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Oral language competence and interpersonal violence: Exploring links in incarcerated young males

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Summary

Oral language competence is a basic prerequisite for functional and prosocial development across the lifespan, but has been inadequately investigated in young people in whom behaviour disturbance is the dominant concern. Previous work in Australia and overseas has shown that young offenders serving community-based orders are at high-risk for undetected but clinically significant oral language (everyday talking and listening) difficulties. However this phenomenon has received little attention in incarcerated samples, and links with offending severity, mental health, and other markers of early risk (e.g., a history of early Out of Home Care placement) have not been systemically examined.

A cross-sectional examination of one hundred (100) young offenders (mean age 19.03 years, SD = .85) completing custodial sentences in Victoria, Australia was carried out. Participants were assessed on a range of standardised oral language, IQ, mental health and offending-severity measures. Language measures were selected for their sensitivity to a range of everyday linguistic competencies, such as listening comprehension, the ability to define words, and to understanding of everyday idioms and other forms of non-literal language.

Language impairment (LI) was operationally defined as performance below two standard deviations below the mean on two standardised language measures (the CELF4 and the TLC-E). Forty-six percent of participants were classified as language impaired (LI), using this definition.

When the subgroup with high offending scores was compared with those with (relatively) lower offending scores, significant differences on a range of language measures were identified. A range of early risk indicators (such as placement in Out of Home Care) was also examined with respect to language impairment in this high-risk group.

Unidentified oral language impairments are over-represented in young men in the justice system, and may serve to further marginalise this already disadvantaged group. Implications for early intervention, passage through the justice system, and receipt of therapeutic services are discussed. Young

offenders should be routinely screened for LI and interventions should be tailored accordingly.

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Background

Serious young offenders are socially and economically expensive and challenging at every stage of their passage through the education and justice systems. They are often victims (of disadvantage and / or maltreatment) as well as being perpetrators of harm (O'Connor & Scott, 2006). Histories of maltreatment and social marginalisation mean that they require complex multisystemic interventions, yet evidence indicates that the justice system frequently fails in its efforts to set these young people on a pathway away from antisocial behaviour upon release from a custodial sentence (Holland, Pointon & Ross, 2007).

Given the intensive services and resources they require, young offenders represent a large burden on society, in financial, educational, welfare, and judicial terms, with much of this cost reflecting gaps in our understanding of pathways by which some high-risk young people disengage from, and in turn might be re-engaged with, the mainstream. Interpersonal competence is a basic prerequisite for productive and prosocial lives away from the corrections system. Oral language competence is central to interpersonal behaviour but has only been considered in relation to this population in recent years. It was estimated in the UK in 2006 that a 16 year old male with speech, language and social deficits would cost the community an average of £200,000, assuming a custodial sentence can be averted; if not, in excess of a further £100,000 could be added to the bill (Hartshorne, 2006). Another UK-based analysis (Barrett et al., 2006) reported that an estimated £1000 million per year is spent on "processing and dealing with young offenders" (p. 541

Research in Australia (Snow & Powell, 2004a,b; 2005; 2008) has contributed to a small but growing body of international research on the oral language skills of young offenders. These studies, together with work from the USA (e.g., Blanton & Dagenais, 2007; Sanger, Moore-Brown, Magnuson & Svoboda, 2000) and the UK (Bryan, 2004; Bryan, Freer & Furlong, 2007) show that in addition to being socially and educationally marginalised, young offenders (particularly males) are at high risk of experiencing unrecognised oral language impairments, as evidenced by significantly compromised performance on standardised language measures when compared with

controls of similar ages and demographic backgrounds. Snow and Powell (2008) found that over 50% of a sample of young offenders on community orders could be classified as language impaired, using measures of comprehension and verbal expression, particularly where these were sensitive to the processing and manipulation of abstract language. Snow and Powell also found that oral language skills and social skills were poorly correlated in the offender sample, in contrast to non-offending controls, in whom a significant positive correlation existed. This suggests that high risk young people acquire and utilise both sets of skills in a haphazard manner during the developmental period. It is to be expected then, that with exposure to more complex interpersonal interactions, limitations in their communication repertoire will become more apparent, and incur greater social penalties.

Oral language competence also underpins the acquisition of literacy skills in the early school years, and subsequent academic achievement (Catts, Fey & Tomblin, 2002). Reading achievement has been reported to be mediated by school performance more broadly (Brownlie et al., 2004), so it is unsurprising that in a recent study of a community sample of young offenders (Snow & Powell, 2008), 64% had left school before the end of year 8, and although 61.5% of the language-impaired young offenders reported having received some form of early intervention (e.g., Reading Recovery) this did not avert their early detachment from school. Instead, they departed the education system prematurely and without marketable employment skills - further exacerbating the risk of ongoing social marginalisation.

Oral language deficits in boys have been closely linked with the development of externalising behaviours, such as conduct difficulties and serious ongoing disorders of self-regulation (Beitchman et al., 1999). While a number of cross-sectional studies have shown associations between language and behaviour problems in childhood (e.g., Cohen et al., 1993) longitudinal studies have pointed more clearly to the role of reduced oral language competence as a specific risk factor for adverse outcomes. Beitchman and co-workers (1999; 2001; Brownlie et al., 2004) reported that developmental language problems in boys predict engagement in antisocial activity by age 19. In their longitudinal cohort study of speech and language impaired children identified

at age 5, Brownlie. et al found that at age 19 there was a direct effect of childhood language impairment on late adolescent delinquency, and this effect remained after control for verbal IQ. In considering the likely aetiological pathways at work, these workers argued that the role of language in social regulation, perspective taking, and mediating interpersonal exchanges with others may account for the adverse psychosocial outcomes in boys with developmental language problems. Two Australian longitudinal studies of large birth cohorts (Bor, McGee, & Fagan, 2004; Smart et al., 2003) have reported that poor language ability in the early years increases the risk of antisocial behaviour at age 14.The authors of both studies have argued therefore that overcoming oral language deficits in the early years should be a focus of prevention and early intervention strategies aimed at reducing the prevalence of antisocial behaviour. In the absence of such targeted and strategic efforts (and arguably even in their presence), some high-risk young people will unfortunately still “slip through the net” and commit crimes of sufficient gravity that a period of incarceration is deemed necessary. These young people were the focus of this study, as they are likely to remain on the margins of society across the lifespan unless intervention effectiveness can be enhanced.

The high cost of youth offending is compounded by the absence of effective treatments. Both researchers and clinicians have struggled to develop effective interventions for young offenders, particularly in the case of those who commit violent crimes and are high risk for re-offending. Recent Australian evidence (Holland, Pointon & Ross, 2007) showed that some 60% of offenders aged 17-20 sentenced to custodial terms will return to prison within two years, compared to 5% of prisoners aged 50 and over. Recidivism in young offenders is strongly correlated with violent offending (Kenny & Press, 2006). Violence, in turn is a form of dysfunctional interpersonal behaviour.

Language competence is central to interpersonal success, but if compromised, can further stigmatise and marginalise the young person, e.g., in their interactions with the justice system, whether this be in the initial police interview, interviews with lawyers, or responding to questions in court (Snow

& Powell, 2004b). Where linguistic competence is lacking, the young person is likely to revert to minimal responses such as “yep”, “nup”, “dunno” and “maybe”. If these are accompanied (as is often the case) by poor eye contact and shrugs of the shoulders, it is likely that negative impressions will be formed about the young person’s authenticity / level of respect for the judicial process. Such negative judgements are likely to result in further social marginalisation. Unrecognised oral language deficits may therefore compromise the young person’s passage through the youth justice system, and their inadequate verbal responses may be mistaken for deliberate rudeness and wilful non-compliance when being interviewed by police or cross-examined in court – as suspects, victims, or witnesses.

Depression and anxiety are over-represented in the young offender population (Ryan & Redding, 2004), yet this group is likely to be further disadvantaged by the reduced efficacy of otherwise evidence-based interventions such as Cognitive Behaviour Therapy (CBT) for populations with compromised verbal skills (Sams, Collins & Reynolds, 2006). Ryan and Redding also stressed the role of disruptive and aggressive behaviours as ways of expressing depression in high-risk boys. To date however, associations between language impairment and mental health problems do not seem to have been explored in the young offender population.

Sadly, many young offenders reach youth justice via the Child Protection system, as has been shown in both Australian (e.g., Stewart, Livingston & Dennison, 2008) and overseas studies (Courtney & Dworsky 2006; Tweddle 2007). This is significant (a) because it is known that children who are victims of maltreatment face a higher risk of language impairment (see Snow, 2009a), and (b) because it means an early intervention opportunity has already been missed.

In our most recent study (Snow & Powell, 2008) important questions were unanswered about comorbidity between violent offending and oral language impairment in a community sample (n=50) of young offenders. We found that violent offending (present in 13% of the sample) appeared to be evenly distributed across the language impaired and non-language impaired offender subgroups. It is likely that the generally low prevalence of violent offending in

young offenders on community-based orders made this association difficult to examine. The optimal way of testing this association, therefore, is to examine the nature and extent of oral language impairments in a *custodial* sample, in whom violent offending is more strongly represented.

Study aims

The first aim of this study, therefore, was to describe the nature and extent of oral language impairment in an incarcerated sample of young male offenders. It was hypothesised that oral language deficits would be present in a higher proportion of incarcerated young male offenders than in a community sample (in which we have previously reported a prevalence of 52%; Snow & Powell, 2008). This hypothesis reflects the notion of a “dose-response” relationship between risk exposure and adverse outcomes in the developmental years.

The second aim of the study was to explore the relationship between oral language competence and the nature and severity of the offending histories in an incarcerated sample of young male offenders. We also examined the extent to which mental health problems such as depression and anxiety might be over-represented in young offenders with a language impairment. Finally, we wished to explore the role of other developmental threats, in particular the experience of having been placed in Out of Home Care placement, with respect to oral language impairment and violent offending as outcome variables. The study was approved by the Monash University Human Research Ethics Committee and also by the Victorian Department of Human Services Research Committee.

METHOD

Participants

A cross-sectional consecutive sample of n=100 young offenders completing custodial sentences at a Youth Detention Centre in Victoria[1], Australia was studied. In our previous research, we excluded young people with a known history of traumatic brain injury, hearing impairment, psychiatric illness with psychotic features (e.g., schizophrenia, bipolar affective disorder) and / or intellectual disability. As noted elsewhere, however (Snow & Powell, 2008), these exclusions almost certainly resulted in an *under*-estimation of the true prevalence of language impairment in the youth offender population. In this study, therefore, we noted, but did not exclude participants whose histories were positive for these. Participants were only included if they had completed their schooling in an English-speaking country.

Measures

The following language measures were administered:

Three subtests of the Test of Language Competence – Expanded edition (Wiig & Secord, 1989):

Subtest 1 (Ambiguous Sentences) requires the interpretation of sentences with lexical, surface structural, and underlying structural ambiguities, for which two alternative meanings are identified and explained by the participant, e.g., "John was looking up the street" – he was either standing on the footpath looking up the street, or he was looking up the street in a map.

Subtest 2 (Listening Comprehension: Making Inferences) requires the drawing of inferences based on incomplete information which is presented as an event chain, by choosing two plausible story outcomes from four choices.

Subtest 4 (Figurative Language) requires the participant to interpret metaphoric expressions, by selecting an alternative from a choice of four options, e.g., recognising that "There is rough sailing ahead of us" has a non-literal meaning concerning difficult times. In each of these subtests, the

[1] This centre accommodates young offenders aged 17-21, as Victoria operates a "dual track" system for older young offenders, in an effort to delay or avert their entry into the adult corrections system.

participant both heard and saw the printed stimuli, which were placed in clear view and read aloud by the examiner.

The Core Language Score was derived from four subtests of the Clinical Evaluation of Language Fundamentals, 4th edition (CELF4; Australian standardisation; Semel et al., 2003). The Core Language Score is derived from the following scales: Recalling Sentences, Formulated Sentences, Word Classes (Receptive and Expressive) and Word Definitions. The CELF4 provides detailed, norm-referenced data and is widely used in Australia and overseas, in both clinical and research circles, as the accepted measure to determine the presence of a clinical language disorder and entitlement to specialist services (e.g., Speech Language Pathology services in schools).

Both the CELF4 and TLC-E were included in this study because they assess different aspects of language competence. Where the CELF4 is concerned with "structural" aspects of language (e.g., word definitions), the TLC-E looks at the ability to use and understand figurative language such as metaphor, and the ability to recognise more than one possible meaning in an utterance. Oral language competence in everyday life draws on the ability to operate at both the structural and metalinguistic levels (Nippold, 2007).

A story-based picture description task (The "flowerpot Incident") was also used, in an effort to examine participants' narrative discourse skills. This task has been employed in our previous studies (Snow & Powell, 2004, 2008), and we have published a scoring rubric (Snow & Powell, 2004) that considers both quantitative aspects (the number of story grammar elements present) and qualitative aspects (the nature and amount of detail provided within each story grammar element). Previous workers (Hedberg & Stoel-Gammon 1986; Westby, 1982) have emphasised the everyday importance of narrative competence as a linguistic skill. It as included here both as a means of assessing an important aspect of linguistic competence, and because of its specific relevance to the forensic setting, in which an individual needs to be able to "tell their story".

The Depression, Anxiety and Stress Scale (DASS, Lovibond & Lovibond, 1995) was used to detect high-prevalence mental health problems and

quantify these as possible comorbidities with language impairments. This tool provides separate scores for depression, anxiety and stress, which the individual rates on a series of 4-point ordinal scales. Scores on each parameter are considered to reflect no abnormality, or mild, moderate, severe, or “very severe” dysfunction. The DASS has been shown to have robust psychometric properties (e.g., Antony, Bieling, Cox, Enns & Swinson, 1998). Self-report data was collected about history of diagnosis of Attention Deficit Hyperactivity Disorder (ADHD), traumatic brain injury resulting in loss of consciousness, diagnosis of psychiatric illness with psychotic features, and hearing impairment. Self-report data was also collected about participants’ past involvement with Child Protection authorities, (and in particular, their placement in Out of Home Care), and also about receipt of intervention services in the early school years, e.g., speech therapy, Reading Recovery, and / or other specific assistance.

The Matrices subtest of the Kaufman Brief Intelligence Test, 2nd edition (Kaufman & Kaufman, 2004) was employed as a measure of nonverbal intelligence, so that language profiles could be examined against an estimate of IQ. This test is designed to measure fluid intelligence i.e., the ability to problem-solve through the perception of nonverbal relationships, and by completing nonverbal analogies.

The Cormier-Lang Crime Index (CLCI; Quinsey, Harris, Rice & Cormier, 1998) was used to quantify offending behaviour, based on detailed scrutiny of departmental files. The CLCI takes into account both the number and severity of offences in the conviction history, and yields three continuous scores, one each for violent and non-violent offending, and a total score. Convictions, rather than charges, were used as the variable of interest. Note was also made of the circumstances of the conviction that resulted in the current period of incarceration, and this was classified as property only, or involving interpersonal violence.

Procedures

With their Key Workers acting as intermediaries for the purposes of informed consent, participants were recruited sequentially in the intake unit of the detention centre. Assessments were all completed by the same Research

Assistant, in a single session. No participant was assessed if, on clinical grounds, they appeared to be distressed or substance-affected. Scoring accuracy was double-checked by the first author on the first 25 cases, to ensure adherence with the manual guidelines.

Results

Descriptive statistics pertaining to demographic, language and mental health measures are displayed in Table 1.

Table 1: Characterising the sample as a whole: Descriptive Statistics on demographic and standardised language test measures.

Variable	Mean	SD
Age (years)	19.03	.85
Years of formal education	9.8	1.7
K-BIT2 Matrices Subtest Standardised Score	86.0	16.4
TLC-E Subtest 1 Ambiguous Sentences Standardised Score	4.6	2.3
TLC-E Subtest 2 Listening Comprehension Standardised Score	5.1	2.5
TLC-E Subtest 4 Figurative Language Standardised Score	5.2	2.7
CELF4 Recalling Sentences	5.2	3.2
CELF4 Formulating Sentences	5.2	3.5
CELF4 Word Classes (Rec)	5.7	3.2
CELF4 Word Definitions	6.1	4.0
CELF4 Core Language	71.4	19.5
DASS Depression Score	9.9	9.2
DASS Anxiety Score	7.8	6.2
DASS Stress Score	15.1	8.7

Descriptive statistics pertaining to the performance of the sample as a whole are displayed in Table 2.

Table 2 Narrative Discourse descriptive statistics pertaining to productivity (syllables) and content (story grammar elements)

	Mean	SD
Narrative discourse total syllables	96.5	38.6
Narrative discourse total SG elements present (7)	5.4	.96
Narrative discourse SG adequacy score	7.5	2.1

Because scores on the CLCI scales were highly skewed, medians rather than means were used as a basis for analysis. The medians and inter-quartile ranges for the group as a whole are displayed in Table 3. Scores above the 75th percentile on each of the CLCI scales were classified as "extremely high scores". Eight participants had such scores on the Violence scale, and 46 had extremely high scores on the Non-Violence scale. Seven of the eight participants with extremely high scores on the Violence Scale also had such scores on the Non-Violence scales. Twenty-six people had extremely high scores on the Total scale. Examination of the convictions that resulted in the current period of incarceration showed that a large majority (n=87) had committed offences that involved some interpersonal violence (e.g., assault).

Table 3: Cormier Lang Crime Index (Violent and Nonviolent Offending, and Total) Scores: Descriptive Statistics for the sample (n=100) as a whole.

	Median	Inter-Quartile range
Violent offences	8.5	3-45
Non-violent offences	12.5	5 – 19.5
Total	27.5	12 – 66.5

Characterising language impairment in the sample

Fifty participants were identified as language impaired (LI) on the CELF4 (as defined by a standard score below two SDs below the mean), and 59 on at least two subtests of the TLC-E (using the same cut-off). A score below this cut-ff on *either* (two of the three) TLC-E subtests *and* on the CELF4 Core Language Score was the operational definition of LI. Forty-six (46) participants overall were identified as LI using this definition.

The LI subgroup mean standard score on the K-BIT Matrices (80.4, SD=16.7) was significantly lower than that of the non-LI subgroup (M=90.8, SD=14.5; t=-3.3, p=.001). There was a modest and statistically significant positive correlation between CELF4 Core Language standard scores and KBIT Matrices scores for the group as a whole (r=.39, p = .000), however this association was not present in the 46 participants who were identified as LI (r=.053, p=.73). The LI subgroup did not differ significantly from the non-LI subgroup with respect to any DASS scores.

Significant differences were evident on the scores of the two LI subgroups on the narrative content measures, as summarised in Table 4, however the two subgroups did not differ with respect to total output (measure in syllables per narrative sample). .

Table 4 Descriptive and Inferential Statistics pertaining to Narrative Discourse measures for the Language Subgroups.

	LI (n=46)		**Non-LI (n=54)**			
	Mean	SD	Mean	SD	t	p
Narrative discourse total syllables	94.3	40.2	98.3	37.4	-.52	.30
Narrative discourse total SG elements present (7)	5.2	.99	5.6	.87	-2.5	.006
Narrative discourse SG adequacy score	6.7	1.9	8.1	2.0	-3.45	.0005

While the non-LI subgroup had completed a mean of 10.1 years of formal education (SD=1.7), those in the LI subgroup completed 9.6 years (SD=1.6) and this difference approached significance (t=-1.5, p=.06; *d*=.39). Of the 46 identified as LI, 22 (48%) indicated that they had received some form of early intervention (e.g., Reading Recovery), as against 12 (28%) of those who were identified as non-LI. Six people self-reported a history of traumatic brain injury, of whom one was in the LI subgroup. Four reported a history of hearing impairment, two of whom overlapped with the self-reported TBI group. All four were classified as non-LI. Three people reported having been diagnosed with a psychotic illness in the past, and one of these was identified as LI. Thirty-three participants said they had been diagnosed with ADHD, and 20 of these (61%) were identified as LI.

Of the total sample of 100, 29 reported that they had undergone a period of Out of Home Care Placement (OHCP) during their childhood, and of this subgroup 16 (62%) were identified as LI. Exactly 50% (n=23) of the LI subgroup reported having undertaken some form of vocational training since leaving school, compared to 68% of their non-LI counterparts. No participants in either subgroup identified as being of Aboriginal or Torres Strait Islander background.

The relationship between language impairment and patterns of offending

In order to determine whether those with higher offending scores differed from those with lower offending scores with respect to language competence, participants were classified according to a median split across scores on CLCI scales 1 and 2 (violent and non-violent offending respectively). Just over a quarter of the group (n=26) had scores in the upper 50% on <u>both</u> CLCI scales ("CLCI High"), and this subgroup was compared with the remainder of the sample (n=74) whose scores were not in the upper 50% on both CLCI scales ("CLCI Not High"[2]). The two subgroups differed significantly with respect to years of education (M=9.1, SD=1.5 in the CLCI High subgroup; M=10.2, SD=1.7 in the CLCI Not High subgroup; t=2.8, p=.00; *d*=.68). However there was no difference between the subgroups with respect to K-BIT2 Matrices

[2] The term "not high" is used in preference to "low", because it is being used in a relative, rather than an absolute sense within a skewed sample.

scores (M=83.9, SD=17.0 in the CLCI High subgroup; M=86.8, SD=16.2 in the CLCI Not High subgroup; t=.76, p=.45; *d*=.07).

Table 5 displays the descriptive and inferential statistics pertaining to the performance of the two offending subgroups on the language measures. As can be seen, the high-offending subgroup scored more poorly on all language measures, with statistically significant differences occurring on Subtest 4 of the TLC-E (Figurative Language) and a number of CELF4 subtests (Formulating Sentences, Word Classes – Receptive) and the CELF4 Core Language Score, with effect sizes (Cohen's *d*) on the significant differences all in the medium to large range. The difference on CELF4 Word Definitions closely approached statistical significance. Inspection of the seven cases of *extremely high scores* (>75th percentile) on both the CLCI violent and non-violent offending scales, showed that five were in the LI subgroup.

Table 5 CLCI Subgroups: Descriptive and Inferential Statistics on Language Measures. Cohen's *d* is included as a measure of effect-size.

	High Offending Scores on CLCI Scales 1&2 (n=26)		**Not High offending Scores on CLCI Scales 1&2 (n=74)**				
Measure	Mean	SD	Mean	SD	t	p	d
TLC-E Subtest 1 Ambiguous Sentences Standardised Score	4.2	1.9	4.8	2.5	1.1	.14	.27
TLC-E Subtest 2 Listening Comprehension Standardised Score	4.9	2.6	5.2	2.5	.48	.31	.12
TLC-E Subtest 4 Figurative Language Standardised Score	4.2	2.1	5.6	2.8	2.3	.01	.56
CELF4 Recalling Sentences	4.7	2.9	5.4	3.2	.97	.16	.23
CELF4 Formulating Sentences	3.8	3.3	5.6	3.4	2.3	.012	.53
CELF4 Word Classes (Receptive)	4.0	2.6	6.3	3.1	3.3	.00	.80
CELF4 Word Definitions	5.0	3.8	6.5	4.0	1.5	.055	.38
CELF4 Core Language Score	63.7	19.9	74.1	19.1	2.4	.01	.53

Table 6 displays the descriptive and inferential statistic pertaining to the Narrative Discourse measures of interest: total syllables produced (a measure of overall productivity), number of story grammar elements present (out of a maximum of 7), and overall adequacy score (out of a maximum of 14). As can be seen in this table, there were no differences between the two offending severity subgroups on any of the narrative measures employed.

Table 6: CLCI Subgroups: Descriptive and Inferential Statistics on Narrative Discourse measures

	High Offending Scores on CLCI Scales 1&2 n=50		**Not High Offending Scores on CLCI Scales 1&2 n=50**			
Measure	Mean	SD	Mean	SD	t	p*
Narrative Discourse total syllables	97.2	39.8	95.6	37.7	-2.04	ns
Narrative Discourse Story Grammar Elements present	5.3	.87	5.5	1.0	.94	ns
Narrative Discourse total score	7.2	2.1	7.7	2.2	1.2	ns

Table 7 displays the medians and 75th percentiles on the CLCI Violent and Non-Violent offending Scales for the LI and non-LI subgroups. In both subgroups, non-violent scores were higher than violence scores, and the medians on both CLCI scales were higher in the LI subgroup than in their non-LI counterparts. In order to determine whether these differences in offending profiles between the two language subgroups were statistically significant, Mann-Whitney U-Tests were carried out, and results are displayed in Table 7.

Table 7: Medians and 75th percentiles on CLCI Violent and Non-Violent offending Scales x Language Impairment subgroups

	Language Impaired n=46		Non-Language Impaired n=54			
	Median	75th percentile	Median	75th percentile	*U*	p*
CLCI Non-Violent Offending Score	15.5	53.0	10.0	35.5	999.0	0.06
CLCI Violent Offending Score	9.0	16.5	7.0	21.25	1147.5	.25

While the comparison between LI and non-LI offenders on the non-violence scale approached significance, the difference on violent offending was not significant.

Figures 1 and 2 display box-plots of CLCI violent and non-violent offending scores as a function of LI subgroup. The dark horizontal line represents the median, and the lower and upper boundaries of the box represent the 25th and 75th percentiles within the samples respectively. As may be seen in these figures, there was considerably more heterogeneity on both offending subscales within the LI subgroup, with more LI than non-LI participants achieving offending scores well above the subgroup median, particularly in the case of violent offending (Figure 2).

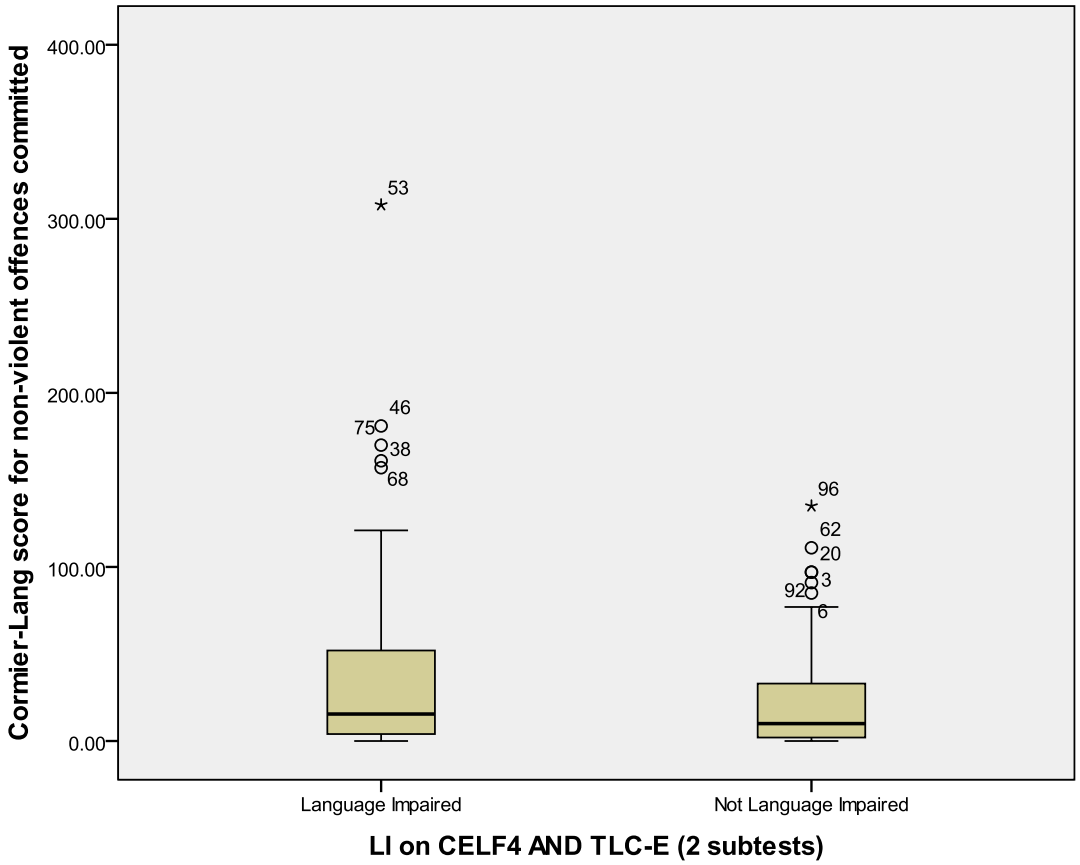

Figure 1 Box-plots displaying CLCI Non-Violent Offending Scores as a function of LI Subgroup.

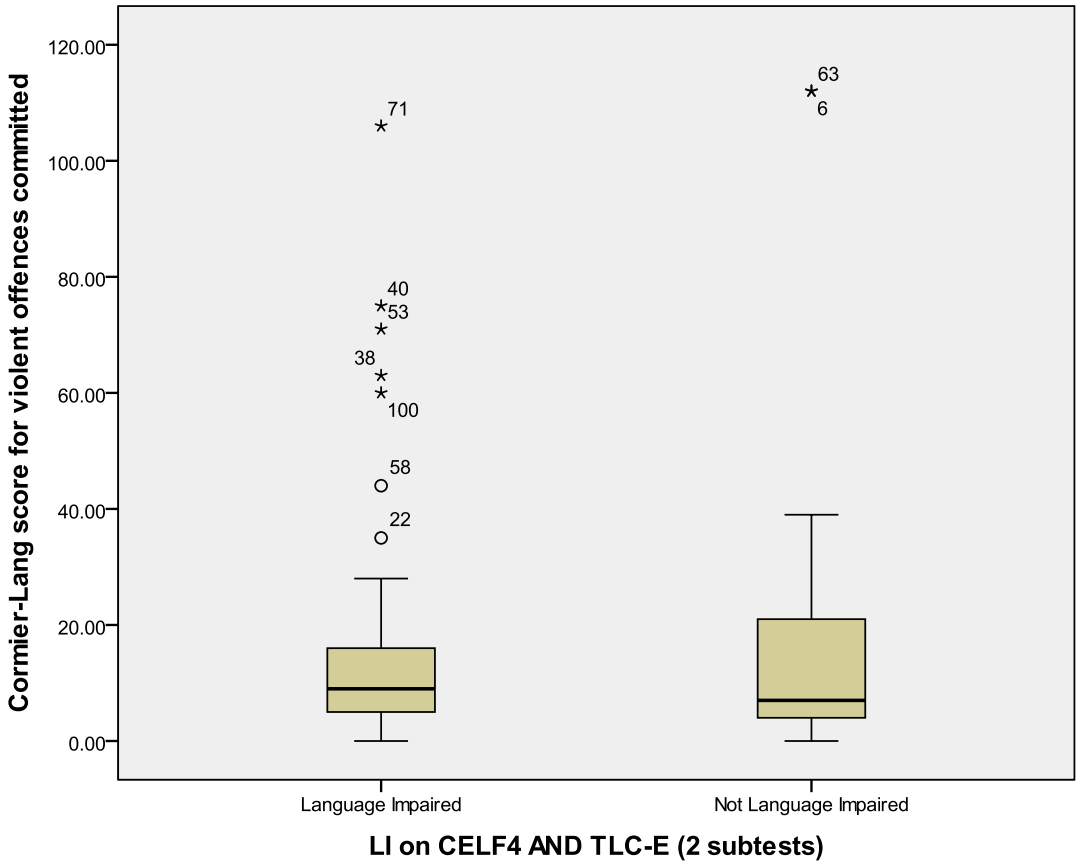

Figure 2 Box-plots displaying CLCI Violent Offending Scores as a function of LI Subgroup.

Discussion

This study explored the prevalence of language impairment in a sample of incarcerated young offenders, and also examined associations with offending type and severity, mental health, and early risk markers such as placement in Out of Home Care. Findings lend further support to the growing international evidence that young people from high-risk backgrounds who enter the Youth Justice system are highly likely to have an unidentified language impairment, as measured by standardised language measures. While we did not confirm the hypothesis that LI would be more prevalent in a custodial sample than in a community sample of young offenders, nearly half (46%) of the sample was identified as language impaired on standardised measures, using what might be regarded as a conservative operational definition. Notably, while a correlation was found between nonverbal IQ and language performance for the group as a whole, this association was not evident in the nearly 1 in 2 participants who were identified as LI.

When language competence was examined as a function of offending severity, it was evident that those young people who had higher offending scores across both violent and non-violent dimensions performed more poorly on language measures than their counterparts with relatively lower offending scores. Notwithstanding the fact that this is a skewed sample of young offenders, this aggregation of language impairment with higher offending scores is a matter of concern for educators, policy-makers and justice administrators. We also found that young offenders who had very high scores (>75th percentile) on measures of violent criminality were likely to have a language impairment.

The lower nonverbal IQs in the LI subgroup, while perhaps not surprising, is a finding that differs from a previous examination of a community-based sample of young offenders (Snow & Powell, 2008). It may be that when poorer cognitive function and language decrements co-exist in high-risk young people, this elevates their risk of engagement in higher-end anti-social activities, and reduces their exposure to prosocial values and behaviours. Decrements in language / communication skills in the early years of “at-risk” males, coupled with the emergence of antisocial activity of sufficient gravity to

warrant youth justice engagement in the adolescent years is a highly concerning public health challenge. Educators and policy makers are encouraged to note that low language and cognitive function, when coupled with other psychosocial risks, bodes poorly for school attachment and the attainment of skills that are fundamental to employment. While it is pleasing to see population-based interventions targetting early language skills being developed and evaluated, e.g., the *Pathways to Prevention* project in a disadvantaged region of Australia (Homel et al., 2006), it is disappointing that in the main, the expertise behind such programs does not include Speech Language Pathology.

Early language difficulties have been identified as a common comorbidity with behaviour and / or reading difficulties in the early school years (Tomblin, Zhang & Buckwalter, 2005). The current study had a particular focus on *oral* language skills, not directly measuring literacy skills. It is notable, however, that this group left school early (on average after only 9.8 years of formal schooling), and the LI subgroup showed a trend towards completing fewer years of formal schooling than their non-LI peers. Further, just on half of those in the LI subgroup reported having received targetted intervention services such as Reading Recovery or SLP in the early school years. Sadly however, such interventions would appear to have done little to alter the life-trajectories of these young men. More vigorous and wide-ranging attention to oral language competence is needed when boys display both behaviour and learning difficulties in the early school years.

No attempt has been made in this study to determine the underlying basis of the language impairment identified in the young offender sample. While it is possible that some may meet diagnostic criteria for Specific Language Impairment (SLI), it is more likely that the patterns of decrement evident in this group are of a generalised and *non*-specific nature – reflecting perhaps early disruptions in attachment, low parent-child attunement, and other socio-environmental factors that militate against the development of robust oral language skills (Clegg 2006; Beeghley & Cicchetti, 1994; Cohen, 2001; Snow, 2009a). Beeghley and Cicchetti reported that maltreated toddlers had fewer emotion words in their lexicons, and were poorer than non-maltreated controls

at verbally describing their own emotional state. This early association between verbal competence and emotional modulation underlines the role of language competence not simply as a tool of information transfer, but also as an important mechanism in regulating affective state. This is nowhere more important than in our interactions with others, particularly when social cues may be ambiguous and / or hostile.

While 29 participants in this sample reported some history of OHC placement, it is possible that there was some under-reporting on this due to perceived stigma. It is also possible that mere involvement with Child Protection Services, irrespective of whether removal is deemed necessary (not directly assessed in this study), is an adequate means of differentiating those at higher psychosocial risk with respect to language development in the early years. It was notable, however, that of the 29 who reported OHC placement, over half were identified as LI. A recent Australian study (Nathanson & Tzioumi, 2007) showed that children in OHC are among the most vulnerable and disadvantaged in the community, and the second most frequently indicated referral in their sample was to speech-language pathology. The shared risk factors for maltreatment and offending mean that without systematic intervention early in the lives of vulnerable children, the natural trajectory for many is going to be towards social marginalisation. Ignoring such children, or imposing unrealistically stringent service eligibility criteria simply further erodes their educational opportunities and imposes significant barriers to workforce participation. This is particularly so in a labour market that increasingly favours skilled, rather than unskilled workers, such as that which exists in Australia. In 2005, an Australian Bureau of Statistics *Australian Social Trends* paper reported that in OECD countries, male labour force participants aged 25-64 years with educational qualifications below upper secondary education are around 1.5 times as likely to be unemployed as those who have completed upper secondary education. Young people with a history of offending are already over-represented in such statistics, but virtually nothing is known of the contribution that unidentified LI makes to this longer-term picture. This is a question that should be pursued in future studies.

Together with implications for early intervention, findings from this research will also be relevant to program delivery for identified high-risk youth. Restorative Justice Conferencing, for example, is a conversational process that is increasingly offered through the courts as an alternative to traditional adversarial justice administration, but may be excessively taxing on the limited language processing and production skills of high-risk young males and may therefore require some re-conceptualisation (see Snow & Sanger, 2010). While mental health problems did not emerge as a significant concern in this sample, this may reflect selection bias and / or inadequate sensitivity of the measure employed. Further research will be required to examine this possible association further, as widely endorsed counselling approaches such as Cognitive Behaviour Therapy are highly verbally mediated.

Limitations

Some limitations of this study need to be borne in mind when considering the findings. This study was cross-sectional, so no causal or temporal inferences can be drawn about the role that a developmental history of language impairment plays in later engagement in crime. In all probability, both outcomes share many common antecedents, though much more research is needed to understand why some at-risk young people commit serious crimes, and others do not. It is possible that those with developmental difficulties with respect to language and cognition may simply be less skilled at evading detection or providing plausible verbal explanations for their actions when initially intercepted by police.

Obviously participants exercised choice with respect to the invitation to take part in the study, and it may be that there was some subtle systematic bias in the recruitment that meant that more young men with difficulties agreed to take part – ironically perhaps, because they lacked the verbal skills to assertively decline the invitation to participate. This study was concerned only with young males, so no generalisations can be made to young female offenders, whose developmental trajectories towards offending may differ somewhat from those seen in young males (Leve & Chamberlain, 2004).

While scores on the narrative discourse measure differentiated the two language subgroups (which were determined on the basis of standardised language testing scores), they did not differentiate the offending subgroups. Our measures of narrative competence may not be sufficiently sensitive to the types of linguistic difficulties that are important with respect to this population. Because narrative language skills has been previously identified as vulnerable in other developmental groups with LI (see Snow & Powell, 2005), this question will be a matter of ongoing discussion and debate, and further investigation by our team.

Our loosening of the inclusion criteria (i.e., to retain participants with a history of TBI, hearing impairment etc) did not appear to significantly influence the proportion of participants identified as LI, although this should be investigated further in future studies, given that such comorbidities are likely to be more prevalent in the custodial setting. Reliance on self-report / recall regarding early developmental histories is always imperfect, however it is not feasible to access accurate retrospective records for a state-wide sample and the cross-referencing of retrospective records that would be required was well beyond the resource available in this study.

Summary and recommendations for practice and research

The findings reported here lend further support to the emerging international evidence that shows that young people who enter the Youth Justice system are highly vulnerable with respect to their development of oral language (everyday talking and listening) skills. Much more needs to be done in the early years to identify high-risk students and respond to their needs in ways that are evidence-based and likely to result in improved school attachment, academic achievement, and the attainment of marketable employment skills. Oral language competence underpins much of what manifests as academic achievement in the early school years, but is not always made due attention in its own right. As noted elsewhere (Snow, 2009b), oral language competence in the early years is not simply literacy's "hand-maiden". It is vitally important in its own right as the vehicle by which relationships are formed, negotiated, strengthened, repaired, and maintained over time. Interpersonal functioning also underpins mental health across the lifespan, and in optimal

developmental circumstances, is learnt alongside the acquisition of language. Children from sub-optimal circumstances however, tend to come to the attention of key adults (in particular teachers) because of their behaviour difficulties, rather than because their language skills are identified as seriously below the levels required for academic and interpersonal success. More needs to be done to equip teachers to identify at-risk children, so that they are appropriately assessed, and receive specialist intervention services at a developmental juncture at which they are most likely to be genuinely beneficial.

Young people who come into contact with Child Protection services should have a full and detailed developmental assessment, and this should include an assessment by a Speech Language Pathologist.

A high index of suspicion should be held that young people who become engaged with Youth Justice services have at least sub-optimal oral language skills – if not a clinically diagnosable language impairment. One of the significant risks associated with the types of language difficulties described here lies in the fact that these can “masquerade” as rudeness, disinterest, and / or low motivation. Whilst undeniably these phenomena may be present in the attitudes of some young offenders at some times, an undetected language impairment may well further disadvantage an already marginalised young person in his passage through the justice system, and may hinder the acquisition of prosocial values and behaviours. Police and human services personnel therefore need to understand the vulnerability that exists in this population with respect to their language and interpersonal skills.

Young people who come into contact with Youth Justice services should have a full and detailed developmental assessment, and this should include an assessment by a Speech Language Pathologist.

Conclusions

Examination of oral language competence in an incarcerated sample of young offenders has been an important step in more fully characterising the young offender population, and underlines the urgent need for more targeted and sustained early intervention for boys who are identified as having learning and

behaviour difficulties early in their school careers. This knowledge should also assist with refining existing intervention approaches that may be underperforming with young offenders because oral language competence has been inadequately taken into account. Intervening early in the developmental trajectory is far more likely to be successful than attempts to alter the life-course of a 20 year-old who has already been incarcerated, and has few prosocial assets on which to draw when it is time to re-enter the community.

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