) (one); Youth Justice Residence Teacher (one); and, Youth Justice Residence Team Leader (one).

A combination of snowball and convenience purposive sampling was used (Palinkas et al., 2015). The participants were approached via a range of methods. Most were contacted directly via email and/or telephone from recommendations of contacts within the youth justice system and other participants; however, staff from the youth justice residence were invited to contact the lead author if interested in participating after they attended a brief presentation about the research.

Each participant was given written and verbal information about the study and each gave written consent. The interviews ranged in duration from just over 30 minutes to 1 hour 30 minutes. All interviews were conducted face-to-face by the lead author at a quiet location of the participants’ choosing. Participant information was de-identified and all responses were kept confidential. The interview recordings were transcribed verbatim by the first researcher and analysed using NVivo qualitative data analysis software (version 11, 2015, QSR International Pty Ltd).
5.2.3 Data collection and analysis

All interviews were semi-structured and used mostly open-ended questions and a conversational style to encourage more in-depth data of the participants’ perceptions and experiences (Patton, 2015). Because the term ‘communication’ can mean a range of different things, it was defined in the information sheets and at the beginning of the interview as a two-way process, with social elements, but also involving a range of skills, such as expressive language and receptive language (comprehension) skills. The interview protocol can be seen in Appendix 18; the interview schedule focused on four main areas to capture how the youth justice professionals perceive: a) their overall experiences of communicating with the young people they work with in their role; b) how well they think the young people can understand what was being said; c) how well they think the young people can say what they need to; and, d) what they think would help when communicating with those young people. The order of questions varied according to the responses of the participant to allow a more conversational interaction, with prompts used to elicit more information.

A general inductive approach was used to interpret and analyse the interview data, allowing the findings of this research to emerge from content that was frequently occurring either within or across the interviews, or that was emphasised or implied by the participant through the intensity or emotive language the participant used in referring to it (Thomas, 2006). The sample size allowed for both a description of themes across the entire data set, and at the level of the individual, using a combination of latent thematic analysis and comparative analysis. Latent thematic analysis goes beyond the semantic level of the data and looks for the underlying ideas, assumptions and conceptualisations that shape the semantic content of the data (Braun & Clarke, 2006). Comparative analysis analyses the similarities and differences across cases, and makes connections among the themes or categories, in order to test and to develop the categories further (Onwuegbuzie & Combs, 2010). The descriptors all, many or several were used to show the prevalence of the themes, with numerical references used for particular accentuation, as recommended by Braun and Clarke (2006).
Each interview transcript was read multiple times to gain familiarity with the content, identify themes and check for consistency of the coding into overarching themes (Braun & Clarke, 2006). Themes were reviewed by constant comparison and multiple steps of refinement, as suggested by Bazeley (2009); this entailed characterising and describing the theme in relation to other possibilities, and across individuals and contexts, and finally, by relating the themes to others found in the literature. The theme refinement included negative-case analysis (Brodsy, 2008), whereby contradictions or counter-examples between the evidence and themes were examined as to where and how divergences occurred, then any necessary revisions were made to include them either by re-defining the theme or including them as a new theme/sub-theme. This process was repeated by multiple passes through the data until no new instances or contradictions were found. To increase trustworthiness of the analysis, all authors independently, and then at multiple points, collectively reviewed the themes and interpretation, and resolved any discrepancies, to ensure the coding and themes represented an accurate and valid analysis of the data (Starks & Trinidad, 2007).

Verbatim quotations were selected from the interview transcripts to demonstrate the recurring and dominant themes. Discontinuities in the interviews are marked [...] and author additions to clarify meaning are presented within square brackets.

5.2.4 Reflexivity

The first author interviewed the professionals. The interviewer’s background is research in the domain of speech science, with a speech-language therapy-related focus, and relatively minimal exposure to the youth justice-related field.

These factors and the research focus were borne in mind when analysing the professionals’ responses, and each stage of data analysis involved taking a step back and reviewing interpretations to ensure they reflected a true account of the participants’ views and experiences.
5.3. Results

The researcher had described ‘communication’ to the participants, both verbally and in the information sheets about the study, as being about a young person’s skills of comprehension and expression. However, the professionals viewed and talked about communication more broadly in the context of the New Zealand’s Youth Justice System, and about how it related to their youth justice role and responsibilities. This meant they approached the idea of communication difficulties more from outside the young person, whereas the assumption of the researcher had been to approach them starting from within the young person. This fundamental difference in perspective is a significant one to consider when working with this issue in the field.

The professionals described communication as part of a complex interplay of factors, that included fulfilling the objectives of restorative justice (i.e. to include and empower the young person and their family to address the offending, whilst achieving justice for the victim), but in a complex context. They perceived a range of social, cultural and other issues that affected the young person and their ability to communicate effectively. The participants described a range of strategies they used to try to manage these issues and establish a relationship with the young person. They also had suggestions for what would help them communicate more effectively with the young people.

Five major themes relating to communication emerged from the data, as shown in Figure 5. Each included a number of related subthemes. Table 3 shows the number of professionals who contributed to each theme and subtheme.
Figure 5. How youth justice professionals describe communicating with young people (YP) in the youth justice context.
Table 3. Number of professionals in study 3 contributing to each theme and subtheme.

<table>
<thead>
<tr>
<th>Themes/subthemes</th>
<th>Number of contributing participants (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YJ system a foreign environment for YP</td>
<td>12</td>
</tr>
<tr>
<td>legal jargon</td>
<td>8</td>
</tr>
<tr>
<td>environmental constraints</td>
<td>11</td>
</tr>
<tr>
<td>Professional’s role &amp; responsibilities</td>
<td>12</td>
</tr>
<tr>
<td>shapes the nature of interactions</td>
<td>7</td>
</tr>
<tr>
<td>balancing justice/authority with empowerment of YP</td>
<td>10</td>
</tr>
<tr>
<td>attitude of YP</td>
<td>7</td>
</tr>
<tr>
<td>Relationship with YP</td>
<td>12</td>
</tr>
<tr>
<td>power dynamic</td>
<td>8</td>
</tr>
<tr>
<td>YP’s language &amp; culture</td>
<td>11</td>
</tr>
<tr>
<td>rapport/trust/respect</td>
<td>12</td>
</tr>
<tr>
<td>emotions dominate YP</td>
<td>10</td>
</tr>
<tr>
<td>Strategies to overcome communication barriers</td>
<td>12</td>
</tr>
<tr>
<td>working with YP’s abilities &amp; strengths</td>
<td>12</td>
</tr>
<tr>
<td>using what works for the YP</td>
<td>12</td>
</tr>
<tr>
<td>Looking to the future</td>
<td>11</td>
</tr>
<tr>
<td>professional training and education</td>
<td>12</td>
</tr>
<tr>
<td>labelling YP</td>
<td>8</td>
</tr>
</tbody>
</table>

Note. YJ = youth justice; YP = young people/young person.

5.3.1 **Theme 1: Youth justice system is a foreign environment for the young people**

All of the professionals said that communication was made more difficult by how foreign the context was for the young people. The young person had no choice to be there, it was often against their will, had technical and difficult language, unfamiliar people and surroundings, and a formal culture very different to their own.

“Alien environment; a lot of people, well 8 to 10 in the room, plus them; poor family support; the jargon and the language – something we work very hard on. I guess the possible result stresses them: are they going to be in custody, or released with conditions for bail? Being by themselves without their mates there...” – Youth Court Judge A.

The physical context also had an impact. This could be positive (most comments being about the Rangatahi court where it was culturally geared), or negative, as in the youth justice residence.
“It’s the medium in which we take them to, which gets the message across. It’s not necessarily the personalities, but it’s the medium of the marae that seems to have the greatest impact on these young people” – Rangatahi Court Judge.

“It’s a very fluid environment, which probably to most of our kids, is quite an unsafe feeling. So yeah, that impacts on their ability to communicate.” – Residence Team Leader.

“When you’re working with kids one-to-one it’s much more simple, it’s much easier; you’re not worrying about other young people’s needs. But when you’re dealing with eight, twelve kids in a unit - and unfortunately these kids aren’t the best kids around - then you have to work out a compromise.” – Residence Social Worker.

Police Officers highlighted the technical language of the Bill of Rights when delivering a Rights Caution during arrest as a source of difficulty. The young people found it hard to understand, but they also found it difficult to deliver and then establish that the young person has understood. This was seemingly a significant factor for the two Frontline Police Officers, who both referred to it several times in their discussions:

“There is a part of the legislation in the Children and Young Persons and Families Act around the Bill of Rights that says that we have to do it in a manner that they understand. And so we would go through each sentence and read it out and say, “what does that mean to you?” We have to explain their rights to them and it takes a long time, sometimes the Bill of Rights can take 15 minutes to half an hour, just to do that so they understand what their rights are. Where reading it off for an adult would take about a minute. So there’s a big difference in that, and it’s a lot of work, but obviously we need to do it.” – Frontline Police Officer B.

5.3.2 Theme 2: Professional’s role and responsibilities

Unsurprisingly, the professionals perceived that their role and responsibilities in the youth justice system shaped the nature of the interactions and the communication with the young people. For example, the enforcement focus of Police meant the interactions differed markedly from professionals working in the youth justice residences, where the focus is directly on the welfare of the young people.
“I think if they wanted to talk to me, then they’d probably talk to me. But yeah, the whole blue uniform, I think, gives them a bit of a prejudice against us” – Frontline Police Officer A.

“By the time that our sessions are up, and they’re close to leaving the residence, they go “oh, actually I don’t want to do this anymore”. And to me that’s great, because it’s empowered them to make a decision. It’s all around the young people and their goals, is what I work for” – AOD Practitioner.

Inter-agency co-operation was highlighted as important to understand how best to support the young person; this was sometimes highlighted positively:

“We have a social worker in our office that we work with... I always say to them [the young person’s family], you have this opportunity to talk to X about any other concerns you have and she will do her best or direct you to where is best to get those addressed” – Youth Aid Police Officer B.

But in some cases this did not appear to work so well, for example:

“I’ll straight away say “oh, we’ve done a health assessment, this is what our findings were, they should be having a neuropsych, they should be seeing a speech-language therapist, so we need to make sure we’re communicating appropriately”, and then I’ll go and have a look on the ops [operational] plan and it’s not there” – AOD Practitioner.

The requirements of current NZ legislation and policy both came through as positive influences to communication practices. These were in the form of the 1989 CYPF act and the commitment of the Ministry of Justice to restorative justice and reducing recidivism by empowering young people and their families.

“All of that [Youth Court layout and procedure] is a qualitatively-different approach from the adult court. One of the reasons that we take that approach, is that section 10 and 11 of the [CYPF] Act. Section 10 of the Act imposes a mandatory, statutory obligation on the court to explain in a manner and in a language that can be understood by the child or young person, the nature of the proceedings and what’s going on. So, we’ve talked a lot about what is the manner, which is different from what you say, it’s how you say it. Language that can be understood by the young person; that implies
that we know if the young person can understand it or not. So we ought to be spending and committing ourselves to spending a lot of time to check, in terms of comprehension and understanding” – Youth Court Judge A.

Subtheme: Empowering the young person:

Some professionals noted that the positive influence of legislation and policy did not always work out easily on the ground. Many participants described having to strike a balance between empowering the young people enough to participate and engage with them, with maintaining their authority and justice role. For Police Officers and Judges, this balance was especially difficult:

“There was an incident with some of those young people [that we dealt with regularly] out in the public at the train station – other [Frontline] police arrived and were dealing with the situation and the scene, and it was quite heated, when my Youth Aid colleague and I arrived, and the youth saw us, they then they almost took advantage of the freedoms that they had within the visits that we had. And then they stopped listening to the direction of the person who was in charge of the whole situation and scene, and they could have got themselves hurt a little bit because there was a bit of violence brewing, and they could have been sprayed or tasered, or arrested. So we had to say “no, just listen to what’s going on to these guys” and we had to, not distance ourselves, but just say, “look there’s a time and place for behaviours, language, relationships, and you can talk to us, but you need to remember in this sort of situation, that we use this form of communication, or this language. It’s not to say that you can’t still be free”. Do you know what I mean? It sort of almost bit us in the bum a bit!” – Youth Aid Police Officer A.

“We walk a tightrope in court between being appropriately, symbolically formal and also, providing a therapeutic jurisprudential approach, and that’s quite a challenge. It’s a tightrope.” – Youth Court Judge A.

The participants who worked in the youth justice residences had more time to develop a relationship with the young people, which was seen as a key factor helping communication. However, this still had to be negotiated around their role:

It’s the dynamics. Sometimes kids don’t listen because they don’t want to be seen to be giving in - it’s them and us. And you’re always going to have that them and us, the state
versus the poor little boy who’s being oppressed. You’re going to have that them and us mentality and that adds to the thing” – Residence Social Worker.

Many participants mentioned the significance of the young people’s attitudes towards the professional. This was most obvious in relation to hostility towards the Police, which was a significant barrier to communication.

“Hostility towards the police, like family hostility, towards the police. When the families despise police, and we’re there in a completely reasonable sense, trying to help. That can be really frustrating; it can be a real barrier” – Frontline Police Officer B.

5.3.3 Theme 3: Relationship with the young person

Regardless of their role, getting to know the young person was a key factor for all of the professionals for achieving successful communication, connections with the young people and engagement with the youth justice processes. However, most of the professionals acknowledged that there were a number of potential barriers that had to be overcome to establish a relationship.

Subtheme: Power dynamic:

Most professionals acknowledged that communication existed in a context where there is a power dynamic that sees the young people disempowered relative to the professional; this being shaped in part by the nature of authority that the professional had over the young person, but also their class and culture could accentuate this. The effects of this power dynamic appeared greatest for those professionals with more of a law enforcement role, for example one Youth Court Judge mentioned:

“There is both an expectation in a sense, that we shouldn’t dumb down what it [the youth justice system] is, and what it is, is the ultimate coercive power of the state to make a decision about someone who has offended so badly or so regularly that formal intervention is required...I don’t think judges should ever forget that they play a role in the system, and it’s an important role, and it is one at times, to set the rules and deliver the hard messages. The question is, how can those hard messages be conveyed in a way that’s comprehensible? And in a way that they don’t lose their force and effect...”
He also mentioned:

“I work hard to let young people see who I am, understand me, but I think, the communication starts with the perception of me being a grey-haired adult man with utterly different life experiences from them, which is true. That’s what they see to start with…” – Youth Court Judge A.

Once they had negotiated these issues with the young people, the professionals emphasised that the relationship had to be built on trust and respect, developing rapport, becoming familiar with them, and working with their culture.

Subtheme: Trust and respect:

Most of the professionals talked about trust and respect featured as important to facilitate communication with the young people:

“I think we just need to be empathetic, sympathetic, clear of what we’re requiring, honest, you know – don’t fool – I think they see through falseness... We’re police officers, and we have a job, it comes down to more about the relationships. Anything where you both walk away with a mutual respect or an understanding is fine; that can bridge any language.” – Youth Aid Police Officer A.

“When you’re in a marae, everyone is at the same level. Maori concept – everyone has mana – so, respect is a mutual thing that goes backwards and forwards, and even though the young person is an offender, they still are entitled to respect” – Rangatahi Court Judge.

Subtheme: Rapport:

Not all of the professionals felt they had the time to properly develop rapport with the young people. However, many highlighted the importance of establishing a positive connection with the young person from the beginning:

“I’m really passionate about the young people, and being able to hear their voice and what they want. So for me, I will go at it, like my first session might be sometimes about building the rapport and the second session, I might do a little bit more, and then by the time I’ve almost finished with them, it’s like “wow”. You know, we’ve actually got there!” – AOD Practitioner.
“I don’t think it’s very easy for them to say what they want, unless they trust the judge in particular as someone who will listen, that doesn’t happen first time, so first-up appearances often are just getting a little bit of rapport” – Youth Court Judge B.

Subtheme: Familiarity:

Going hand-in-hand with rapport, the professionals reported that familiarity with the young people also helped, whether rapport was established or not:

“A lot of the prevention activities that we do in the Police, that we’ve been tasked to do through senior management makes us go out, and if we see them on the street, we go and talk to them - because we know them now. We go and do checks at their address to make sure that they’re home during bail conditions. So, we end up getting to know them a lot more than when I first started.” – Frontline Police Officer B.

“I think that certainly the majority of young people when I first start working with them – I have to go through that process, but then what the young people do, is they will quickly adapt to my style of communicating with them. So that they will know that when I say certain things, that I mean it and that they understand me and they’ve learnt” – Residence Team Leader.

Subtheme: Working with the young person’s culture:

The importance of acknowledging and working with the young person’s culture was highlighted by many (n = 9) of the professionals to facilitate understanding and communication:

“In the Rangatahi court, I speak to them about Māori concepts and ways of thinking and communicating, which I would not do in the youth court as a general rule, because it’s not so relevant I don’t think. So that’s how I guess I communicate with the young people” – Rangatahi Court Judge.

“Obviously I can’t understand a lot of what they say because of the slang and the street talk, and the language and the culture and all that, but it’s around recognising that it’s a barrier; so my staff who are Māori and Pacific Island predominantly, they will build that initial rapport and safety for the young people and that’ll allow me to come in and work with them.” – Residence Team Leader.

“I think what’s striking about going to either Pasifika or the Rangatahi courts, is that it’s the adaptations the families make to their comfort zone – the families actually say a
lot more in those environments. So sometimes it’s not even the young people, but it’s the families. But the young people get something out of it as well.” – Youth Advocate.

In the situation of the Rangatahi Court, the cultural connections facilitated communication and had clear positive effects on the outcomes for the young person, in the opinion of the judge:

“The tangible result is the reduced level of offending, as opposed to mainstream. There must be something happening in the marae that doesn’t happen in the mainstream, and it’s got nothing to do with me, necessarily, or the people concerned – because we’re all the same people. I sit in the main court, I wear the gown, it’s the same Policeman, same Child, Youth and Family professionals – all the same people, but it seems when we go into that venue, it’s different, and it’s these things that we share and do there, which are quite different from the main setting” – Rangatahi Court Judge.

Subtheme: Young people bring their own challenges to establish effective communication:

The professionals saw young people as often dominated by their emotions:

“They express it in their emotions – anger, violence, upset, sadness – all those things seem to come out with them. And, so they can be difficult. So it can be hard trying to get across to a young person who wants to go home, the reasons they can’t go home, because they don’t want to listen with all those emotions taking control. So, again, that’s difficult” – Rangatahi Court Judge.

“They’re more in the emotional centre – if something upsets them, they’ll explode or they’ll withdraw or they’ll do something – that’s why they’re here a lot of them, because they do things that are considered to be out of the norm, therefore antisocial” – Residence Teacher.

The participants often mentioned that this group of young people had complex conditions, both individual and environmental, and that this complexity had an unspecified impact on communication. This was highlighted particularly by two of the judges:

“It’s a double challenge: youth plus very complex – the most disadvantaged, the most dysfunctional in a sense, the most disabled young people in the country” – Youth Court Judge A.

“There’s the small portion who then are either facing charges too serious or they’re repeatedly offending and end up on orders... That group are probably the most
challenging to work with and I suspect in part, because a large number have communication or other difficulties” – Youth Court Judge B.

5.3.4 Theme 4: Strategies to overcome communication barriers

All of the participants highlighted various strategies they use when talking with the young people. Mostly these centred on getting to know the young person to understand their strengths, work with those, and adapt difficult situations and language to facilitate understanding. All of the professionals showed a commitment to trying to establish effective communication with the young people.

Subtheme: Working out the young person’s communication skills and strengths:

Many of the professionals highlighted various ways they used to gauge the young person’s language proficiency. Some of the professionals had clear methods:

“I often get the young person to explain – I often say “what charge do you face?”, and “what actually happened? You tell me”. You can very quickly start to get from that, do they understand the question? And what’s going on” – Youth Court Judge B.

Other professionals used more general observation of the young people’s communication:

“I think they sort of, they erratically jump, from place to place, and you take a statement from 4 people that did one thing and it’ll be all over the place. You don’t know what’s actually happened until you get all 4 together and go “oh hang on a minute, I see”, and then it makes sense. So they tend to jump and forget things and stuff” – Frontline Police Officer B.

Subtheme 2: Using what works for the young person:

All of the participants acknowledged that many of the young people tend to struggle with the language in youth justice settings. Most of the professionals talked about combating this by adapting their style of language, either by simplifying or trying to use some of the young people’s phrases and vernacular:
“I find their language skills - I’m not an expert in language - but I find that they’re quite different and you’ve got to be very brief and short. You can’t give them a whole string of things. You have to break it all down for them” – AOD Practitioner.

“I look at the [Police forensic] interview DVDs once we get them, and just see if we can critique and assist in up-skilling our staff. And some of that involves simplifying language” – Youth Aid Police Officer A.

“I think it’s a matter of taking time, keeping your language simple and I have a whole mantra about the “no question is stupid”, which I repeat reasonably regularly” – Youth Advocate.

“A lot of the language we use is street slang that they understand, and we try and utilise that” – Frontline Police Officer A.

All of the professionals also highlighted techniques they used, or that were available, that played to the strengths of the young people. This could include giving the young person a choice about how they communicate, such as by writing or drawing it, or by managing the environment. The professions who saw a young person more regularly, such as Residence staff, the AOD Practitioner, or Police Youth Aid, mentioned more strategies that allowed the young person some choice in how and when to respond, to utilise their strengths:

“I just tend to give them a piece of paper and a pen, or some felt-tips and say “Can you try and put it down on the paper? Can you draw it somehow?”. Even, “can you rap it?” whatever way, just try and find out what they like to do. Because a lot of the young people like to sing and rap and write their own music” – AOD Practitioner.

“Some of these kids are very, very vocal learners, they talk to think. And because they talk to think, they don’t fit into a normal classroom. “Be quiet”, you know “people are concentrating”, but these kids often talk to think, they’ll talk out loud and you have to be careful not to take that personally. They’re thinking it out to be able to do it. I’ll say, “are you thinking out loud again?”, “oh yeah, I am”” – Residence Teacher.

For the professionals where contact time was more limited, the focus tended to be more on the direct environment for the young person:
“Isolate them, every time we try and isolate them. In a crowd they’re always worse to communicate with” – Frontline Police Officer A.

“Youth Court differs [from adult courts] in many aspects. One is layout. So court furniture is laid out in a horse-shoe or semi-circle, rather than in rows like the Old Bailey in England” – Youth Court Judge A.

5.3.5 Theme 5: Looking to the future

Subtheme: A need and desire for education and training for youth justice professionals:

All of the professionals expressed a desire for more training in communication. Many reflected on their own skills and those of other professionals in the same role, and either mentioned specifically, or suggested, that they struggled sometimes to communicate effectively with the young people. These feelings spanned residence-based professionals, court-based professionals and the Police:

“Sometimes, I do get stuck, I’m not sure what they’re trying to say, and that’s challenging because I want to hear them. But, I’ve had young people in the past that, they just get frustrated with me because I can’t, I don’t get it – I don’t understand what they saying, but yeah, I’m not sure if they’re able to tell me, or if they’re willing to” – AOD Practitioner.

“We [Judges] all come with the lens of looking at the judicial system through the adult court, and that’s our baggage as well, that’s our biggest limitation. We are constrained by our predominant experience of the adult court and I often think, if we had a sick child and went to a doctor that said: “well, to be honest, I’m not really a paediatrician at all. I am an adult doctor, that’s my specialty, but I do a bit – about 10 to 15% of my time, and I’ll do my best for you” – you’d be thinking “could I go somewhere else?” So I am keenly aware that we don’t have enough specialists in the youth court” – Youth Court Judge A.

“You do anything as much as you can to try and get them to understand but there have been times where I know a young person hasn’t got it, and I’ve tried to explain it to them as much as possible, I’ve been doing about 40 minutes of it or something, we’d end up going to the home address or having mum or dad come in and explain it again to them. So it means that they can explain it in their language or maybe they can interpret it a bit different and explain it to them as well. So it’s frustrating sometimes, because it’s difficult to understand” – Frontline Police Officer.
Many of the professionals mentioned specifically that they would appreciate additional training or specific guidance on how to speak to the young people more effectively:

“I think if we did some formal training around the teenage brain, I think that would start the lesson towards communication, about how to communicate with them” – Frontline Police Officer B.

“I know for myself, professionally, I would love to do more training around communication…then I can do the best I can. I don’t know of that would make a difference. The floor staff I would say, would need training, and probably quite intense training, because they’re with them 24/7” - AOD Practitioner.

Subtheme: Changes to youth justice processes:

Many of the professionals mentioned other changes they would like to see happen that they felt could really help the young people with communication. These included general changes they thought may help the young people to participate fully in youth justice processes:

“My view is that all Māori young people should go to a Rangatahi court, unless there’s a reason why not, or Pasifika. In fact all kids should actually be dealt with in a community-based setting” – Youth Advocate.

“I think to have adequate supports and services available to cater for all of the young people in this category, that’ll require political change because we’re talking funding at a level and supports and services at a level that will require funding and organisation and that sort of thing. I think we’ll get there but just not as fast as we should.” – Youth Court Judge B.

Other factors related to information sharing within or between agencies, for example:

“We have kids that we do health assessments in the community, we’re thinking FASD [foetal alcohol spectrum disorder], where speech-language therapy is the next thing we’re recommending, and they’ll come into the residence and at the multi-agency meeting, I’ll straight away say “oh, we’ve done a health assessment, this is what our findings were, they should be having a neuropsych, they should be seeing a speech-language therapist, so we need to make sure we’re communicating appropriately”, and then I’ll go and have a look on the ops [operation] plan and it’s not there” – AOD Practitioner.
“We have a social worker in our office that we work with on these alternative action plans...they sort out other stuff that the family may have going on, that they may not talk to me about as a police officer” - Frontline Police Officer B.

Only one professional highlighted speech-language therapy for young people they felt had difficulties with communication. This highlighted how little the profession or its use may be known among this group:

Interviewer: So what would you like to see changed, if you could, to make it easier for the young people who struggle to communicate in the youth justice system?

AOD Practitioner: I think access to speech-language therapists. Heaps of them! I think that would be really useful.

Subtheme: Issues around labelling the young person:

Many of the professionals acknowledged that these young people tended to have difficulties communicating, but there were mixed feelings around labelling young people as having a language impairment. A professional would acknowledge the young people’s communication difficulties and the need to address their communication difficulties on the one hand, but then later comment on the potential negative effects of diagnosing the young person as language impaired. This was particularly evident with the professionals who worked at the youth justice residences. They mentioned it may stigmatise and have negative effects on young people who they felt already have many labels:

“Somewhere along the line, the base of building blocks, they haven’t got them. They’ve missed out, particularly in language development. But I just hear too many labels being put on them without actually...well, are we actually looking into this and why this might be?” – Residence Social Worker.

“You’ve got to accept the way they’re communicating. Whether it’s good, bad or indifferently, that’s my view. And these young people come from a world where they do communicate very differently. Not just culturally, but in terms of the way that they get their needs met. So I think the first thing, it’s about saying: right, this is what we’ve got and this is what we’re going to work with, and to not belittle or shame them because they struggle to use language, or because they struggle to speak up. All that’s going to do is add to their anxieties that they’ve already got” – Residence Team Leader.
Other professionals emphasised that the young people may struggle with language or other assessments, but they felt this reflected differences in experiences and knowledge, not necessarily an impairment:

“They call them IQ tests? I don’t know. They score very poorly, which is not surprising. But, our kids have street smarts. If you ask them to go and do any number of stealing cars and breaking into this and that and the other. Not that that is a measure of IQ, but they are not dumb” – Youth Aid Police Officer B.

“We have to be very careful that we don’t label these students as linguistically impaired. Because I don’t think they are, they are linguistically different and they haven’t learnt a lot of the structures that we expect within higher learning, but I think that comes out of their background, I think it comes out of the way they think – emotionally” – Residence Teacher.

5.4. Discussion

The professionals in this study described communication as being one part of a complex interplay of factors in the youth justice setting. Fulfilling the objectives of restorative justice and the responsibilities of their role is taking place in a context where there is a range of social, cultural and other issues that affect how well the young person can communicate.

One of the main factors the professionals identified was that the youth justice environment is a difficult and foreign setting for the young people, not only in terms of more formal language, but also the cultural and physical context in which the young people must communicate. A number of studies have shown that young people in trouble with the law have difficulties with the language used in court settings. A qualitative study from the UK that examined youth offenders’ perceptions of advocacy during court proceedings found that most of the young people interviewed said they had difficulty understanding the words in court. One was quoted as saying “some of the words were too posh, adults might get the words but to teenagers like me it was all like long words and that” (Wigzell et al., 2015, p.48). These authors noted that the formal nature of the court was identified as a significant barrier for all the participants’ capacity to understand and engage in court processes. A New Zealand study found
similar results when interviewing young people and their families about their general experiences in youth court: “they use like real big words sometimes and I don’t know what they mean” (Ministry of Justice, 2011, p.43) This was also a notable finding of recent research that examined the young people’s perspectives of communicating in New Zealand’s Youth Justice System (Lount, Hand, et al., 2017). The majority of the young people reported difficulties in understanding the words in court, as well as the broader, macro-level understanding of courtroom events. This, in turn, contributed to them feeling powerless.

The Police Officers in the current study also mentioned difficulties with legal jargon in relation to the Bill of Rights, and reading Rights Cautions during arrest to young people. The CYPF Act explicitly recognises the vulnerable nature of children and young people during police questioning and interviews (New Zealand Government, 1989b). Consequently, there is comprehensive guidance on how Rights Cautions are delivered to young people during arrest. Following this guidance and explaining the technical language to young people was seemingly a significant factor for the Frontline Police Officers, who referred to it several times in their discussions. Although not directly comparable, some US-based research has illustrated the difficulties young adults with DLD may have with understanding the language of the Miranda Rights (the US-equivalent of New Zealand’s Rights Cautions) (Rost & McGregor, 2012). This research showed that individuals with DLD performed significantly more poorly than their non-DLD peers in defining the vocabulary of the Miranda Rights, and in applying these rights to hypothetical situations. It is worth noting that all of the participants in that study were high-achieving University attendees, which means that young people who have low educational achievement and poor oral language skills, are even less likely to understand these issues of rights. Therefore young people in the youth justice system in New Zealand are also likely to have difficulty with the Rights Cautions, and the Police Officers in the present research have pointed to this probability.

The professionals in this study noted that the physical environment could also have an effect on how well the interactions went with the young people. For those based in the courts, the Rangatahi Court was highlighted as particularly positive. The move towards creating Rangatahi Courts began in response
to the continual over-representation of young Māori in offending statistics with the purpose of re-connecting young Māori with their cultural identity (Taumaunu & Waititi, 2014). Rangatahi Courts apply the same laws, but incorporate Te Reo Māori (Māori language) and tikanga Māori (Māori protocol) in the setting of the marae (traditional Māori meeting place). The young person must learn a pepeha (a self-introduction) and a mihi (a greeting in the Māori language). There has been criticism that incorporating Māori cultural practices into the legal setting is tokenism that conforms those practices to Pākeha (New Zealand European) legal principles (Tauri, 2014; Vieille, 2012). This includes standardisation of restorative justice-related “cultural” processes, which has led to delivery based on Eurocentric notions of “best practice” for responding to social harm (Tauri, 2009). This is a critique which needs paying attention to, and it must be acknowledged that the vast majority (but not all) of the professionals who participated in this study were NZ European, which may increase the chances that cultural practices they follow could be tokenistic. But despite these caveats, research has shown positive benefits of the Rangatahi Courts on outcomes and participation of both the Māori young people and their families (Becroft, 2014; Davies et al., 2012; Maxwell & Morris, 1993; Taumaunu & Waititi, 2014). In the current study, professionals who had experience with Rangatahi Courts emphasised the positive effects this setting had on the young person’s participation. Moreover, most of the professionals highlighted that culture was a significant factor in the success of communication with the young person. They acknowledged that successful communication was most likely where professionals’ cultural understanding or ethnicity aligned with those of the young person. This was voiced by the young people interviewed in recent research, where half of the participants specifically mentioned that a common cultural understanding or background made it easier to communicate (Lount, Hand, et al., 2017). This was also echoed by young people interviewed as part of a submission to New Zealand’s Youth Crime Action Plan (Office of the Children’s Commissioner & JustSpeak, 2012). This research (which collected the views of 97 young people from two youth justice residences and two community youth-support

---

1 The ethnicity of the participants was not collected, so there are no exact figures.
groups) reported that the young people talked “a great deal” about the importance of ethnicity and
gender matching for making it easier to relate to people and professionals.

The professionals in this study also talked about their role and professional responsibilities as
shaping the nature of the interactions and communication they had with the young people. All of the
professionals reported strategies that they felt helped communication, but they noted some challenges
to overcome. For some, such as Frontline Police Officers and youth court-based professionals,
interactions were described as generally short, which allowed minimal time to establish rapport and
trust with the young people - despite the fact that this was acknowledged as a key facilitating factor for
communication. For others, working in the environment of the youth justice residence also dictated how
they could interact with the young people, sometimes having to compromise on the needs of the group
over the individual. While these findings are in some ways self-evident, they uncover issues that the
professionals themselves acknowledge as creating difficulties for successful communication, and these
should be borne in mind when considering ways to improve communication with the young people. The
importance of establishing rapport, and a relationship built on trust and respect have been highlighted
both by young people (Lount, Hand, et al., 2017; Ministry of Social Development, 2015b; Office of the
Children’s Commissioner & JustSpeak, 2012) and by youth justice professionals (Cleland, 2012;
Ministry of Justice, 2011; Ministry of Social Development, 2015b) This opinion was irrespective of
the role of the professional, and was a key theme for the professionals in the current study also.

The professionals also raised a number of less obvious issues that could affect their
communication with young people. These included balancing the requirements of applying justice and
their authority role with empowering the young person, overcoming the power dynamic between their
role and the young person, and factors relating to the young people, including their attitude and
emotions.

Empowerment of the young person and the family is a fundamental aspect of New Zealand’s
Youth Justice System. However, in practice, many of the youth justice professionals in this study
appeared to be in conflict about how best to balance this with the authority and power dynamic existing
between themselves and the young people that came with their roles. The difficulties in striking this balance have been well recognised both in general (for example, Lynch, 2016; Maxwell & Morris, 1993), and specifically in relation to Māori participants (Davies et al., 2012; JustSpeak, 2012; Vieille, 2012). Empowerment in this system is described as when offenders take responsibility for their actions through discussions between the offender, their family, and the victim, to decide on how to make amends, which is intended to allow the victim to regain control of their lives (Maxwell, Kingi, Robertson, Morris, & Cunningham, 2004). Communication is necessarily central to this process to negotiate these outcomes between the young person, their family, youth justice professionals and the victims. Reports and research examining effective outcomes for the young people outline the importance of communication (Cleland, 2012; Maxwell et al., 2004; Ministry of Justice, 2011; Ministry of Social Development, 2012b, 2015b). These works are referring more to the general concept of conversational engagement between these parties, rather than communication skills; however, for these outcomes to be achieved, the communication skills and strategies for managing breakdowns in communication of all involved become relevant. Therefore, it is especially important to assess the status of the young person’s communication skills, and ensure the youth justice professionals have the tools to aid the young person’s communication where breakdowns occur. This will require professional upskilling and training that the participants in this study all mentioned was a key factor in order to improve communication success in the future. This may then overcome the feelings of powerlessness that have been reported by the young people (Lount, Hand, et al., 2017; Ministry of Justice, 2011) and their families (Ministry of Justice, 2011; Ministry of Social Development, 2012b, 2015b). Most of the professionals in this study reported that relationships with the young people could be compromised by, and existed in the presence of, a power imbalance resulting from the inherent authority of their profession (for example, the Police and Youth Court Judges). Power dynamics and perceived inequalities have the potential to contribute to a sense of powerlessness (Gavrielides, 2014; Lyubansky & Shpungin, 2016). These may arise when variables such as race, gender, age, and socioeconomic status interact to create explicit and implicit biases towards someone; for example, poorly-defined roles of
victims, offenders, gatekeepers, and facilitators can contribute to an imbalance by creating uncertainty about levels of participation of some groups (Lyubansky & Shpungin, 2016). In this present study, the professionals referred to the power imbalance as increasing the difficulties of establishing a relationship with the young people. A justice system by its very nature however must have authority positions. Lyubansky and Shpungin (2016) suggested that, for restorative justice processes, several practices may help this issue, including cultural competence education for facilitators and professionals, inclusion of community members and youth as facilitators and process co-creators, and attention to facilitation that empowers participants to do their own restorative work. Thus, improving or supporting the communication of both the young people and the youth justice professionals may go some way to overcome the power imbalance that can exist between youth justice professionals and the young people, their families and the victim in situations such as the Family Group Conference.

Professionals working in the youth justice residence setting also referred to striking this balance between their authority roles and establishing relationships with each young person; this was particularly difficult when they had to compromise the needs of an individual young person, with those of the group. These professionals also expressed the desire for additional training to help with such situations. New Zealand’s youth justice residences may provide an ideal opportunity to deliver training for the residence staff and pilot trials of speech-language therapy for the young people. In the UK, there are a range of initiatives to support and up-skill professionals working with vulnerable groups, such as youth offenders (The Communication Trust, n.d.). For example, these may include workshops on how to identify communication barriers, simplify words, sentences and questions, and developing awareness of nonverbal communication and listening skills etc. (Sentence Trouble, n.d.). A similar initiative has recently begun in New Zealand (Talking Trouble Aoteroa New Zealand, n.d.). There is some research which shows the benefits of speech-language therapy are appreciated by both the young people receiving the intervention and the professionals in such settings. For example, Burrows, Yiga and Heneker (2012) and Gregory and Bryan (2011) in the UK both reported promising improvements in communication skills in young people in the youth justice context who received speech-language
therapy, especially where intervention was individualised and tailored to their needs. Snow and Woodward (2017) reported on a pilot trial that delivered one-on-one speech-language therapy tailored to the assessment-based needs of six incarcerated young males in an Australian Juvenile Justice Detention Centre. The young people showed improvements in communication skills, engaged with the intervention, and could appreciate its benefits. Youth justice professionals working with the young people who had received speech-language therapy expressed overwhelming support for the inclusion of such services in a recent, Australian-based qualitative study (Snow et al., 2017) and in UK-based research (Bryan & Gregory, 2013).

The professionals in the current study could see clearly that difficulties existed when referring to the communication skills of the young people, but they found it difficult to characterise these. They most often talked about the young people being led by their emotions and responding with frustration when communication became difficult. Getting frustrated and responding aggressively as a result of communication breakdowns was reported by the young people themselves in some qualitative research (for example, Hopkins, Clegg, & Stackhouse, 2016; Sanger, Coufal, Scheffler, & Searcey, 2003). A recent study from Australia demonstrated that, in addition to an over-representation of language difficulties, youth offenders may also be more likely to have alexithymia, which is characterised by difficulty identifying and describing subjective feelings and distinguishing between feelings and the bodily sensations of emotional arousal, reduced imaginal capacities, and an externally oriented cognitive style (Snow et al., 2016). Previous research has documented high rates of alexithymia in young male offenders (Zimmermann, 2006), high-risk adolescents (Pihet, Combremont, Suter, & Stephan, 2012), and adolescents with severe disruptive behaviour (Manninen et al., 2011). Snow et al.’s study found that 59% of their sample of 100 young people serving custodial sentences fulfilled their criteria for this diagnosis. The researchers say that this is significant because “difficulty identifying, labelling and discussing emotions, (their own and those of others) would be expected to hinder engagement in verbally-mediated psychological therapies and restorative-justice interventions” (Snow
et al., 2016, p. 22). Therefore, targeting these difficulties in therapy would help overcome a barrier for effective communication that the professionals in this study reported as significant.

Another significant issue that arose from the professionals’ discussions was the consequences of labelling young people as language impaired. Many of the professionals (mostly those working in the youth justice residences) expressed concerns that assessing and labelling the young people may be stigmatising. Some of these professionals also felt that the young people’s language skills were not necessarily impaired, but simply different due to their backgrounds, culture and upbringing. This is a legitimate concern. UK-based qualitative research of young people in youth justice and education settings found that these young people generally viewed assessments negatively, and as another way to increase surveillance of their actions and introduce new means of control (Ellis & France, 2012). Furthermore, most of the participants tended not to understand the exact nature of, or reasons for undergoing the assessments, which exacerbated this sense of intrusiveness. There is also some evidence suggesting that young people who feel stigmatised or shamed by youth justice processes may be more likely to reoffend (McGrath, 2009). Although screening and assessing the young people’s communication skills will be essential to establishing the presence and nature of communication disorders, it is worth bearing these effects in mind for this population.

5.4.1 Limitations

This research included the views of one or two individuals from each of a broad range of youth justice roles. Therefore, the views outlined in this thesis represent a snapshot of professional’s experiences, and may not represent all. However, generalisability of results is arguably less of a focus in qualitative research (M. Myers, 2000).

The method of recruitment may have influenced the type or characteristics of the professionals who agreed to participate. For instance, most of the professionals were contacted by referral from contacts in the youth justice sector, which may have biased the sample towards those who were more notable or highly experienced within their field. Furthermore, those working at the youth justice residence who chose to respond after the information session may have been more motivated workers.
Other professionals, such as Youth Justice Co-ordinators and Youth Forensic Mental Health workers, could not be recruited in the study timeframe. Future research should include these professions, as they are also likely to hold valuable information about communication with young people in youth justice settings.

5.4.2 Implications and future directions

Providing role-specific training on how to simplify complex language and jargon would be a simple, logical step. The young people in our earlier research (see Chapter 4; Lount, Hand, et al., 2017) and those interviewed by the Office of the Children’s Commissioner and JustSpeak (2012) noted that it was the nature of the relationship with the individual person, not their role, which made interactions easier. Training on communication strategies would help support and strengthen these relationships (Sentence Trouble, n.d.; Talking Trouble Aoteroa New Zealand, n.d.).

Establishing communication or court intermediaries, as is available in parts of the UK, may also be a valuable change that could be adopted in New Zealand. New Zealand has Lay Advocates available to support those going through the system; however, their focus has generally been on cultural aspects and needs of the people involved (Becroft, 2015). The UK court intermediary’s role is to support and assist the two-way delivery of information between children, young people or vulnerable adults, and the professionals involved during the investigation and trial stages of the justice processes (Plotnikoff & Woolfson, 2015). Registered Intermediaries tend to come from professional backgrounds in areas such as speech and language therapy, nursing, occupational therapy, education, or psychology. They are available to assist Police Officers interviewing vulnerable witnesses, and in all cases, the intermediary completes a comprehensive assessment of the individual's communication needs and makes recommendations in a written report regarding how the person should be questioned. This system has shown positive results in the UK (Plotnikoff & Woolfson, 2015). A New Zealand-based study has assessed the viability of introducing such a role into New Zealand’s legal system, but with a focus on assisting child witnesses (Hanna, Davies, Henderson, & Hand, 2013). Three intermediary models were assessed through mock-interview scenarios of pre-recorded hearings: a full-intermediary model (using
a qualified forensic interviewer as the intermediary), a question-by-question model and a topic-by-topic model (both using a speech-language therapist as the intermediary). Follow-up, semi-structured interviews were conducted to gauge the participants’ perceptions of the process. For all models, the involvement of independent, neutral, language specialists as intermediaries was viewed as a positive addition for improving the quality of the child’s testimony and the child’s experience of court. The topic-by-topic model was generally perceived as the model most likely to be effective, but with some limitations. Overall, the participants felt an intermediary would be a positive step and warranted further exploration. As a result of the discussions, the researchers suggested that New Zealand should explore, among other things, developing training programmes for Judiciary and Counsel on communicating with children, develop a Working Group to explore how an intermediary role may be implemented in New Zealand’s legal system. Work has recently begun to address these points (Talking Trouble Aoteroa New Zealand, n.d.). A Working Group has recently been established, and communication assistants are now working in New Zealand courts on a case-by-case basis. An Australian-based qualitative study also examined the views on introducing an intermediary system by interviewing key stakeholders in the justice system (Powell, Bowden, & Mattison, 2015). In this case, the professionals were open-minded about changes that could improve the participation for children and young people, but were generally less supportive than the professionals in the New Zealand-based study, citing the additional complications it may add to their system. Intermediary schemes have been introduced in a range of countries, including England and Wales (Youth Justice and Criminal Evidence Act, (1999), Israel (Law of Evidence Revision Act, (1977), South Africa (Criminal Procedure Act, (1977) and a number of Scandinavian countries (Myklebust, 2012). Given the range of models available to borrow ideas from, the willingness of the professionals interviewed according to the New Zealand-based study, and the vulnerable nature of children and young people’s language skills in the justice setting, trialling a version of the intermediary system in youth justice should be considered.

This study showed that the youth justice professionals acknowledge that the youth justice system is a difficult and foreign setting for the young people, not only in terms of more formal language, but
also the cultural and physical context in which the young people must communicate. Future research should expand on these findings. This could include examining the views of more youth justice professionals of how best to support the communication skills of the young people in the current context, as well as gauging their opinions of an intermediary system that supports young offenders. Another valuable focus for future research could be the views of the young people’s families or carers, and other professionals who work with young offenders in the community setting pre- and post-justice, such as social workers, youth-focused services and education providers. Supporting the communication skills of youth offenders will require the endorsement and engagement of all those who work with and deal with those young people to achieve the most relevant and beneficial long-term outcomes for this vulnerable group.
Chapter 6. Discussion

This final chapter will summarise the major findings presented in this doctoral thesis, describe their implications for practice within the clinical speech-language therapy context and the youth justice context, and suggest directions for possible future practice and research.

6.1. Summary of findings

6.1.1 Review of communication skills and the youth justice system

Chapter 2 explored some of the factors that can affect hearing, auditory processing and language development. It also looked at how those factors relate to at-risk youth and the youth offender population. Finally, this chapter also described New Zealand’s Youth Justice System and highlighted the demands the system makes on the young people’s communication skills.

The review showed that acquisition of these communication skills is grounded within the quality of the child’s developmental environment and caregiver-child interactions during development, and it is also influenced by factors related to socioeconomic status (SES). The review also revealed that many of the risk factors for communication disorders overlap with the risk factors for youth offending. This chapter also illustrated that most of the processes of New Zealand’s Youth Justice System place significant demands on the communication skills of the young people (for example, during discussions in Family Group Conferences, often with the victim and a range of other professionals present). On account of these demands, it was suggested that young people in New Zealand with communication difficulties would be likely to struggle to participate fully in many of the youth justice processes.

6.1.2 Hearing, auditory processing and language skills of male youth offenders

The study presented in chapter 3 sought to compare the hearing, auditory processing, and receptive and expressive language between New Zealand-based male youth offenders and remandees in two youth justice residences, compared with a group of New Zealand high school students. This study also aimed to determine whether differences in these measures vary according to nonverbal IQ.
The results showed, for the first time in the New Zealand setting, that there were significant differences in the hearing, auditory processing and language skills between young males at youth justice residences and a group of similarly-aged male high school students. Additionally, although nonverbal IQ was significantly lower in the youth-offender group, further analysis revealed that this was not adequate to explain the significantly poorer scores for the hearing, auditory processing or language tests.

The youth offenders and remandees in this study were over seven times more likely than the controls to have some form of hearing loss in one or both ears, and nearly five times more youth offenders than controls with normal average hearing thresholds exhibited hearing loss at one or more of the tested frequencies. This higher rate of hearing impairment is consistent with the findings of the US-based study of youth offenders (Holmes et al., 1996), and New Zealand- and US-based studies of adult inmates (e.g. Bowers, 1986; Jacobson et al., 1989; McRandle & Goldstein, 1986). Furthermore, around 9% of youth offenders and remandees displayed significant middle-ear pathology (Type B tympanograms) - more than twice that of the controls (4%), three-to-four times that found in 11-year-olds in the New Zealand-based Dunedin Longitudinal Study (2-3%; Chalmers, Stewart, Silva, & Mulvena, 1989), but similar to the 8-9% found in the Pacific Islands Families Study (Purdy et al., 2012). Type B tympanograms are often associated with low-frequency hearing loss (J. W. Hall & Schwanepoel, 2010), and in this study, nine of the twelve youth offenders and remandees with hearing loss had hearing loss in the lower frequencies, and seven of these had an abnormal tympanogram result. Taken together, these results suggest that there must be more comprehensive hearing screening in the youth justice residences in New Zealand; the poor ear-health and hearing results in this study were found in a group of young people who had already been screened by the residence health team.

The study also showed that the percentage of the youth offender and remandee group identified with auditory processing disorder (APD) was higher than that seen in the control group (9 [27%] vs 7 [18%]). The figure for the controls (18%) is higher than might be expected in the general population; current estimates are that around 2-3% of children have APD (Chermak & Musiek, 1997), and a recent prevalence estimate for New Zealand (adjusted for ethnicity) produced a figure of 6.2% (Esplin &
Wright, 2014). However, the control group had a higher proportion of Māori and Pacific young people (46%) than the general New Zealand population (22%; Statistics New Zealand, 2013), and these groups have more risk factors (e.g., middle ear disease) for developing hearing and auditory processing difficulties. The youth offenders and remandees in this study had particular difficulty with two of the four auditory processing tasks (*FD* and *FPT*). Difficulties with temporal processing tasks, such as the *FPT*, have been found after periods of auditory deprivation, as happens with otitis media infections (Buran et al., 2014; Mowery et al., 2014; Polley et al., 2013), and difficulties with *FD* tasks have been found in individuals with developmental language disorder (DLD; McArthur & Bishop, 2004). This finding is supported by the higher proportion of youth offenders than controls having Type B tympanograms suggestive of middle-ear problems, and more difficulties with the language tasks.

The standardised language assessment (*CELF-4*) showed that language was an area of significant difficulty for the youth offender and remandee group, especially those of Māori or Pacific ethnicity. Sixty-four percent of the youth offenders and remandees, and only 10% of the controls fulfilled this study’s criteria for DLD. On average, the youth offender and remandee group’s *CELF-4* Core Language and Expressive Language Scores were significantly worse than the controls, being around 1.5 SDs below the normative mean of 100 – a level often described as the lower boundary of typical development. Using the *CELF-4* language disorder classification, the 58% of the youth offenders and remandees with scores below -1.5 SD could be described as having a moderate to severe language disorder, compared with only 8% of the controls (Semel et al., 2006). Indeed, 87% of the youth offender and remandee group had scores below 100, indicating the normal curve of this group is shifted significantly downward compared to their peers.

An interesting finding in this study was that the overlap of DLD and APD appear to differ between the two groups (presented in Figure 3). Language difficulties dominated the youth offender and remandee group and the overlap with APD is greater than that of the control group. There were nine youth offenders and remandees with APD, but only one with APD alone; the other eight had both APD and DLD. In contrast, of the seven controls with APD, only two had both APD and DLD. The smaller
overlap in the control group of the current study may be a result of their receiving regular schooling and possibly having a more language-rich, and learning-supportive home environment. It is also worth noting that the control participants with APD still had significantly lower CELF-4 Core Language, Expressive and Word Classes Receptive scores than those without APD. The fact that this same pattern of difficulties is present in the two groups seems to support the idea that protective factors may be at play in the control group that have helped ameliorate their language difficulties, something that has not happened for the youth offenders and remandees.

This study also looked at whether the assessment results varied according to nonverbal IQ. Nonverbal IQ test scores were significantly lower in the youth offender and remandee group than the control group in this study, and while it may be tempting to conclude that the language difficulties might be accounted for by this lower IQ, there are a number of factors that argue against this. First, the mean and median nonverbal IQ scores for the youth offender and remandee group were both within the normal range, whereas the language scores were below the normal range, suggesting language was an area of difficulty regardless of IQ. Also, 24% of youth offenders and remandees scored below the lower normal range cut-off of 85 on the nonverbal IQ test, compared with 88% for the CELF-4 Core Language scores. Secondly, there is evidence suggesting that the accuracy of nonverbal IQ scores may diminish with age in those with oral language difficulties (Tomblin et al., 1992). Furthermore, the association between nonverbal IQ and language scores was not evident when examining the nonverbal IQ scores of the individual young people in the group who were identified as having DLD. The poorer nonverbal IQ performance in the youth offender and remandee group in itself is not sufficient to explain their lower language scores.

The study design did not allow the determination of causal links. It aimed to determine: whether significant difficulties with hearing, auditory processing and language are present in the youth offender population in New Zealand; whether differences in the pattern of these difficulties exist compared with a group of non-offending peers; and, whether these differences existed independently of nonverbal IQ. The results appear to answer these questions.
6.1.3 *Young people’s perceptions of communicating in the youth justice system*

Chapter 4 presented a study that aimed to describe how a group of male youth offenders and remandees in a youth justice residence in New Zealand describe communicating in New Zealand’s Youth Justice System.

The results showed that the difficulties the young people experienced communicating in the youth justice system had the potential to leave them feeling as though they had no control or ‘voice’. The young people expressed this in various ways through how they talked about communication in court; many of the young people spoke with frustration and strong emotions about their difficulties understanding the language and events during their court hearing, as well as their limited opportunities to speak. This feeling of having no control, or powerlessness, was shown to be a feature of other qualitative research including young people in youth justice settings in New Zealand (Ministry of Social Development, 2015a).

One of the most notable barriers that contributed to this lack of control that all of the young people identified in chapter 4, was difficulty understanding the language used in the courtroom. This was accompanied by the young people reporting that they struggled to understand the outcomes of the court process, which appeared to contribute to their sense of having no control. Despite this, most of the young people were able to identify strategies that could help their communication (for example, asking professionals for clarification, or talking to professionals one-on-one in less noisy environments), but analysis of the interviews revealed that the young people appeared to have difficulty using these strategies. Difficulties applying communication strategies have also been reported in US- and UK-based research that included groups of youth offenders (for example, Hopkins, Clegg, & Stackhouse, 2016; Sanger, Moore-Brown, Montgomery, Rezac, & Keller, 2003).

The difficulties with communication that the young people outlined in this qualitative study align with those of several quantitative studies that evaluated the skills of youth offenders using standardised assessments. In the current study, the young people reported difficulties understanding the words and wider contextual events in court. They expressed frustration when talking about not being
able to express themselves in court and seemed uncertain about how to use strategies to improve communication. Data from studies using standardised assessments of youth offenders’ language skills have identified that a disproportionate number of youth offenders (mostly with previously-unidentified language difficulties) exhibited difficulty with language comprehension, i.e. receptive language skills (for example, Blanton & Dagenais, 2007; Gregory & Bryan, 2011; Humber & Snow, 2001), poor vocabularies (Sanger et al., 2001), poor pragmatic or social communication skills (Humber & Snow, 2001; Snow & Powell, 2008), and poor expressive language skills (for example, (Hopkins et al., 2017; Snow & Powell, 2008; Snow et al., 2016).

What this quantitative data misses, however, is what those young people feel is most relevant for supporting their communication. The young people interviewed in chapter 4 for this research identified a number of factors that helped with communication, and these could provide avenues to target for supporting their communication in the future. They highlighted the fact that having a trusting and respectful relationship with adults was essential, and acknowledging and working with the young person’s culture was also identified as a key component that could help communication.

The language skills of the young people in this study were not evaluated, and including this could be a focus for future research. However, this study provides a snapshot of valuable information about the overall experiences and views of a sample of young males from a youth justice residence who have been through the different processes of New Zealand’s Youth Justice System. Study 2 highlighted the aspects of communication that the young people struggled with when talking with youth justice professionals, regardless of the young person’s communication abilities, and provided insight into areas that could be targeted and changed in the youth justice setting. Furthermore, the difficulties reported by these young interviewees raise concerns that are likely to be relevant to other young people attending court, whether as defendants or witnesses, and question the young people’s ability to fully participate in youth justice processes. Difficulties understanding court proceedings is a barrier to the young person being able to fully participate and represent themselves, and at a minimum, has the potential to leave
the young person feeling frustrated or disengaged. At worst, this raises questions around natural justice, and their fitness or competence to stand trial within the current youth justice system.

6.1.4 Youth justice professionals’ views of communicating with youth offenders

The third study, presented in chapter 5, sought to describe how key youth justice professionals in New Zealand’s Youth Justice System view their experiences of communicating with the young people they work with.

Analysis of the discussions with these professionals revealed that they see communication as being one part of a complex interplay of factors in the youth justice setting, where fulfilling the objectives of restorative justice and the responsibilities of their role is taking place in a context where there is a range of social, cultural and other issues that affect how well the young person can communicate. The professionals identified a number of challenges and barriers to effective communication, including factors relating to the young people, the youth justice environment, and factors relating to themselves and their role.

One of the main factors the professionals identified was that the youth justice environment is a difficult and foreign setting, not only in terms of more formal language, but also the cultural and physical context in which the young people must communicate. Relating the communication difficulties with the foreign environment and more formal language used in court, in particular, aligns with one of the main issues the young people expressed in chapter 4. This finding has also been described in other New Zealand-based research that interviewed young people, their families, and youth justice professionals about their general experiences in youth court (Ministry of Justice, 2011), as well as some international qualitative research (Wigzell, Kirby, & Jacobson, 2015).

The cultural context emerged as an important factor for successful communication. Court-based professionals highlighted the success of the Rangatahi Court for Māori youth in facilitating communication through establishing cultural connections and respect with the young people and their families. These professionals noted that successful communication was most likely where their cultural understanding or ethnicity aligned with those of the young person. This was also voiced by the young
people in chapter 4, where half of the young people specifically mentioned that a common cultural understanding or background made it easier to communicate. Moreover, this echoes qualitative research involving young people interviewed as part of a submission to New Zealand’s Youth Crime Action Plan (Office of the Children’s Commissioner & JustSpeak, 2012).

The professionals in chapter 5 also talked about their role and professional responsibilities shaping the nature of the interactions and communication they had with the young people. All of the professionals reported strategies that they felt helped communication, but they noted some challenges to overcome. These included the jargon and technical language of the courtroom, the short amount of time they have with most young people, and the environment of the youth justice residences, where the needs of the individual have to be balanced with those of the group.

Developing a relationship with the young person was also a key factor that all of the professionals talked about. Both young people (in chapter 4, and in research from the Ministry of Social Development, 2015b, and the Office of the Children’s Commissioner & JustSpeak, 2012) and youth justice professionals in other studies (Cleland, 2012; Ministry of Justice, 2011; Ministry of Social Development, 2015b) have highlighted the importance of establishing rapport, and a relationship built on trust and respect. In all these cases, this was related to the individual as a person, rather than the specific professional role.

The professionals also raised a number of less obvious issues that could affect their communication with young people. These included balancing the requirements of applying justice and their authority role with empowering the young person (for example, “we walk a tightrope in court between being appropriately, symbolically formal and also, providing a therapeutic jurisprudential approach, and that’s quite a challenge”), overcoming the power dynamic between their role and the young person (“I don’t think judges should ever forget that they play a role in the system…it is one at times, to set the rules and deliver the hard messages. The question is, how can those hard messages be conveyed in a way that’s comprehensible?”), and factors relating to the young people, including their
attitude and emotions (“they express it in their emotions – anger, violence, upset, sadness – all those things seem to come out with them. And, so they can be difficult”).

For the young people in chapter 4, the communication difficulties extended beyond the language and appeared to impact on their broader, macro-level understanding of courtroom events; this, in turn, contributed to a sense of them feeling powerless. This aligns with a key finding from chapter 5 where the professionals acknowledged the potential for the young people they work with to be disempowered by the system. Not only from it being a foreign environment, but also because of the difficulties inherent in restorative focus of the youth justice system (whereby justice is presumed to be served through empowering the offender to accept and make amends, and therefore be held accountable, for their offending). Empowerment and ensuring participation of the young person and their families is a fundamental aspect of New Zealand’s Youth Justice System (New Zealand Government, 1989a). The difficulties in the reality of striking this balance of empowerment with achieving justice in New Zealand’s Youth Justice System have been well recognised, both in general (for example, Lynch, 2016; Maxwell & Morris, 1993), and specifically in relation to Māori participants (Davies et al., 2012; JustSpeak, 2012; Vieille, 2012). Furthermore, power dynamics can exacerbate this difficulty, whereby variables such as race, gender, age, and socioeconomic status interact to create explicit and implicit biases towards someone; or, poorly-defined roles of victims, offenders, gatekeepers, and facilitators may contribute to inequitable participation of some groups (Lyubansky & Shpungin, 2016). Empowerment in this system is described as when offenders take responsibility for their actions and make amends, which allows the victim to regain control of their lives (Maxwell et al., 2004). Communication is central to this process to negotiate these outcomes between the young person, their family, youth justice professionals, and the victim. Reports and research examining effective outcomes for the young people outline the importance of effective communication (Cleland, 2012; Maxwell et al., 2004; Ministry of Justice, 2011; Ministry of Social Development, 2012b, 2015b). Therefore, it becomes especially important to assess the status of the young person’s communication skills, and ensure the youth justice professionals have the tools to aid the young person’s communication where breakdowns
occur. This will require professional upskilling and training, which all of participants in chapter 5 mentioned was key to improving communication in the future. This may then also overcome the young people’s feelings of powerlessness that were a key finding in chapter 4.

All of the professionals reported strategies that they felt helped communication, but they also expressed a desire for further training. Research is emerging that shows the benefits of speech-language therapy for both the young people and the professionals in the youth justice setting (Bryan & Gregory, 2013; Burrows, Yiga, & Heneker, 2012; Gregory & Bryan, 2011; Snow et al., 2017; Snow & Woodward, 2017).

Finally, when referring to the communication skills of the young people, the professionals in this study could see clearly that difficulties existed, but found it difficult to characterise these and how best to work with them. This gave rise to discussions around additional training, but also the consequences of labelling young people as language impaired. Many of the professionals (mostly those working in the youth justice residences) expressed concerns that assessing and labelling the young people may be stigmatising; some of these professionals also felt that the young people’s language skills were not necessarily impaired, but simply different due to their backgrounds, culture and upbringing. This is a legitimate concern, UK-based qualitative research of young people in youth justice and education settings found that they viewed assessments as another way to increase surveillance of their actions and introduce new means of control (Ellis & France, 2012). Furthermore, most of those participants tended not to understand the exact nature of, or reasons for undergoing the assessments, which exacerbated this sense of intrusiveness. There is also some evidence suggesting that young people who feel stigmatised in youth justice processes may be more likely to reoffend (McGrath, 2009). Although screening and assessing the young people’s communication skills will be essential to establishing the presence and nature of communication disorders, it is worth bearing these effects in mind for this population.

Triangulation of findings is a method used in qualitative research to gain a deeper understanding of a phenomenon from different perspectives. Cohen and Manion (2000) say triangulation aims to “map
out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint" (p. 254). Ultimately, the findings of this study with youth justice professionals complement, or corroborate, those described in chapters 3 and 4 of this doctoral research. More specifically, study 1 demonstrated that a majority of the young people tested had significant difficulties with communication. Difficulties communicating in the youth justice setting were also described in study 2 by a group of different young people, and the professionals in study 3 also acknowledged that they could see that this was a problem for many of the young people they work with. The youth justice environment, especially court, was mentioned by both the young people and professionals in studies 2 and 3 as being a difficult communication environment, with legal jargon and the formal setting contributing to this. However, both groups of participants identified that establishing a good relationship or understanding significantly helped communication; this related to establishing a trusting relationship, with rapport and familiarity, but also acknowledging the importance of culture. Culture was also identified by the participants in both the youth justice professionals and the young people as a facilitator of communication where there was a cultural commonality or understanding. Disempowerment/empowerment was also a key aspect to the discussions in studies 2 and 3; however, the standpoint was different for each group of the participants: for the young people this related to a lack of power from difficulties with participation, whereas for the professionals, it related to the broader picture of fulfilling their youth justice role to empower the young person to take account of their offending, but within a context of being in a profession with an inherent authority role that disempowered the young person relative to them.

This study described the complexities of communication in the youth justice system. Because a focus of the youth justice system is to obtain justice, there is a punitive aspect and authority roles that naturally go with this. However, the interviews with the youth justice professionals ultimately showed that youth justice professionals understand that these complexities exist, they often see that the young people they work with struggle with aspects of the youth justice system as a result of their poor communication skills. Most importantly, they showed that the youth justice professionals have a strong
commitment to overcome these communication difficulties to help the young people as best they can. This study revealed that youth justice professionals are a highly valuable source of information for identifying potential barriers to communication in New Zealand’s Youth Justice System, and they also offer insights on how to overcome those barriers and support the young people’s skills in the future.

6.2. Research limitations and considerations

This research, as with all, has some limitations to bear in mind when interpreting the findings.

For study 1 and 2 (in chapters 3 and 4, respectively), the two main limitations that should be considered are potential selection bias for the youth offender groups, and a lack of specific socio-economic data for these groups of young people. The sample of youth offenders and remandees investigated in both studies was only a small group of those passing through the youth justice residences, and may have been biased by several factors. One of the main factors is likely to have been the process of obtaining parental consent. This requirement meant that most of the young people came from families and support systems that were motivated to read about the research, complete the forms and return them. When looking at the eligible non-participants, the main reason for non-inclusion was the failure of parents and guardians to return the consent forms. This may have excluded young people with less parental engagement in their up-bringing, perhaps associated with lower parental education levels, and these young people may have had greater communication difficulties than the participants who were included. Research in younger and vulnerable populations, such as youth offenders, presents a number of challenges with regards to obtaining informed consent (Meade & Slesnick, 2002), and barriers to accessing youth in custody have been documented (for example, R. R. Myers, 2015). In study 1, the decision to obtain parental consent for participants younger than 16 years of age was made to be consistent with the researchers’ institutional guidelines, but posed a significant barrier to recruitment, and there are a number of arguments against obtaining parental consent in this particular population in future research. First, in New Zealand, there has been a shift away from an age-based definition of consent in health-related research towards a focus on the competencies of the individual child or young person (New Zealand Psychologists Board, 2015). There would be a strong case for declaring the young
people in a study such as this as being mature minors, i.e. to have the capacity to understand the nature, risks and consequences of the research and therefore give consent without parental involvement. As previously mentioned, many young people in trouble with the law come from fractured, difficult, and sometimes abusive home environments, where a parent’s decision may not be in the young person’s best interests. In study 1, over half of the eligible young people at the time the consenting process was taking place could not be included because of a lack of parental consent. During this process of collecting parental consents and contacting the parents, it quickly became apparent to me that there were a number of unforeseen ethical issues that extended beyond those relating to the potential participants to their families. In particular, some parents (most often mothers) reacted with fear about contacting the young person’s father because of Protection Orders – either taken out to protect the mother, herself, or the young person. These women became upset and worried about the possibility of me inadvertently revealing their location, or the location of their son, to the father, and thereby endangering them. Others were completely at a loss as to why I would have to contact a parent who had never had any involvement in the young person’s upbringing. I believe these issues are significant, and were not adequately addressed in the ethics process, which focussed primarily on the vulnerability of the young people, but not by extension, their families. In my opinion, contacting these families for consent felt intrusive, seemed to exacerbate their vulnerability, and thereby, may have contributed to fewer consents being returned from these underserved families. Study 2 included only young people over the age of 16 years to avoid these difficulties; however, this means that study 2 lacks perspectives on the potentially-different experiences of communication that younger males at the youth justice residences may have had.

It is also worth bearing in mind that in both study 1 and 2, the young people who chose to participate in this research could have also been a source of bias: it may be that only those confident enough in their abilities or those who had greater concern agreed to participate. However, in study 1, only four of the 79 eligible young people declined to participate at the point of gaining their informed assent prior to testing, making the main source of selection bias likely to be the requirement for parental consent.
When looking at the consent ing process of a sample of other similar research, there is substantial variation in how consent was obtained, which most likely reflect differences in legal approaches to incarcerated or adjudicated young people between the different countries (see for example, Blanton & Dagenais, 2007; Bryan, 2004; Bryan, Freer, & Furlong, 2007; Bryan, Garvani, Gregory, & Kilner, 2015; Davis, Sanger, & Morris-Friehe, 1991; Gregory & Bryan, 2011; Hopkins et al., 2017; Sanger, Coufal, Scheffler, & Searcey, 2003; Unruh, Povenmire-Kirk, & Yamamoto, 2009; Webb, 2017). In Australia, Pamela Snow and colleagues had the requirement to obtain parental or carer consent waived by institutional ethics committees (Humber & Snow, 2001; Snow & Powell, 2002, 2005; Snow et al., 2016). Humber and Snow (2001) point out that this decision was made on the basis that few young people who offend have sufficiently good relationships with their parents to readily obtain such consent, and, because many youth offenders have been raised with very little parental support, they are likely to feel disempowered by a requirement to obtain parental consent. This approach should be explored by future researchers within the New Zealand context who include young people from youth justice residences in order to obtain the most representative sample possible of the young people at those facilities.

Another significant factor worth bearing in mind is the lack of socio-economic data for the participants in both study 1 and 2. There is an established association between deprivation and language abilities (Law et al., 2017). The researchers were not given access to such information for the young people in the youth justice residences; therefore it was not possible to match the study group and control subjects in study 1 by SES, nor was it possible, therefore, to draw possible inferences about the role SES may play in the communication experiences of these young people. It is, however, highly likely that the majority of young people at these residences are from low-SES background, but there is no data to confirm this. Notably, in study 1, an analysis of the results in the control group according to school decile (or SES) ranking found no significant, or clinically-meaningful differences or trends, in any of the assessments or subtest scores. However, the decile rating is a measure to guide funding according to the proportion of students coming from deprived areas, and does not mean all students in those
schools are from low-SES families; therefore, it is a fairly imprecise measure and it is still possible that there may have been a significant difference in SES between the two groups in study 1, which could inflate the between-group differences.

Another point to bear in mind when looking at the control group for study 1, is that it is possible the students were not randomly selected from the school list, as requested. They may have been selected for inclusion in the study as their teacher suspected they had some difficulties with hearing, auditory processing or language that may be revealed through participating in this research. There is no way to confirm this; however, it may explain the slightly elevated rates of abnormal tympanograms and proportion fulfilling the diagnosis of APD (18%) in the control group.

Also relevant to studies 1 and 2 of this research is the lack of female participants. Young females make up a smaller proportion (21%) of New Zealand’s youth offender population (Statistics New Zealand, 2016); however, international studies show that a disproportionate number of female youth offenders may also have communication difficulties (see for example, Anderson, Hawes, & Snow, 2016; Sanger et al., 2001; Sanger, Moore-Brown, et al., 2003; Snow et al., 2016). Of the few studies that have assessed the language skills of both male and female youth offenders, no significant gender-based differences were seen; both genders performed significantly worse than their non-offending peers (Blanton & Dagenais, 2007; Hopkins et al., 2017). However, the samples sizes in these studies were small. Although overall rates of communication difficulties may be similar between genders, it may be that the nature of those communication difficulties differ between male and female youth offenders. Research has shown that the pathways into offending differ between males and females, with females having experienced more sexual abuse, sexual assault, domestic violence and depression (Department of Corrections, 2016). Gender-based differences have also been found in the behaviours driving offending (J. G. Webb, 2017). Webb (2017) found that female offenders tend to be characterised by internalising mental health features, especially trauma, which was then associated with externalising delinquent behaviour. On the basis of these factors, it could be surmised that female youth offenders may present with more prominent difficulties with pragmatic or other social aspects of communication.
US-based Sanger and colleagues have examined the language skills of female youth offenders and found conflicting results in pragmatic aspects of language. One study found no significant differences in structured contexts, but other language skills were significantly worse than non-offending females (Sanger et al., 1997). Whereas another study found that, although the young females they interviewed had a good understanding of pragmatics, they often did not use ‘best practice’ of what would be considered appropriate communication by society (Sanger et al., 1999). These two studies suggest differences may exist; however, there is a paucity of research examining the communication skills of female youth offenders. This is especially so in New Zealand where there is a lack of research involving female youth offenders in general (Becroft, 2014); therefore, research on the communication skills of our female youth offender population would be particularly beneficial.

Future research, regardless of gender of the participants, could also investigate pragmatic aspects of communication, and also whether the young people have any significant speech disorders. No young people in study 1 or 2 demonstrated significant speech or fluency difficulties; however, both of these domains of communication could valuable for including in future research within the New Zealand context. There are some limitations particular to study 2 and study 3 (presented in chapter 4 and 5) that are relevant to qualitative research. By their nature, the sample sizes of both of the qualitative studies were quite small, and the views of the included participants may not reflect all youth offenders, or all youth justice professionals. However, there is evidence to suggest that a small sample size does not limit saturation and variability of data captured during thematic analysis. A group of researchers conducted a review of the thematic analysis of 60 in-depth interviews in order to pinpoint when, in the sample, thematic saturation occurred (Guest et al., 2006). They found that the basic elements of the meta-themes occurred as early as 6 interviews, with complete saturation within 12. Therefore, the sample sizes in chapters 4 and 5 do not necessarily render those studies findings less relevant to the broader field. Furthermore, generalisability of results is arguably less of a focus in qualitative research in general (M. Myers, 2000).
Although not a limitation *per se*, it is worth bearing in mind that there was no opportunity to pilot the interview schedules for study 2 to ensure the most suitable wording of the questions for the young people and inclusion of topics relevant to the research question that may not otherwise have been included. Subsequently, it could be argued that the content of the interviews is more likely to be interviewer-driven, rather than interviewee-led, and the possibility of the interpretation of the data being pre-determined by the interviewer (Denzin & Lincoln, 1994; Patton, 2002). In order to overcome these potential pitfalls, the interview schedule was developed with input from teaching staff at the youth justice residences, speech-language therapists, and academics with experience interviewing young people in trouble with the law. Furthermore, although the questions in the interview schedule appear directive and prescribed as written, these were not followed exactly as presented but rather functioned as a guide to ensure all questions were posed to each participant. Because of my relative inexperience with interviewing, I erred on the side of writing as many prompts and probes as possible for ‘blank’ moments; however, the interview schedule served as a guide only and the interviews that were conducted followed a more conversational format with topics and questions mostly guided by the young person; the specific interview questions added where relevant to that conversation. Practical limitations meant the questions and interviews did not follow a traditional ‘grounded inductive’ approach that focuses on theory development and refinement throughout the process of interviewing because of practicalities relating to access to participants (Holloway & Todres, 2003). Despite this, the interview data were analysed inductively, with themes strongly linked to the data, rather than taking a theoretically-driven approach to fit the data into a pre-existing coding framework (Braun & Clarke, 2006). This approach was also used for conducting the interviews and analysing the data in study 3, which included the youth justice professionals. Cultural and social bias may have affected results, especially with the young people in study 2: although verbatim quotes are provided to support the thematic analysis, the researcher, being a Caucasian female, may have interpreted the comments made by the primarily Māori or Pacific young people in a way that aligns more closely with her own culture (Mullings, 1999). Furthermore, the participants in both of the qualitative studies could have given
answers they perceived were expected of them, or maintained their self-esteem, or their professional or social identity.

It is also worthwhile noting that the sample of young people in study 2 was from one youth justice residence; therefore, it is possible this particular sample of participants and their answers are not representative of male youth offenders from the other three youth justice residences in New Zealand. However, the demographics (average age and ethnicity) of the sample do parallel those of the youth offender population in general (Statistics New Zealand, 2016). Also, because of restrictions on data collection, it was not possible to collect information on formal education and other potentially-relevant factors during the interviews, which may have provided some insight on factors that could contribute to communication difficulties. It is also worth considering that the participants in study 2 were adolescent males and therefore some of their answers and perspectives may reflect general tendencies of rebellion and conflict with authority figures common to their age (Wiley & Berman, 2012). The professionals from study 3 generally only included one representative of their role, which means their views may not reflect those of other such professionals. However, looking at Table 3, all of the professionals contributed to each major theme, and at least half or more contributed to each subtheme, which suggests that, for this group of professionals, the findings highlighted in chapter 5 were significant enough to span across professionals from very different youth justice roles, from those focused on enforcement, through to welfare and rehabilitation.

A final point to consider relates to changes in the speech-language therapy field that have occurred since study 1 was conducted and published. In 2015-2016, a group of experts undertook the multidisciplinary, multinational Delphi consensus study: ‘Criteria and Terminology Applied to Language Impairments: Synthesising the Evidence’ (or CATALISE) in order to develop some consensus statements on developmental language disorders (Bishop et al. 2016, 2017). A number of points they raised are relevant to this research. In particular, aspects relating to using cut-off points and discrepancy scores in diagnostic criteria for DLD, language relating to social disadvantage, and labelling. Without going into great detail, the CATALISE panel discussions showed tension with the
use of standardised assessments (to gain reliable and objective measures of language skills) and more qualitative language assessments that can capture aspects of functional language impairments that more formal tests may miss. Related to this was the use of cut-off scores on standardised assessments, which assigns a level of significance to the language difficulties but may miss individuals with scores just above the cut-off point that still experience significant functional difficulties arising from their poorer language skills. Although this point is more relevant to the clinical/intervention setting than the research scenario of study 1, it does highlight that there is likely to have been a group young people in study 1 whose scores were above the study’s cut-off score of 80 that would have still experienced functional difficulties with language that could impact on their participation in the youth justice system. The criteria for language impairment used in study 1 also used two discrepancy scores (between language and nonverbal IQ scores, and between expressive and receptive language). The CATALISE panel also highlighted that the rationale for using discrepancy scores is not well supported by the most recent evidence, especially with respect to nonverbal IQ. For many years, nonverbal IQ has been used for establishing a diagnosis of specific language impairment (now defined as developmental language disorder; DLD), where language difficulties should exist in the absence of below-normal nonverbal IQ scores (Bishop, 2014). The CATALISE panel concluded that nonverbal IQ did not predict response to therapy – individuals with low nonverbal IQ have been found to respond just as well to intervention as those with ‘normal’ nonverbal abilities (see for example, Bowyer-Crane, Snowling, Duff & Hulme, 2011) and adequate language skills are found in individuals with low nonverbal IQ (Rice, 2016). It is also not indicative of underlying aetiology: Bishop (1994) demonstrated that identical twins with language problems often had different scores of nonverbal ability, to the degree where one may meet traditional ‘normal’ limits, and the other may not.

Some of the youth justice professionals in study 3 alluded to issues relating to language difficulties associated with social disadvantage (is it a disorder or just a difference?) and the potentially adverse consequences of labelling an individual with a disorder. The CATALISE study also noted these challenges. The panel concluded that there was no clear profile associated with language problems
arising from social versus non-social risk factors, as such risk factors often co-occur and may interact. Rather than focusing on the cause of language problems, the panel recommend focusing on prognosis and coping with the demands of life. The professionals in study 3 who felt that perhaps, the young people simply had ‘different’ language because of their upbringings, also talked with reluctance about labelling the young people with language impairment and the stigma this may cause. This is a legitimate concern, as many young people in trouble with the law have risk factors for multiple disorders (Hughes et al., 2012); however, having a diagnosis with a label does serve a function. It allows a common terminology that can be used in both clinical and research contexts. It is also essential to allocate services and apply for funding – an unfortunate necessary reality of our modern health and social service systems. Finally, there is some research that has found that having a ‘label’ actually helped to reduce stigma by improving understanding of conditions and the limitations they impose on functioning (Brosnan & Mills, 2016) but also by belonging to a similar group. In the UK, Taylor, Hume and Welsh (2010) found that having a general ‘special education needs’ label was associated with lower self-esteem than having the more specific diagnostic label of ‘dyslexia’. Because some of the youth justice professionals had concerns about using such labels, it will be something that speech-language therapists should be mindful of when engaging with such professionals to ensure full support when assessing and delivering intervention to young people in youth justice settings.

6.3. Implications for future practice

The findings presented in this doctoral thesis have a number of implications for future practice in the youth justice system in New Zealand, and abroad. These are relevant for speech-language therapists, as well as workers and policy makers in the youth justice sector.

6.3.1 Support for youth offenders’ communication skills

The language assessment results presented in chapter 3 are remarkably consistent with those found in the UK and Australia. The consistency of language difficulties in young people in justice systems across a number of English-speaking countries indicates that language assessments should be
routinely carried out when they encounter the legal system. This is especially so in New Zealand where there is a restorative focus, and therefore a heavy reliance on verbal interactions between youth justice professionals and the young person who offended. It is also imperative, given the significantly poorer hearing health and hearing thresholds found in this doctoral research, that current hearing screening processes for young people in youth justice residences in New Zealand are more thoroughly evaluated. This should include immittance audiometry to determine the current functional- and health-related status of the young person’s hearing. Following on from this, young people found to have compromised hearing, whether due to a transient infection or persistent hearing loss, should be given the option to use a remote-microphone hearing aid system (Esplin & Wright, 2014), or another amplification system. These should be made available in difficult hearing environments such as in court or during Family Group Conferences where there may be multiple speakers or interjections, or some distance between the young person and the speaker.

6.3.2 Implications of findings for criminal proceedings

Neurodisabilities, especially communication disorders, have been acknowledged as being important to address, not only from a moral standpoint, but also as being implicit in ‘fitness to stand trial’ legislation. Neurodisability is now a potential basis for a finding of ‘unfitness’ as outlined in the Criminal Procedure (Mentally Impaired Persons) Act 2003 and the Intellectual Disability (Compulsory Care and Rehabilitation) Act 2003 (Peirse-O’Byrne, 2014). Fitness to stand trial varies amongst jurisdictions, but generally includes the ability to comprehend or understand proceedings, as well as the ability to participate and instruct a lawyer (Vizard, 2012). In New Zealand, the standard of fitness to stand trial requires a defendant to be able to conduct a defence or instruct their lawyer to do so with an adequate understanding of the nature, purpose and possible consequences of the proceedings (Armstrong & Hatters-Friedman, 2016). Taken together, these factors, and the findings of this research, point towards an increasing imperative to assess communication skills, as hearing loss, poor auditory processing, or impaired language skills all have a potential negative impact on participation in youth justice processes and rehabilitation programmes.
6.3.3 Implications of findings for different ethnicities

This research provides data for a minority ethnicity (New Zealand Māori) that is over-represented in the youth justice context, which has some parallels with the situation in the UK and USA, where minority ethnicities are over-represented in youth crime statistics compared to the general population (Snyder, 2008; UK Ministry of Justice, 2015). Working with the young people’s culture was identified as a key facilitator of communication by both the young people and the professionals in this research. Because many of youth in New Zealand’s Youth Justice System are Māori or Pacific young people, the standardised assessments currently available to measure their language skills may not capture the exact nature of the difficulties these young people have with the more formal English used in the youth justice setting. The assessments are based on Westernised and formal language structures that many young people in New Zealand may not be familiar with. This was mentioned by the youth justice professionals in chapter 5, who expressed concern with the stigma of labelling the young people as having a language disorder using such measures, despite the fact that they could see that some young people struggle with communication. Consequently, future communication assessment, support and intervention services for youth offenders must acknowledge the cultural diversity and background of the young people involved to avoid a purely ‘deficit approach’ that could further alienate the young people (Dudley-Marling & Lucas, 2009). There is a strong argument for encouraging and supporting future Kaupapa Māori research in this area (that is, research and evaluation done by Māori, with Māori, and for Māori). Development of such research should be informed by tikanga Māori (Māori protocol) and include the voices of Māori and adhere to Vision Mātauranga (to recognise and include Māori as important partners in research) (Ministry of Business, Innovation & Employment, n.d.). This approach should also be followed for research and service provision that focus on Pacific youth. Regardless of ethnicity, future speech-language therapy researchers and service providers working with the young people in the youth justice system will need to acknowledge the bilingualism of many of the young people, as well as the particulars of their language(s) and cultural perspectives in their work to ensure its relevance.
6.3.4 Support for youth justice professionals.

Some of the young people who were interviewed for the qualitative study in chapter 4 reported that communication was made more difficult when the youth justice professionals used difficult words or spoke quickly. The findings in chapter 5 revealed that youth justice professionals make a conscious effort to simplify their language and vocabulary when talking to young people they work with; however, the difficulties reported by the young people interviewed for this research, especially in the court situation, suggest that there is room for improvement. Formal training should be made available to professionals to ensure their methods are effective. All of the professionals interviewed for this research expressed a desire for more training relevant to communication with the young people they work with.

The argument for providing training and support for professionals’ communication is especially relevant in light of recent changes to increase the age of Care and Protection in New Zealand to include 17 year-olds (Ministry of Social Development, n.d.). This means that existing transition advice and assistance extends to young people 17 years of age who are leaving care, court wardship or a youth justice residential placement.

6.4. Ideas and challenges

Young people in trouble with the law are a vulnerable group with many complex challenges. There are some straightforward options that could be implemented to address the immediate communication needs of young people in trouble with the law. First, would be making a provision for speech-language therapy services in the youth justice system.

6.4.1 Approaches to delivering intervention in New Zealand’s youth justice context

An essential part of providing speech-language therapy will be the engagement of the young people participating in it. Screening all young people who repeatedly come into contact with the youth justice system is a logical first step. When looking at speech-language therapy delivery options for the young people. Larson and McKinley (2003) suggest that the most appropriate service delivery models for adolescents with communication disorders are ones that involve either course-for-credit options, or
a collaborative, consultation format. The communication skills-based course-for-credit option offers the young people a course with credits that go towards a certificate or graduation from other education programmes. This approach is especially suitable for adolescents as it avoids the peer-related stigma and disruption of being pulled out of an existing class or programme individually, and it could be incorporated into the weekly timetable at youth justice residences. Even if delivered in a group format, the programme could be tailored to groups of young people with similar needs and communication levels. It has also been suggested that greater success is likely when the young people in the groups are involved in planning the goals and objectives, and choosing appropriate topics and activities – the options for which would be driven by the results of assessment data of the individual young people (Larson, McKinley, & Boley, 1993). This option is particularly appealing as it empowers the young people to take ownership of their difficulties and, by allowing the young people to choose which skills they would like to improve, makes the therapy more meaningful for the young person, and thereby improves its chances of success. In contrast, an approach that entails the collaborative, consultative delivery of speech-language therapy would include scheduled conference time between a speech-language therapist, and teachers and other staff, to develop interventions and communication support, and to tailor delivery of the classroom lessons that are appropriate to the young people’s difficulties in the class. This approach is specific to the needs of each individual young person and may work in the youth justice residence or prison setting where there is regular contact with the young person. However, this approach may be difficult to implement in a community context.

There is very little research on delivery of speech-language therapy services to young people in the youth justice setting. However, two UK-based studies and one US-based study has shown promising results for young people in the youth justice context who received speech-language therapy, especially where intervention was individualised and tailored to the needs of the young person (Burrows, Yiga, & Heneker, 2012; Gregory & Bryan, 2011; Smith & Griffen, 2002). Benefits were also seen in a recent phase I pilot trial that delivered one-on-one speech-language therapy tailored to the assessment-based needs of six incarcerated young males in an Australian Juvenile justice Detention Centre (Snow &
Woodward, 2017). After 7- to 16-weeks of therapy (once or twice per week), engagement was reported as generally strong, and all of the young people made gains on the skills targeted by the intervention. Most importantly, all of the young people reported that they benefitted from the therapy sessions. The speech-language therapists noted that working in the detention centre setting did pose some challenges due to the young people’s attention and motivation, but also due to practicalities of the location, (such as security restrictions on therapy materials), and unpredictable availability of the young people, staff and rooms. The authors say these difficulties would be overcome with clinicians permanently based at the centre. Despite these challenges, the results showed that delivery of speech-language therapy improved the language outcomes of the young people, and it was seen as useful by the young people themselves. The results of these studies also suggest that it is possible to deliver therapy in youth justice facilities. In addition to the young people seeing benefit in the therapy, success of its delivery is also dependent on the ‘buy-in’ of the staff and youth justice professionals who work with the young people. Research has shown that youth justice professionals working with young people who received speech-language therapy expressed overwhelming support for the inclusion of such services in a recent, Australian-based qualitative study (Snow et al., 2017), and also in UK-based research (Bryan & Gregory, 2013).

6.4.2 Communication support through court intermediaries?

A second way to support the communication needs of children and young people who are involved in justice processes would be through court intermediaries, such as those available in the UK. New Zealand has lay advocates available to support those going through the system; however, their focus has generally been on cultural aspects and needs of the people involved (Becroft, 2015). The UK-based intermediary’s role is to support and assist the two-way delivery between children, young people or vulnerable adults, and the professionals involved during the investigation and trial stages of the justice processes (Plotnikoff & Woolfson, 2015). Registered Intermediaries tend to come from professional backgrounds in areas such as speech and language therapy, nursing, occupational therapy, education, or psychology. They are available to assist police officers interviewing vulnerable witnesses,
and in all cases, the intermediary completes a comprehensive assessment of the individual's communication needs and makes recommendations in a written report of how the person should be questioned. In their book about intermediaries in the criminal justice system in England and Wales, Plotnikoff and Woolfson (2015) show how beneficial its implementation has been for both the individual with communication needs and the various professionals who must deal with them. A recent New Zealand-based study that assessed the viability of introducing such a role into New Zealand’s legal system for assisting child witnesses (Hanna et al., 2013). Overall, the youth justice professionals involved in the study felt an intermediary would be a positive step and warranted further exploration. Recent steps have been taken to address the establishment of court intermediaries in New Zealand. A Working Group has been set up, and communication assistants are now working in New Zealand courts on a case-by-case basis. The findings of this doctoral research further support the establishment of communication assistants for young people during court appearances.

6.4.3 A coordinated approach to support communication skills

New Zealand’s Youth Justice System has a number of unique challenges. It falls under the domain of the Ministry of Justice, but operates in line with Oranga Tamariki - Ministry for Children (which oversees the youth justice residences and is heavily involved in supporting and guiding the young people and their families through the system). Depending on the young person, there may also involvement from the Ministry of Health and the Ministry of Education. Because of this, having reliable and functional information sharing systems will be critical in ensuring the uptake of communication screening processes and intervention provision. Information sharing and interagency cooperation was one area that some of the professionals in study 3 mentioned could help ensure a young person with a particular disorder or difficulty gets the support they need at each point in their journey through the youth justice system. Other research echoes this importance of information sharing to support best practice with interventions aimed at young people (Levine, Eagle, Tuiavi’i, & Social Policy Agency, 1998; Ministry of Health, 2012; Ministry of Social Development, 2012b; Slater, 2009). This also aligns with the Ministry of Health’s recently-released Health Strategy Roadmap of Actions (2016), which
outlines the importance of collaboration across government agencies to improve the health outcomes of all New Zealanders, but especially at-risk and vulnerable groups. Youth offenders clearly fall into these categories. However, at the same time, this should be done carefully, as research has shown that young people may view information sharing between agencies with suspicion, which could jeopardise the relationship and trust young people have with youth justice professionals (Ellis & France, 2012).

6.4.4 Early identification of communication difficulties

Speech-language therapy as a profession overlaps the domains of education and health. Pamela Snow in Australia, who has been involved in the vast majority of Australian-based research into language disorders in youth offenders, argues that, because of the overlap of risk factors for juvenile offending and learning and communication disorders, speech-language therapists are perfectly positioned (and have a responsibility) to raise awareness of the public health importance of language competence and early intervention, “by virtue of the psychosocial protection it confers on young people with respect to the development of prosocial skills, transition to literacy and overall academic achievement” (Snow & Powell, 2004a, p.221). Here, Snow outlines perfectly the third, more long-term approach, to improving the communication skills of youth offenders in New Zealand: that is, early identification and targeted speech-language therapy intervention for children at risk of developing communication difficulties.

Early identification of those at risk of language difficulties for targeted intervention seems straightforward but presents some practical challenges. One difficulty is establishing exactly which children should be targeted, for example, universal screening instruments have not always been proven sufficiently reliable to be recommended (Siu, 2015; Wallace et al., 2015). Targeting intervention based solely on the individual child’s use of language is also problematic because of the high degree of variability in young children’s language-development trajectories (Reilly et al., 2010, 2014). The recent consensus study, CATALISE, recommended that intervention should be given to children whose language difficulties are likely to persist, or those who experience ‘functional limitations’ such as poor educational attainment, limited everyday communication and social relationships, and reduced quality
of life (Bishop et al., 2016). Another approach was suggested by a UK project, which examined the evidence for provision and intervention of speech-language therapy support for preschool children from socially-disadvantaged backgrounds (Law et al., 2017). The researchers suggest a ‘continuum of response to a continuum of need’ approach. This acknowledges that splitting children into groups of those who have, versus do not have language disorders may miss children just above the threshold of providing support, (who may then go on to have significantly poor communication than their peers). Therefore, the researchers suggest that identifying a child’s risk level for communication disorders could involve the integration of child, family and parenting factors, with factors relating to other vulnerabilities (such as learning difficulties or delayed social and emotional development), and ongoing monitoring of the child’s progress. However, they acknowledge future research is needed to determine which method, or combination of methods, are best at estimating the child’s level of risk for persistent communication difficulties.

6.4.5 *Addressing poverty to support the development of communication skills*

A key risk factor for communication difficulties is being raised in social disadvantage or poverty. As outlined in chapter 2, low SES has associated with the development of hearing, auditory processing and language difficulties (for example, Clegg, 2006; Fernald, Marchman, & Weisleder, 2013; Giles & Asher, 1991; Giles & O’Brien, 1989; Greville, 2001; Hoff, 2003; Murphy, Pontes, Stivanin, Picoli, & Schochat, 2012). Therefore, addressing child poverty and income inequality in New Zealand would go a large way towards addressing many of the risk factors and potential causal mechanisms for developing communication difficulties that were outlined in chapter 2. For example, increasing the income of families may increase healthcare utilisation, and thereby reduce the high rates of otitis media with effusion (OME), which have been linked with ongoing hearing problems, potential auditory processing difficulties, and in some cases, poorer language outcomes.

In New Zealand, we have some of the worst rates of child poverty, especially in our ethnic minority groups, according to the Child Poverty Monitor Report 2016 (Simpson et al., 2016) and the United Nations (UNICEF, n.d.). Improving the living conditions and family environment of all children
in New Zealand is the best protective factor for their future neurodevelopment, educational attainment and positive participation in society, and likely, the most comprehensive and cost-effective way of preventing future offending. To illustrate the effects of increasing parental incomes, a large US-based cohort study (that began in 1993) documented the outcomes of 1420 young participants before and after an exogenous increase in income that resulted from the establishment of a Casino. The analysis showed that an additional $US4000 a year for the poorest households during the participants’ childhood resulted in an extra year of education measured at age 21; it also reduced the chances of ever having committed a crime by 22% at ages 16 to 17. The primary suggested causal mechanism for these positive effects was the measured improvement in the quality of parental interactions and experiences with children after the increase in parental income. These findings are important when we consider: first, the direct reduction in youth criminality associated with increased income for the poorest families. In New Zealand, we know that many of the young people engaged in criminal activity come from socially-disadvantaged backgrounds, therefore increasing financial support for the poorest families in New Zealand may also result in a similar, direct reduction in youth offending by young people in these families. Secondly, many of New Zealand’s youth offenders have a history of poor engagement with education (Becroft, 2004), but participation in education has been shown to be one of the main protective factors against youth criminality (Lipsey & Derzon, 1998). Thus, if we surmise that increasing the income of poor families also increases engagement with education, this should help reduce youth offending, as well as provide more opportunities for communication difficulties to be identified and appropriately responded to by education professionals. Thirdly, if increased income also improves the quality of parenting interactions, this will have a protective effect on language outcomes. Increasingly, research has shown that it is the quality of the language environment, and the style of parental interaction that influences language development and outcomes for children (Hoff, 2006). Recent longitudinal research of a birth cohort of 1455 participants has shown that a cognitively-stimulating home environments has a consistent, positive moderating effect on the degree of cognitive impairment associated with OME-related hearing loss (OME/HL) (A. J. Hall, Maw, Midgley, Golding, & Steer,
More specifically, children with high OME/HL and low home cognitive-stimulation scores had lower verbal and performance IQ than children with high OME/HL but high home cognitive-stimulation scores. The researchers point out that this difference was observed at both age 4 and 8, and ranged from 5 to 8 IQ points. This suggests that having a supportive home environment is likely to play a significant protective role across many neurodevelopmental outcomes. Finally, the review in chapter 2 highlighted how abuse, neglect and/or maltreatment can negatively affect the development of communication skills. New Zealand has some of the worst rates of child abuse and maltreatment in the world; if providing at-risk families with more income helps alleviate the stressors that trigger that abuse, this would also help protect the neurodevelopment of the potential victims.

6.4.6 Immediate steps to support youth offenders’ communication

Dealing with poverty in New Zealand is a large, long-term prevention strategy that could yield long-term, intergenerational results. What is needed now is an immediate solution to improve and support the communication skills of young people in the youth justice system in New Zealand. This can be achieved by the implementation of speech-language therapy service provision to the youth justice sector. Speech-language therapy has been shown to have beneficial effects in young people who offend. Undoubtedly, implementation of such services in the justice sector would require government funding and systemic changes. These would be necessary for the information sharing and interventions required to identify and support the young people’s communication difficulties. However, the costs of implementing speech-language therapy services for young people in the youth justice system in New Zealand will be minimal compared with the costs to society of young people who do not receive adequate support, struggle post-justice and end up as life-course, persistent offenders. The monetary costs of continual offending are substantial. They include the direct and indirect victim- and crime-related costs, possible future court costs and incarceration, lost productivity of the young offender and their family, and lost opportunity costs of redirecting the youth justice-related funds from other areas of the government. They also include the long-term indirect societal and inter-generational costs associated with families involved with crime.


6.5. Conclusion

The research presented in this doctoral thesis provides a unique contribution and an important starting point for future research into the communication skills of young people in contact with the law in New Zealand. It provides new evidence to suggest that many of these young people are likely to struggle with aspects of our legal system because of its communication demands, and it also provides insight into some of the areas that could be targeted to support young people’s communication when engaging with professionals in the youth justice system.

Communication is an essential human skill. Its importance has been identified in international human rights law and in New Zealand-based legislation as a key component to ensure children and young people’s rights to due process. The findings of this doctoral research suggest that the young people in contact with New Zealand’s Youth Justice System should have their communication skills supported – through screening, intervention and professional education. Provision of speech-language therapy services in the youth justice sector will be a key component of ensuring this can happen.

~ Hapaitia te ara tika pumau ai te rangatiratanga mo nga uri whakatipu ~

Foster the pathway of knowledge to strength, independence and growth for future generations.
APPENDIX 1: Study 1 ethics approval (University of Auckland)

UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE

22-Mar-2012

MEMORANDUM TO:

Prof Suzanne Purdy
Psychology

Re: Application for Ethics Approval (Our Ref. 7831)

The Committee considered your application for ethics approval for your project titled The prevalence of auditory processing and communication disorders in male youth offenders residing at the Lower North Youth Justice Residence in New Zealand on 22-Mar-2012.

Ethics approval was given for a period of three years.

The expiry date for this approval is 22-Mar-2015.

If the project changes significantly you are required to resubmit a new application to the Committee for further consideration.

In order that an up-to-date record can be maintained, you are requested to notify the Committee once your project is completed.

The Chair and the members of the Committee would be happy to discuss general matters relating to ethics approvals if you wish to do so. Contact should be made through the UAHPEC secretary at humanethics@auckland.ac.nz in the first instance.

All communication with the UAHPEC regarding this application should include this reference number: 7831.

(This is a computer generated letter. No signature required.)

Secretary
University of Auckland Human Participants Ethics Committee

c.c. Head of Department / School, Psychology
Mrs Sarah Lount
Assoc Prof Douglas Elliffe

Additional information:
1. Should you need to make any changes to the project, write to the Committee giving full details including revised documentation.

2. Should you require an extension, write to the Committee before the expiry date giving full details along with revised documentation. An extension can be granted for up to three years, after which time you must make a new application.
3. At the end of three years, or if the project is completed before the expiry, you are requested to advise the Committee of its completion.

4. Do not forget to fill in the 'approval wording' on the Participant Information Sheets and Consent Forms, giving the dates of approval and the reference number, before you send them out to your participants.

5. Send a copy of this approval letter to the Manager - Funding Processes, Research Office if you have obtained funding other than from UniServices. For UniServices contract, send a copy of the approval letter to: Contract Manager, UniServices.

6. Please note that the Committee may from time to time conduct audits of approved projects to ensure that the research has been carried out according to the approval that was given.
APPENDIX 2: Study 1 ethics approval amendment (University of Auckland)

Office of the Vice-Chancellor
Research Integrity Unit

UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE

17-May-2013

MEMORANDUM TO:
Prof Suzanne Purdy
Psychology

Re: Application for Ethics Approval (Our Ref. 7831)

The Committee considered your request for change for your project titled The prevalence of auditory processing and communication disorders in male youth offenders residing at the Lower North Youth Justice Residence in New Zealand on 17-May-2013.

The Committee approved the following amendments:

1. To add Korowai Manaaki Youth Justice Residence in Auckland as a second research site for the project.

2. To change the study title from 'Examining the Auditory Processing and Communication Abilities of Male Youth Offenders Residing at Te Au rere a te Tonga Youth Justice Residence in New Zealand' to 'Examining the Auditory Processing and Communication Abilities of Male Youth Offenders Residing at Te Au rere a te Tonga Youth Justice Residence in New Zealand.'

The expiry date for this approval is 22-Mar-2015.

If the project changes significantly you are required to resubmit a new application to the Committee for further consideration.

In order that an up-to-date record can be maintained, it would be appreciated if you could notify the Committee once your project is completed.

The Chair and the members of the Committee would be happy to discuss general matters relating to ethics approvals if you wish to do so. Contact should be made through the UAHPEC secretary at humanethics@auckland.ac.nz in the first instance.

All communication with the UAHPEC regarding this application should include this reference number: 7831.

(This is a computer generated letter. No signature required.)

Secretary
University of Auckland Human Participants Ethics Committee

c.c. Head of Department / School, Psychology
Assoc Prof Douglas Elliffe
Mrs Sarah Lount
APPENDIX 3: Study 1 ethics approval (Ministry of Social Development)

27 July 2012

Sarah Lount
64 Dale Road,
Raumati South,
Paraparaumu 5032

Dear Sarah

RE RAC Application: Examining the Auditory Processing and Communication Profiles of Male Youth Offenders Residing at the Lower North Youth Justice Residence in New Zealand

Thank you for submitting an application to the Research Access Committee (RAC) for access to the Lower North Youth Justice Residence. Your application has been endorsed by the Chief Social Worker and you may proceed with your research, subject to the following conditions:

- That you review your understanding of the nature of the offending of young people in youth justice residences; not all young people are there for serious offences - some are there simply because of being an absconding risk or for breaching bail. These can occur following quite minor offences.
- The consent of the young person to participate in the research needs to be sought at about the same time as parental consent. Be mindful that there may be more than one guardian and ensure you obtain the appropriate consent from each guardian.
- We recommend that once the research is underway you also liaise as appropriate with Kaumatua at the Lower North Youth Justice Residence.
- We recommend that residential staff be consulted about the space that the young person is in prior to any interviews or contact. An unintended consequence of the contact with a researcher may be that the young person’s behaviour or mood deteriorates. We would not want to see a situation arise that resulted in the young person being placed in the secure unit following contact.

Access to CYF information is contingent on you signing the attached Deed of Confidentiality as an acceptance of the way in which information held by the Agency will be used by you. It also reflects the seriousness of any breach of the information privacy principles contained within the Privacy Act 1993.
Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount, Professor Suzanne Purdy and Dr Linda Hand

Dear Parent/Caregiver,

Kia ora and hello, my name is Sarah Lount and I am a postgraduate student studying for a Doctor of Philosophy in Speech Science at the University of Auckland. As part of my studies I am doing some research about the communication abilities, thinking skills, and listening skills of the young people who are staying at Youth Justice Residences.

I would like to invite your boy to participate.

I have signed a confidentiality agreement with CYFS keeping your contact details completely private.

Please read the information about the study carefully. Take your time to think about it and decide whether you and your boy would wish to take part in it. Taking part is completely voluntary (your choice) and if you decide you do not wish to take part, it will not affect your boy’s relationship with the Residence.

Background

Many international studies have shown that young people in the Youth Justice System may have more difficulties with their language and communication. Many of these difficulties are never discovered. At the moment, we do not know very much about the nature of listening, communication and language skills in young people in the Youth Justice System in New Zealand; however, we do know that difficulties with these skills are likely to make it harder for them to join in with their rehabilitation and education programmes.

Research aims: I am looking to see whether the young people staying at the Residences have any such difficulties with their listening, language or communication. Hopefully, my research will increase knowledge about these skills in the boys staying at Youth Justice Residences, and mean that they get the best possible help for their future.

What is involved?

With the support of your boy’s Case Leader and the Residence’s Manager, I hope to do individual assessments with a number of the boys currently staying at the Residence.
If you are happy for your boy to participate, he will do some computer-based listening games, such as identifying sound patterns and detecting sounds within noise to check their listening skills. He will also do a number of other tasks that will help describe his thinking, language and communication skills: he will be asked to point to and name pictures, listen to sounds and sentences, re-tell stories and follow patterns. An audio recording of some of your boy’s responses may be made so I can listen to it later.

With your permission, I would also like to do a basic, but not extensive hearing test. This includes a pure-tone hearing test, which will involve your boy raising his hand when he hears sounds at different pitches, and a middle ear check (tympanogram). For this test, a small earplug will be placed into your boy’s ear canal to make an airtight seal. This small device checks for fluid behind the eardrum. This procedure will not hurt or harm him in any way.

All of this will happen in a quiet room at the Youth Justice Residence over two 50-minute sessions.

If a problem is discovered, I will let you know. I will also inform you of any speech, language, or auditory processing difficulties, if I find any; however, if you do not wish to know results of this nature then you/your child should not participate.

I would also like your permission to talk to the Residence’s health team about any medications your boy may be receiving that could affect the listening tests. Please give your answer on the attached consent form.

Additionally, if you choose to allow your son to participate, and I find he has a hearing, speech, language, or auditory processing problem, your son will receive a referral through the Residence for further assessment and possible treatment. Your son’s Case Leader and the Residence’s health team will then ensure your son receives these services.

Confidentiality
All personal information will remain strictly confidential and no material that could personally identify your boy will be used in any report in this study. Names will not be used in any reporting of this research.

If the information you provide is reported or published, this will be done in a way that does not identify you or your son as its source. Data relating to the study will be stored in a locked cabinet at the Tamaki Campus of the University of Auckland and destroyed after six years.

Withdrawal from the study
You can withdraw your boy from the study at any time, or ask for their data to be withdrawn up until the 30th of December 2013. Your boy is also free to withdraw at any point during the testing. There are no risks associated with this research. The Residence’s Manager has given assurance that participation or non-participation of your boy will not affect his relationship with the Residence. You will not receive payment for participating but your involvement will not cost you anything.

If you are happy for your boy to participate in this research, please complete the consent form and return it in the self-addressed, pre-paid envelope.

Thank you very much for your time and help in making this study possible. If you have any questions, or would like to know more about this study, please feel free to contact me or my supervisor (contact details are provided below).
Yours sincerely,

Sarah Lount

I can be contacted on:
Sarah Lount
c/o Sue O’Shea
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 021 605678
Email: swig006@aucklanduni.ac.nz

My Supervisor is:
Associate Professor Suzanne Purdy
Speech Science
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 09 373 7599 ext. 82073
sc.purdy@auckland.ac.nz

The Head of Department of Psychology is:
Associate Professor Douglas Elliffe
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 09 373 7599 ext. 85262
d.elliffe@auckland.ac.nz

For any queries regarding ethical concerns please contact:
The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office-Office of the Vice Chancellor, Private Bag 92019, Auckland. Tel. (09) 373 7599 ext. 87830

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on the 22 March 2012 for a period of 3 years from 22/3/12 to 22/3/15, Reference Number 7831. This study was also approved by the Ministry of Social Development.
APPENDIX 5: Study 1 parent consent form (youth offender group)

Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount and Professor Suzanne Purdy

- I have read the Parent/Caregiver Information Sheet. I understand the nature of the study in which my child has been invited to participate. I have had the opportunity to ask any questions and have them answered.
- I confirm that I am the legal guardian / caregiver or parent of this child which empowers me with the legal authority to give consent to participate on his behalf.
- I understand that the researcher has signed a confidentiality agreement to keep my contact details private and confidential.
- I understand that my child will participate in two 45-minute long sessions in a quiet room at Youth Justice Residence.
- I understand that my child will be seen for assessment only, and asked to carry out a basic hearing test as well as language assessment tasks. Audio recordings of some of my child’s responses will take place (if you give permission).
- I understand that my child may choose to stop testing at any time without giving a reason.
- I understand that taking part in this study is voluntary and my child or I may make the decision to withdraw from the project, without giving a reason, up until the 30th of December 2013.
- I understand that my child’s participation or non-participation will not affect my child’s relations with the Residence.
- I understand that my child’s participation in this study is anonymous and no information that may identify my child will be used in any reports in this study. I also understand that if the information about my child is reported or published that this will be done in a way that does not identify my child as its source.
- I understand that the information gathered will not be used for any purposes other than this study.
- I understand that my child’s data will be stored in a locked filing cabinet at the University of Auckland’s Tamaki Campus and that all information will be destroyed after a period of six years.
- I understand that I may request the results of my child’s middle ear check.
- I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study.
- I have had time to consider whether I want my child to take part in the study.
- I know who to contact if I have any questions about the study.

I give consent for __________________________________________ (child's full name), who is under my guardianship, to participate in this research.

I give permission for audio recordings of my child’s responses YES / NO

188
I give permission for my child to have a basic hearing test (consisting of a middle ear check and a pure-tone audiometry) 

I would like to receive the results of my child’s hearing test 

I give permission for the researcher to look at my child’s medication records 

I give permission for my child’s results to be shared with my child’s Case Leader, Care Team and the Residence’s Manager.

Name of Parent/Caregiver: 

Signature of Parent/Caregiver: 

Date: 

Please return this signed consent form in the pre-paid, self-addressed envelope to:

Nikki Halford
Te Au rere a te Tonga Youth Justice Residence
19 Mohaka Place
Kelvin Grove
PALMERSTON NORTH 4414

Research Supervisor: 
Associate Professor Suzanne Purdy
Speech Science
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 09 373 7599 ext. 82073
sc.purdy@auckland.ac.nz

The Head of Department of Psychology is: 
Associate Professor Douglas Elliffe
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 09 373 7599 ext. 85262
d.elliffe@auckland.ac.nz

For any queries regarding ethical concerns please contact:
The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office-Office of the Vice Chancellor, Private Bag 92019, Auckland. Tel. (09) 373 7599 ext. 87830

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on the 22 March 2012 for a period of 3 years from 22/3/12 to 22/3/15, Reference Number 7831. This study was also approved by the Ministry of Social Development.
PARTICIPANT: INFORMATION SHEET
(to be read aloud, and then given to the participant to read)

Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount, Professor Suzanne Purdy & Dr Linda Hand

Kia ora and hello, my name is Sarah. I am a PhD student, studying at the University of Auckland. I am interested in finding out some things about your talking, your listening, and how you hear sounds. I will do some short activities with you so I can find out more about those things. We will record some of your answers.

I will probably see you more than once to do the activities. We will work together for about 45 minutes each time. During the time we are together, you will be allowed to stop the activities and have a break if you would like one. Each activity will take about 10-15 minutes.

If you decide later that you don’t want to do the activities with me anymore, we can stop and no one will mind.

When we have finished all the activities, I will talk to you about how easy or tricky you found them. I will write about some of your answers in a report for your parents, your Case Leader and Care Team, and Kyle Kuiti, the Residence Manager. No one else will know that the answers were yours.

Your answers will be kept for 6 years in a safe place.

Does that sound OK to you? Do you have any questions you want to ask me?

I can be contacted on:
Sarah Lount
c/o Sue O’Shea
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 021 605678 or 04-902-1566
Email: swig006@aucklanduni.ac.nz

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on the 22 March 2012 for a period of 3 years from 22/3/12 to 22/3/15, Reference Number 7831. This study was also approved by the Ministry of Social Development.
APPENDIX 7: Study 1 participant consent form (youth offender group)

DEPARTMENT OF PSYCHOLOGY
Speech Language Therapy

THIS ASSENT FORM WILL BE HELD FOR A PERIOD OF SIX YEARS

PARTICIPANT: ASSENT

Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount, Professor Suzanne Purdy and Dr Linda Hand

If you are happy to do this with me, I will need you to write your name on this piece of paper. First, I will ask you some questions just to make sure that you are happy to do this with me.
If you think the things that I read to you are true, say ‘yes’. If you don’t think they are true, say ‘no’.
  • I have had the research described to me, and have had the information sheet read to me.
  • I understand that Sarah will contact my family/caregiver to explain the research.
  • I understand that I will be given some activities to do that will take about 45 minutes to complete, over two sessions.
  • I understand that the activities will look at my talking and listening, and the way that I hear sounds.
  • I understand that Sarah will do a quick check of my ears.
  • I understand that I can decide to stop if I want to, and that everyone will be OK with that.
  • I understand that my parents/caregiver and Case Leader has allowed me to decide myself if I want to do this with Sarah or not, and everyone will be OK with that.
  • I understand that Sarah will keep my work very private. She might write some of my answers in a report for my Case Leader, Care Team and the Residence Manager, but no-one else will know that the answers are mine.
  • Sarah might write about some of my work in a report, but no-one else (apart from Sarah’s supervisor/teacher) will know that the answers are mine because my name will not be written in it.
  • I understand that my work will be kept for 6 years in a safe place.
  • Sarah has answered all the questions that I have.

If you would like to do this research with me, write or sign your name on the line below.

Young person's signature:

Young person’s name:

Today’s date:

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on the 22 March 2012 for a period of 3 years from 22/3/12 to 22/3/15, Reference Number 7831. This study was also approved by the Ministry of Social Development.
PARENT/CAREGIVER OF PARTICIPANT: INFORMATION SHEET
(control group)

Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount and Professor Suzanne Purdy

Dear Parent/Caregiver,

Kia ora and hello, my name is Sarah Lount and I am a postgraduate student studying for a Doctor of Philosophy in Speech Science at the University of Auckland. As part of my studies I am doing some research about the communication abilities, thinking skills, and hearing skills of the 14- to 17-year-olds staying at the Auckland and Palmerston North Youth Justice Residences. However, as part of this research, I am hoping to include a comparison (control) group of young people of a similar age who are not youth offenders and have no known hearing, listening or communication difficulties. I have the Principal’s permission to approach students from your son’s school to form part of the control group.

Your teacher has identified your son as someone who may be suitable to join in this study, and I would like to invite him to participate.

Please read the following information about the study carefully. Take your time to think about it and decide whether you would like your son to take part in it. Taking part is completely voluntary (your choice) and if you decided you do not want your son to take part, it will not affect your son’s relationship with the school.

Background
Many international studies have shown that young people in the Youth Justice System have more difficulties with their listening, language and communication. Many of these difficulties go undetected. At the moment, we do not know very much about the communication and language skills in young people in the Youth Justice System in New Zealand; however, we do know that difficulties with listening, language and communication are likely to have a negative effect on their rehabilitation and education.

This research aims to: Discover whether the young people staying at the Residence have more difficulties with their listening, language or communication than other young people of the same age, who are from the local community. It is hoped that increased knowledge about these skills in the young people staying at Youth Justice Residences will help provide them with better services to support them during their rehabilitation.

What is involved?
With the support of your son’s teacher and the school’s Principal, I intend to do individual assessments with a number of boys at your son’s school.

If you are happy for your son to participate, he will do some computer-based listening games, such as identifying sound patterns and detecting sounds within noise to check their listening skills. He will also do a
number of other tasks that will help describe his thinking, language and communication skills: he will be asked to point to and name pictures, listen to sounds and sentences, re-tell stories and follow patterns. An audio recording of some of your son’s responses may be made so I can listen to it later.

With your permission, I would also like to do a basic, but not extensive hearing test. This includes a pure-tone hearing test, which will involve your boy raising his hand when he hears sounds at different pitches, and a middle ear check (tympanogram). For this test, a small earplug will be placed into your son’s ear canal to make an airtight seal. This small device checks for fluid behind the eardrum. This procedure will not hurt or harm him in any way.

All of this will happen in a quiet room at the school over two 45-minute sessions.

If a problem is discovered, I will let you know. I will also inform you of any speech, language, or auditory processing difficulties that may be identified during the assessment process; however, if you do not wish to know results of this nature then you/your child should not participate.

Additionally, if you choose to allow your son to participate, and any problems are uncovered, I will provide you with a referral to Ministry of Education Special Education Services or a local audiologist for further assessment and possible treatment.

Confidentiality
All personal information will remain strictly confidential and no material that could personally identify your child will be used in any report in this study. Names will not be used in any reporting of this research.

Data relating to the study will be stored in a locked cabinet at the Tamaki Campus of the University of Auckland and destroyed after six years.

Withdrawal from the study
You can withdraw your son from the study at any time, or request for his data to be withdrawn up until the 30th of December 2013. Your son is also free to withdraw at any point during the testing. There are no risks associated with this research. The Principal has given assurance that participation or non-participation of your son will not affect his relationship with the school. You will not receive payment for participating but your involvement will not cost you anything. Your son will however be offered the choice of a $15 voucher to say thank you for his participation.

If you are happy for your son to participate in this research, please complete the consent form and return it to the school office.

Thank you very much for your time and help in making this study possible. If you have any questions, or would like to know more about this study, please feel welcome to contact me or my supervisor (contact details are provided below).

Yours sincerely,
Sarah Lount

I can be contacted on:
Sarah Lount
c/o Sue O’Shea
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 021-605-678 or 04-902-1566
Email: swig006@aucklanduni.ac.nz
For any queries regarding ethical concerns please contact:
The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office-
Office of the Vice Chancellor, Private Bag 92019, Auckland. Tel. (09) 373 7599 ext. 87830

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on the 22 March 2012 for a
period of 3 years from 22/3/12 to 22/3/15, Reference Number 7831. This study was also approved by the Ministry of
Social Development.
APPENDIX 9: Study 1 parent consent form (control group)

THIS CONSENT FORM WILL BE HELD FOR A PERIOD OF SIX YEARS

PARENT/CAREGIVER OF PARTICIPANT:
CONSENT FORM (control group)

Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount and Professor Suzanne Purdy

I have read the Parent/Caregiver Information Sheet. I understand the nature of the study in which my child has been invited to participate. I have had the opportunity to ask any questions and have them answered.
I confirm that I am the legal guardian / caregiver or parent of this child which empowers me with the legal authority to give consent to participate on his behalf.
I understand that my child will participate in two 45-minute sessions in a quiet room at the school.
I understand that my child will be seen for assessment only and asked to carry out basic hearing check as well as language assessment tasks. Audio recordings of some of my child’s responses may take place.
I understand that my child may choose to stop testing at any time without giving a reason.
I understand that taking part in this study is voluntary and my child or I may make the decision to withdraw from the project, without giving a reason, up until the 30th of December 2013.
I understand that my child’s participation or non-participation will not affect my child’s relationship with the school.
I understand that my child’s participation in this study is anonymous and no information that may identify my child will be used in any reports in this study. I also understand that if the information about my child is reported or published that this will be done in a way that does not identify my child as its source.
I understand that the information gathered will not be used for any purposes other than this study.
I understand that my child’s data will be stored in a locked filing cabinet at the University of Auckland’s Tamaki Campus and that all information will be destroyed after a period of six years.

• I understand that I may request the results of my child’s middle ear check.
• I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study.
• I have had time to consider whether I want my child to take part in the study.
• I know who to contact if I have any questions about the study.

I give consent for ____________________________ (child’s full name), who is under my guardianship, to participate in this research.

I give permission for audio recordings of my child’s responses  YES / NO
I give permission for my child to have a basic hearing test  YES / NO
(consisting of a middle ear check and a pure-tone audiometry)
I would like to receive the results of my child’s basic hearing test  YES / NO
Please return this form to the school office, or mail to:

Sarah Lount
64 Dale Road,
Raumati South,
Paraparaumu 5032

Research Supervisor:
Associate Professor Suzanne Purdy
Speech Science
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 09 373 7599 ext. 82073
sc.purdy@auckland.ac.nz

The Head of Department of Psychology is:
Associate Professor Douglas Elliffe
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 09 373 7599 ext. 85262
d.elliffe@auckland.ac.nz

For any queries regarding ethical concerns please contact:
The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office-Office of the Vice Chancellor, Private Bag 92019, Auckland. Tel. (09) 373 7599 ext. 87830

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on the 22 March 2012 for a period of 3 years from 22/3/12 to 22/3/15, Reference Number 7831. This study was also approved by the Ministry of Social Development.
APPENDIX 10: Study 1 participant information sheet (control group)

PARTICIPANT: INFORMATION SHEET (controls)
(to be read aloud, and then given to the participant to read)

Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount and Prof. Suzanne Purdy

Kia ora and hello, my name is Sarah. I am a PhD student, studying at the University of Auckland. I am interested in finding out about the communication abilities, thinking skills, and listening skills of young people (aged 14 to 17 years) who have been in trouble with the law and are staying at a youth residence.

I am also interested in finding out about these skills in a group of people of the same age, who are not staying at the residence. That is why I would like to include you in my study, if you agree to it.

If you decide to you want to participate, I will have a quick look at your ears, to check they are OK, and I will also do some short activities with you. I will record some of your answers.

We will work together twice, for about 45 minutes each time. During the time we are together, you will be allowed to stop the activities and have a break if you would like one. Each activity will take about 10-15 minutes.

If you decide later that you don’t want to do the activities with me anymore, we can stop and no one will mind.

When we have finished all the activities, I will talk to you about how easy or tricky you found them. I will write about some of your answers in a report for your family, if they want it. No one else will know that the answers were yours.

Your answers will be kept for 6 years in a safe place.

Does that sound OK to you? Do you have any questions you want to ask me?

I can be contacted on:
Sarah Lount
c/o Sue O’Shea
Department of Psychology
University of Auckland
Private Bag 92019, Auckland
Tel: 021 605678 or 04-902-1566
Email: swig006@aucklanduni.ac.nz

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on the 22 March 2012 for a period of 3 years from 22/3/12 to 22/3/15, Reference Number 7831. This study was also approved by the Ministry of Social Development.
APPENDIX 11: Study 1 participant consent form (control group)

Study title: Hearing, Auditory Processing and Communication Abilities of Male Youth Offenders in Youth Justice Residences in New Zealand

Investigators: Sarah Lount and Prof. Suzanne Purdy

If you are happy to do this with me, I will need you to write your name on this piece of paper. First, I will ask you some questions just to make sure that you are happy to do this with me. If you think the things that I read to you are true, say ‘yes’. If you don’t think they are true, say ‘no’.

- I have had the information sheet read to me.
- I understand that I will be given some activities to do today that will take about 45 minutes to complete, over two sessions.
- I understand that the activities will look at my talking and listening, and the way that I hear sounds.
- I understand that Sarah will do a quick check of my ears.
- I understand that I can decide to stop if I want to, and that everyone will be OK with that.
- I understand that Sarah has contacted my parents about doing the activities, and they have said it is OK.
- I understand that my teacher has allowed me to decide myself if I want to do this with Sarah or not, and everyone will be OK with that.
- I understand that Sarah will keep my work very private. She might write some of my answers in a report for my family and teacher. No one else will know that the answers are mine.
- Sarah might write about some of my work in a report, but no-one else (apart from Sarah’s supervisor/teacher) will know that the answers are mine because my name will not be written in it.
- I understand that my work will be kept for 6 years in a safe place.
- Sarah has answered all the questions that I have.

If you would like to do this with me, write or sign your name on the line below.

<table>
<thead>
<tr>
<th>Young person’s signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young person’s name:</td>
</tr>
<tr>
<td>Today’s date:</td>
</tr>
</tbody>
</table>
APPENDIX 12: Studies 2 & 3 ethics approval (University of Auckland)

UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE

03-Dec-2013

MEMORANDUM TO:

Prof Suzanne Purdy
Psychology

Re: Application for Ethics Approval (Our Ref. 010443)

The Committee considered your application for ethics approval for your project entitled Pathways Forward for Speech Language Therapy in the Youth Justice System in New Zealand.

Ethics approval was given for a period of three years.

The expiry date for this approval is 02-Dec-2016.

If the project changes significantly, you are required to submit a new application to UAHPEC for further consideration.

In order that an up-to-date record can be maintained, you are requested to notify UAHPEC once your project is completed.

The Chair and the members of UAHPEC would be happy to discuss general matters relating to ethics approvals if you wish to do so. Contact should be made through the UAHPEC Ethics Administrators at humanethics@auckland.ac.nz in the first instance.

All communication with the UAHPEC regarding this application should include this reference number: 010443.

(This is a computer generated letter. No signature required.)

UAHPEC Administrators
University of Auckland Human Participants Ethics Committee

C.c. Head of Department / School, Psychology
Mrs Sarah Lount
Dr Linda Hand
Prof Alan France
**Additional information:**

1. Do not forget to fill in the 'approval wording' on the Participant Information Sheets and Consent Forms, giving the dates of approval and the reference number, before you send them out to your participants.

2. Should you need to make any changes to the project, write to the UAHPEC Administrators by email (humanethics@auckland.ac.nz) giving full details of the proposed changes including revised documentation.

3. At the end of three years, or if the project is completed before the expiry, please advise UAHPEC of its completion.

4. Should you require an extension, write to UAHPEC by email before the expiry date, giving full details along with revised documentation. An extension can be granted for up to three years, after which a new application must be submitted.

5. If you have obtained funding other than from UniServices, send a copy of this approval letter to the Manager - Funding Processes, UoA Research Office. For UniServices contracts, send a copy of the approval letter to the Contract Manager, UniServices.

6. Please note that UAHPEC may from time to time conduct audits of approved projects to ensure that the research has been carried out according to the approval that was given.
APPENDIX 13: Studies 2 & 3 ethics approval amendment (University of Auckland)

Office of the Vice-Chancellor
Finance, Ethics and Compliance

UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE (UAHPEC)

15-Dec-2014

MEMORANDUM TO:
Prof Suzanne Purdy
Psychology

Re: Request for change of Ethics Approval Ethics Approval (Our Ref. 010443): Amendments Approved

The Committee considered your request for change for your project entitled Pathways Forward for Speech Language Therapy in the Youth Justice System in New Zealand and approval was granted for the following amendments on 15-Dec-2014.

The Committee approved the following amendments:

1) To include Dr Alan France to the research study.
2) To update the address details.
3) To include request for an email address to send transcripts.

The expiry date for this approval is 03-Dec-2016.

The expiry date for this approval is.

If the project changes significantly you are required to resubmit a new application to the Committee for further consideration.

In order that an up-to-date record can be maintained, it would be appreciated if you could notify the Committee once your project is completed.

The Chair and the members of the Committee would be happy to discuss general matters relating to ethics approvals. If you wish to do so, please contact the UAHPEC Ethics Administrators at ethics@auckland.ac.nz in the first instance.

Please quote reference number: 010443 on all communication with the UAHPEC regarding this application.

(This is a computer generated letter. No signature required.)
UAHPEC Administrators
University of Auckland Human Participants Ethics Committee

c.c. Head of Department / School, Psychology
   Prof Alan France
   Prof Suzanne Purdy
Supplemental Material 1: Description of Youth Justice Residences in New Zealand:

In New Zealand there are four Child, Youth and Family Youth Justice Residences that cater for young people between the ages of 14-17 who are subject to Youth Court matters.

The young people are either subject to a Supervision with Residence Order or sentence or they are on a remand status. Those subject to the former can receive an order from the Courts of between 3-6 months and must serve at least two thirds of that order in residence. The length of a remand stay fluctuates based on a number of factors, including community placement options and the nature of the charges a young person is facing. Often those young people who serve a Supervision with Residence Order have already spent some time in residence on remand.

The charges young people in residence face vary significantly. A young person may be remanded for a short period of time for breaching the conditions of his community based Youth Court order, while more appropriate conditions or options are considered. At the other end of the spectrum, they may be remanded facing purely indictable charges. A Supervision with Residence Order is the highest order a Youth Court judge can impose. Young people may have their matters transferred to the jurisdiction of the District of High Courts depending on their charges, but can remain on remand in residence until sentencing.

At the residence, young people attend an onsite school and are assessed by a full-time medical team. The residence is also serviced by a Youth Forensic Team, addressing significant mental health needs and there is also provision for Alcohol and Other Drug counselling.

Supplemental Material 2: Details of the auditory processing tasks:

Dichotic Digits Test (DDT) and Frequency Pattern Test (FPT):

A total of 20 trials of DDT (two pairs per trial) were used and there were 14 FPT stimuli per ear; the start ear for the FPT was randomised for each participant. Each of these tasks included training components: five presentations for the DDT and two for FPT. Task performance was expressed as percentage correct.

Frequency discrimination (FD) and backward masking with a 0 millisecond gap (BM-0ms):

The FD and BM-0ms tests were administered after the DDT and FPT using IHR Multi-centre study of Auditory Processing System for Testing Auditory Responses-2 (IMAP-STAR2; Chilekwa et al., 2009) software run on a calibrated Dell laptop with Sennheiser HD 25-1 II headphones. The order of presentation of these two tests was randomised by the computer software. The order of presentation of these two tests was randomised by the computer software. Both the FD and BM-0ms tests consisted of two tracks, each of 20 trials. Each trial involved three sequential stimuli, with two identical, standard tones (1 kHz) and a different, randomly ordered, target tone; the listener then had to select (using a computer mouse) the “odd one out”. For the FD test, the 200-millisecond target tone had a higher frequency than the standard tones, and for BM-0ms, a 20-millisecond pulse-tone target occurred immediately (0-millisecond gap) before a longer block of noise centred at 1000 Hz with a bandwidth of 800 Hz. For both tests, the difference between the standard and target tones varied between successive trials using a 3-down/1-up adaptive-staircase paradigm (Moore et al., 2008). The FD and BM-0ms tests also included two familiarisation tracks of six trials each. FD and BM-0ms thresholds were calculated as the geometric mean (FD) or arithmetic mean (BM-0ms) of the last three trial scores.
APPENDIX 16: Study 1 supplemental material 4: Individual audiograms of participants with slight or mild hearing loss.

Youth offender and remandee group

Frequency in kHz
Control group

Level in dB HL re: ANSI 1989

Frequency in kHz
APPENDIX 17: Youth Offender Interview Schedule

Introduction and informed consent

The focus is on setting up an environment where the participants understand what is happening, feel safe and can ask any questions they may have.

1. Make sure that interviewee is comfortable before starting.
2. Check that there is no objection to the use of the audio recorder.
3. Read out the information sheet and consent form. Reiterate that participation and all of the answers are confidential, and that the young person can stop or withdraw from the interview at any point.
4. Obtain signed consent.
5. Reassure young person that there are no right or wrong answers, and their experiences and views are unique and very important for people to hear about.
6. General conversation to put young person at ease (e.g. sports they’re interested in etc).

Sentence, ethnicity and spoken languages:

- Record what type of sentence they received (e.g. on remand, sentenced in Youth Court, or High Court).
  1) (depending on sentence) Have you had a Family Group Conference (FGC)? Did you talk to Police Youth Aid Officers? Have you been to court? Which court?
    - Record ethnicity.
    - Where English may be second language:
  2) What languages do you speak? And understand? What language did your favourite person growing up speak? Do you think or have thoughts in that language? Is it easier in that language?

Language-related questions:

The following questions are a guide only, and may vary in the style in which they are delivered, or whether they are asked at all (answers may be given without the question needing to be asked). General follow-up questions may occur, depending on the participant’s response. These will be open questions to avoid being leading questions. Each section of questions will be described to the participant before the specific questions are asked.

Section 1

The questions I am about to ask are to do with hearing, talking and understanding when you were first arrested.

1) What were the Police like to talk to? Prompts: why do you think it is like that? Can you give me an example of that?
2) What was it like for you understanding what the Police said? Prompts: why do you think it is like that? Can you give me an example of that?
3) What was it like for you hearing what the Police said? Prompts: why do you think it is like that? Can you give me an example of that?
4) Were some Police officers easier or harder to speak to/understand/hear? Prompts: why do you think that is?
Section 2

The questions I am about to ask are to do with hearing, talking and understanding at your FGC.

1) What was it like for you talking at the FGC? Prompts: why do you think it is like that? Can you give me an example of that?

Probe: Who was the easiest to talk to at the FGC? Prompts: why were they easiest? Were there other people you found easy to talk to? Why?

Probe: Who was the hardest to talk to at the FGC? Prompts: why were they the hardest? Were there other people you found hard to talk to? Why?

Probe: What did you do when X was hard to talk to? Prompts: why?

Probe: What do you think could have made things easier? Prompts: why is that?

2) What was it like for you understanding things at the FGC? Prompts: why do you think it is like that? Can you give me an example of that?

Probe: Who was the easiest to understand at the FGC? Prompts: why were they easiest? Were there other people you found easy to understand? Why?

Probe: Who was the hardest to understand at the FGC? Prompts: why were they the hardest? Were there other people you found hard to understand? Why?

Probe: What did you do when X was hard to understand? Prompts: why?

Probe: What do you think could have made things easier? Prompts: why is that?

3) What was it like for you hearing things at the FGC? Prompts: why do you think it is like that?

Probe: Was it the words they were saying? or the speed? or the loudness?

Probe: Who was the easiest to hear at the FGC? Prompts: why were they easiest? Were there other people you found easy to hear? Why?

Probe: Who was the hardest to hear at the FGC? Prompts: why were they the hardest? Were there other people you found hard to hear? Why?

Probe: What did you do when X was hard to hear? Prompts: why?

Probe: What do you think could have made things easier? Prompts: why is that?

Section 3

The questions I am about to ask are to do with hearing, talking and understanding in court.

1) What was it like for you talking in court? Prompts: why do you think it is like that? Can you give me an example of that?

Probe: Who was the easiest to talk to in court? Prompts: why were they easiest? Were there other people you found easy to talk to? Why?

Probe: Who was the hardest to talk to in court? Prompts: why were they the hardest? Were there other people you found hard to talk to? Why?

Probe: What did you do when X was hard to talk to? Prompts: why?

Probe: What do you think could have made things easier? Prompts: why is that?

3) What was it like for you understanding things in court? *Prompts: why do you think it is like that? Can you give me an example of that?*

Probe: Who was the easiest to understand in court? *Prompts: why were they easiest? Were there other people you found easy to understand? Why?*

Probe: Who was the hardest to understand in court? *Prompts: why were they the hardest? Were there other people you found hard to understand? Why?*

Probe: What did you do when X was hard to understand? *Prompts: why?*

Probe: What do you think could have made things easier? *Prompts: why is that?*

4) What was it like for you hearing things in court? *Prompts: why do you think it is like that?*

Probe: Was it the words they were saying? or the speed? or the loudness?*

Probe: Who was the easiest to hear in court? *Prompts: why were they easiest? Were there other people you found easy to hear? Why?*

Probe: Who was the hardest to hear in court? *Prompts: why were they the hardest? Were there other people you found hard to hear? Why?*

Probe: What did you do when X was hard to hear? *Prompts: why?*

Probe: What do you think could have made things easier? *Prompts: why is that?*

Section 4

The questions I am about to ask are to do with hearing, talking and understanding people here at the residence.

1) What was it like for you talking at the residence? *Prompts: why do you think it is like that? Can you give me an example of that?*

Probe: Who was the easiest to talk to at the residence? *Prompts: why were they easiest? Were there other people you found easy to talk to? Why?*

Probe: Who was the hardest to talk to at the residence? *Prompts: why were they the hardest? Were there other people you found hard to talk to? Why?*

Probe: What did you do when X was hard to talk to? *Prompts: why?*

Probe: What do you think could have made things easier? *Prompts: why is that?*

2) Who talks well at the residence? *Prompts: why do you think it is like that? Does anyone else? Why?*

3) What was it like for you understanding things at the residence? *Prompts: why do you think it is like that? Can you give me an example of that?*

Probe: Who was the easiest to understand at the residence? *Prompts: why were they easiest? Were there other people you found easy to understand? Why?*

Probe: Who was the hardest to understand at the residence? *Prompts: why were they the hardest? Were there other people you found hard to understand? Why?*

Probe: What did you do when X was hard to understand? *Prompts: why?*

Probe: What do you think could have made things easier? *Prompts: why is that?*
4) What was it like for you hearing things at the residence? Prompts: why do you think it is like that?

Probe: Was it the words they were saying? or the speed? or the loudness?

Probe: Who was the easiest to hear at the residence? Prompts: why were they easiest? Were there other people you found easy to hear? Why?

Probe: Who was the hardest to hear at the residence? Prompts: why were they the hardest? Were there other people you found hard to hear? Why?

Probe: What did you do when X was hard to hear? Prompts: why?

Probe: What do you think could have made things easier? Prompts: why is that?

Section 5

I have some general questions about talking, understanding and hearing. They are about any time in your life, not just to do with what we’ve just been talking about:

1) Have there been times you’ve struggled to say what you want?

Probe: Was it the words, or getting the sentences out right? Prompts: what was that like for you?

Probe: What do you do when that happens? Prompts: why did you choose to do that?

Probe: What do you think would have made it easier, or would have helped? Prompts: why is that?

2) Have there been times you’ve struggled to understand things? Prompts: why do you think it is like that? Can you give me an example of that?

Probe: What do you do when that happens? Prompts: why did you choose to do that?

Probe: What do you think would have made it easier, or would have helped? Prompts: why is that?

3) Have there been times you’ve struggled to hear things? Prompts: why do you think it is like that? Can you give me an example of that?

Probe: What do you do when that happens? Prompts: why did you choose to do that?

Probe: What do you think would have made it easier, or would have helped? Prompts: why is that?

Section 6

I have heard that young people at the residence have your own set of words that you use with each other.

1) Are there times the adults, like the Police, lawyers or staff here, find it hard to understand you or your words?

2) Is it sometimes good to have words you understand but the adults don’t?

Prompts: Can you tell me about a time that happened?

When do you use it?

Why do you use it?

Is there anything else to do with talking or understanding things that we haven’t talked about today?

Do you have any questions?
APPENDIX 18: Youth Justice Professional Interview Schedule

Section 1: Introduction and informed consent

Go through the Information Sheet and Consent Form.

Ask about recording interview and whether they want to review the transcript.

Explain project and its aims.

Any questions?

Section 2: Participant background information

1) Tell me about your work with young people in the justice system.
   Probes: how long have your worked in your position? your experience ... 

Section 3: Communication questions

1) Tell me how a typical meeting or interaction with a youth offender goes for you…

2) Tell me about the issue of communicating with youth offenders. How well do you think they understand what people are saying to them?
   Probes:
   Can you tell me about an example of that?
   How did the youth offender seem to you in that situation?
   Does it happen often, in your experience?
   What do you do when you think they don’t understand?
   Is there anything else about their understanding that you’ve noticed?

3) What about talking? How well do you think they can tell you what they need to tell you?
   Probes:
   Can you tell me about an example of that?
   What was that like?
   How often does that happen?
   What do you do when you think they can’t say what they want or need to?
   Is there anything else about their talking or explaining things that you’ve noticed?

4) What do you think would have made it easier, or would help the young people’s communication?

5) Finally, is there anything that we haven’t covered that you’d like to tell me about communicating with youth offenders?

   Thank you very much for your time, I really appreciate it.
References


Bishop, D. V. M., Bishop, S. J., Bright, P., James, C., Delaney, T., & Tallal, P. (1999). Different origin of auditory and phonological processing problems in children with language


220


Peirse-O’Byrne, K. (2014). Identifying and responding to neurodisability in young offenders: Why, how, this needs to be achieved in the youth justice sector. (Bachelor of Laws(Hons) Dissertation). University of Auckland, Auckland, New Zealand.


Whitmire, K. A. (2000). Cognitive referencing and discrepancy formulae: Comments from ASHA resources. *ASHA Special Interest Division 1, Language Learning and Education Newsletter, 7*, 13–16.


