عليكم السلام NAMASKAR TALOFA
HELLO HOLA BOK ALO 你好
SALUT SELAM Γεια σου
WAI G'DAY MATE OI
NAMASTE CIÀO VANAKKAM
XIN CHÀO ADAAB SHLAMA
PRIVET! YO WERTE MARDA

Cultural diversity

In this issue:

Cultural and linguistic diversity in Australian preschool-age children

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Mandarin-speaking clients

Bilingual children who stutter

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From the editors

Marleen Westerveld and Kerry Ttofari Eecen

ONE OF THE QUESTIONS IN MY AUSTRALIAN CITIZEN-ship test sounded like this: "How many languages are spoken in Australia's diverse society? a) 20, b) 50, c) 150, or d) over 200". In the last couple of weeks, I have put this question to friends and neighbours; most of them answered incorrectly, guessing options b or c. The fact is that more than 400 different languages are spoken in Australia. Moreover, people from more than 270 different ancestral backgrounds call Australia home (Australian Bureau of Statistics, 2010). Of the approximately 22 million people living in Australia, over one-quarter were born overseas (Commonwealth of Australia, 2009). As a result, speech pathologists are likely to encounter clients from culturally and linguistically diverse backgrounds on a regular basis. This edition of *ACQuiring Knowledge in Speech, Language and Hearing* aims to bring our readers up-to-date, evidence-based information related to working with culturally and linguistically diverse populations that will no doubt help raise our awareness of the complex issues surrounding this topic.

Williams starts by providing us with an overview of some of the challenges we face when working with children from culturally and linguistically diverse backgrounds in Australia. The author concludes that further evidence is needed to support our clinical practice and calls for all practitioners to consider conducting small-scale studies. McLeod presents data from a nationally representative Australian sample of nearly 5,000 children (4- to 5-year-olds) and their parents. This information can potentially be used to guide allocation of resources for development of culturally and linguistically appropriate information, assessments, and intervention by state/territory.

The next two papers address assessment of Indigenous children. Cahir considers how culturally valid our current (standardised) assessments are for Indigenous children and highlights the importance of community consultation. Pearce and Stockings' preliminary investigation analysed the oral narrative skills of six Aboriginal children from North Queensland. Interestingly, language sample analysis revealed lower than expected (based on overseas norms) performance on grammatical and semantic measures, but average performance on a measure of story quality. The authors call for further research into culturally appropriate language sampling practices for Indigenous Australian children.

The final two peer-reviewed articles concentrate on Mandarin-speaking clients. Lee and Ballard do an excellent job in raising our awareness of the linguistic and cultural considerations when working with this population by clearly outlining the implications for the clinician. Vong and colleagues describe three bilingual/multilingual clients whose first language is Mandarin, and who received stuttering treatment. Most of the issues the authors raise, however, would apply to all bilingual clients. Examples include which language to target in assessment and intervention and the generalisation of treatment to the untreated language(s).

The number of clinical insights articles clearly reflects speech pathologists' interest in cultural diversity. For example, Stewart provides a vivid description of her experience in treating an African woman post-stroke. Our *What's the Evidence* column, brought to you by Linda Hand, addresses the well-known conundrum "should we treat bilingual children with language impairment in English, in their first language, or in both?" Hand considers all available evidence, using a step-by-step approach, and comes to the conclusion that the evidence base is increasing for making an informed decision. Last, but not least, our regular columns focus on diversity in one way or another (see Webwords 41). Our sincere thanks are extended to all the authors for your inspiring contributions to this issue of *ACQ* and your obvious commitment to the profession.

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Working with children from culturally and linguistically diverse backgrounds

Implications for assessment and intervention

Cori Williams

THIS ARTICLE
HAS BEEN
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Cori Williams

Working with children from culturally and linguistically diverse backgrounds is a far from simple matter. This paper presents an overview of the challenges faced by Australian speech pathologists who work within one of the most culturally diverse countries in the world. The importance of a general understanding of cultural difference is highlighted, and a framework for thinking about culture is identified. Issues and evidence in the important areas of assessment and intervention with children from culturally and linguistically diverse backgrounds are discussed. Australian practitioners are encouraged to contribute practice-based evidence to support clinical practice and provide a foundation for research.

The provision of speech pathology services to children from culturally and linguistically diverse backgrounds presents challenges to speech pathologists around the world. A review of research looking at bilingual children and communication disorders (Kohnert & Medina, 2009) indicates that these challenges have been recognised in the literature for the past 30 years. In recent years, the increased interest in these challenges has been reflected in growth in the published research. In their review of the literature, Kohnert and Medina found 1–2 papers a year which met their search criteria in the 1980s and 1990s, and 4–5 papers a year from 2000.

Many of the challenges inherent in working with this population are common in countries around the world. Challenges in the assessment process centre on the need to distinguish language difference (attributable to learning a second language) from language disorder (attributable to an underlying language learning problem). Challenges in the intervention process centre on questions about the most effective way to support language development in bilingual children with language learning disorders. Linguistic, demographic, and geographical factors combine to present particular challenges to the provision of speech pathology services to children from culturally and linguistically diverse backgrounds living in Australia. This paper presents the issues which arise in the Australian context, as well as evidence which is relevant within that context.

The Australian context

Australia is one of the most culturally diverse countries in the world, home to people from some 270 different ancestral backgrounds, and speakers of more than 400 languages (Australian Bureau of Statistics [ABS], 2010). The languages include languages spoken by migrants, and those spoken by Indigenous Australians. They may be spoken by relatively small numbers of people, and speakers of the same language may live in areas separated by considerable distances. Speakers of Indigenous languages are concentrated in the remote northern and central regions of the country (ABS, 2010), in areas of low population density. Indigenous languages include both traditional languages and creoles, and children may grow up in complex language contexts which include more than one Indigenous language as well as English. It is estimated that 80% of Indigenous Australians speak Aboriginal English, a non-standard variety which differs from Standard Australian English in a number of ways (McKay, 1996; Malcolm et al., 1999). Many speakers of Aboriginal English live in the less remote areas of the country.

English is the official language of Australia (Department of Foreign Affairs and Trade, 2010), used in public settings including education and health. The implications for the provision of speech pathology services to children from culturally and linguistically diverse backgrounds are clear. The large number of languages spoken within Australian homes makes it unlikely that a bilingual child will encounter a speech pathologist who speaks his/her home language. A recent study investigating speech pathologists' assessment and intervention practices with multilingual children (Williams & McLeod, 2011) showed that none of the 97 speech pathologists who reported working with bilingual children spoke the first language of that child. Few (12) of the 198 participants reported speaking a language other than English proficiently. The distribution of population within Australia means that speech pathologists who do have proficiency in a language other than English may not be employed in areas which are home to speakers of that language. As a result, few bilingual children will receive speech pathology services from a speech pathologist who speaks his/her first language. Therefore, speech pathologists working with bilingual children need to have foundation knowledge that is not related to specific languages, but which provides a basis from which to approach the issues for individual children/families.

Requisite knowledge

In working with children (or adults) from culturally and linguistically diverse backgrounds it is crucial to understand culture, the relationship between culture and language, the processes of second language learning and the variability to be seen in this population. Culture has been defined as "the shared, accumulated, and integrated set of *learned* beliefs, habits, attitudes and behaviours of a group or people or community" (Kohnert, 2008, p. 28; my emphasis). The realisation that the beliefs, habits, attitudes, and behaviours which make up culture are learned, not inherently right, is a critical one. Culture can be seen as a filter through which we see the world (Saville-Troike, 1989), a filter which is generally invisible to us. Awareness of those beliefs and orientations which are culturally determined (recognition of our cultural filter) is a first step in learning to work with those whose cultural background differs from our own. A failure to recognise such differences may lead to misinterpretation of behaviour.

Cultural orientation has been discussed in terms of differences along two dimensions – individualism/collectivism (or independence/interdependence) and high/low power. Individualism refers to the tendency to value the individual, independence, and individual achievement, while collectivism involves orientation primarily to the group. The high/low power dimension captures differences in expectations about power relationships between individuals. A low power orientation expects equality in interactions, while a high power orientation accepts inequality. These dimensions are seen as a way of thinking about cultural differences, rather than as cultural absolutes, but some cultures are thought to show particular characteristics. Western cultures, for example, are most often thought to be low power and individualistic, whereas Asian cultures are thought to be high power and collectivist (Westby, 2009). Consideration of the ways in which cultural orientation may affect the assessment and intervention processes is needed when working with clients from cultural backgrounds which differ from those of the clinician. Differences between individuals and families from the same cultural background must also be recognised.

Language is one aspect of culture, "at once the context in which language is developed and used and the primary vehicle by which it [culture] is transmitted" (Kohnert, 2008, p. 28). Differences in language form are readily apparent, but other cultural differences in language are less evident. Children are socialised within the cultural orientations of their home and learn the ways of interacting that are valued within their culture. These ways of interacting may differ from those of the speech pathologist. Failure to recognise differences which are due to culture may lead to misinterpretation of behaviour and to the provision of intervention which does not meet the needs of the child and family (Peña & Fiestas, 2009; Wing et al., 2007). Consider, for example, the child who seldom initiates conversation. Within an individualistic cultural orientation, this behaviour may be seen as problematic, but within a collectivist cultural orientation, which values the group more than the individual, this may be the expected behaviour.

The speech pathologist working with children from culturally and linguistically diverse backgrounds needs an understanding of the typical patterns of second language acquisition and of the many factors that will affect this. Language learning is characterised by variability regardless of the number of languages a child is exposed to, but there are additional factors which will contribute to variability in children growing up in bilingual contexts. These factors include the pattern of bilingual development – simultaneous (exposure to two languages before the age of 3) or sequential (introduction of a second language at a later point in development) (Paradis, 2010), the amount of exposure to the second language, and family and community attitudes to the use of the two languages. If the pattern of development is sequential, the age at which the second language is introduced, the amount of exposure to that language and the pattern of use of the two languages are critical variables which may impact on both the first and second language. The effects on the second language make it difficult to separate language disorder from language difference. Paradis (2010) suggests that there is an overlap in the linguistic characteristics of the second language spoken by typically developing bilingual children, bilingual children with SLI, and monolingual children with SLI, and that these overlaps are particularly evident in the first two years of exposure to the second language. These factors may impact on the continued development of the first language with the result that the first language skills may appear to be impaired (Genesee, Paradis, & Crago, 2004).

Family, community, and individual attitudes to the use of the two languages may affect the amount of exposure to each language, and therefore opportunities to use the two languages. The decline in the use of home languages within migrant communities over generations is at least partly attributable to individual choice (Pauwels, 2005). It is thus important to include questions which address these crucial elements of variability in case/family history questionnaires for use with clients from culturally and linguistically diverse backgrounds.

The literature on second language learning describes a number of typical processes, many of which may be mistakenly interpreted as evidence of language disorder (Williams & Oliver, 2002). Children may go through a silent period, during which they do not attempt to use the second language. Interference (cross linguistic effects) may mean that syntactic or phonological characteristics of the first language are evident in the second language (Goldstein & Gildersleeve-Neumann, 2007; Kohnert, 2008). Basic knowledge of the characteristics of the first language will assist in interpreting these characteristics. Code mixing (which occurs when elements of the two languages are included in the same utterance) and code switching (moving from one language to the other, usually in response to context) are typical processes in second language learning. Children may use routines or formulaic utterances as means of coping with the demands of a new language, or they may avoid using language elements which they know to be difficult for them. Language shift (the process by which children move from using mostly a first or home language to using mostly the language of the wider community) and language loss (the replacement of a first or home language by the language of the wider community) are also common processes. See de Houwer (2010) for a more detailed discussion.

Issues and evidence

Assessment

In assessing speech and language in bilingual children we need to be sure that the typical patterns of second language development are not mistaken for language learning disorder; at the same time, we need to be certain

that the signs of language learning disorder are not missed. The crucial question is whether the child shows evidence of language difference or language disorder. Language impairment affects language learning capacity generally, not a specific language, so "a child with language impairment should demonstrate limited performance in both languages, not only in English" (Gutierrez-Clellan & Simon-Cerejeido, 2009, p. 239). The implication is clear: assessment of both languages is needed. This may not be possible, however. Standardised tests in the home language may not be available, and if they are available, will be difficult for the monolingual speech pathologist to administer. Variability in language experience means that standardised tests in English cannot be used with any degree of confidence, and it is likely that bilingual children will not score well on these measures (Fagundes, Haynes, Haak, & Moran, 1998). The literature provides a number of different approaches to assessment.

Kohnert (2010) discusses assessment approaches for bilingual children under three headings – monolingual comparisons, bilingual comparisons, and within child comparisons. Assessment of either the first or second language against a normative group constitutes monolingual comparison. Kohnert also includes non-word repetition (NWR) tasks under this heading. Some research (Oetting & Cleveland, 2006; Rodekohr & Haynes, 2001) suggested NWR as a potentially non-biased method of assessment of language learning capacity in bilingual children. This suggestion was based on the premise that NWR is a processing-based, rather than a language-based task. However, research conducted by Kohnert and colleagues (for example Kohnert, Windsor, & Yim, 2006; Windsor, Kohnert, Lobitz, & Pham, 2010) has led to the suggestion that the use of NWR tasks in only one language may not be a clinical marker of language impairment in the case of bilingual children (Windsor et al., 2010). Language-based processing measures such as NWR are seen to reduce, but not eliminate bias when used monolingually.

Bilingual comparisons look at the language performance of bilingual children with language impairment and that of other bilingual children. These comparisons have consistently shown that the children with language impairment differ from their bilingual peers. Comparing bilingual children is important for diagnosis, but Kohnert (2010) points out that there are still challenges inherent in the paucity of normed tests for many languages and the limited number of bilingual speech pathologists.

Within child comparisons consider the child's ability to learn language. Two main types (limited training [or fast mapping] tasks and dynamic assessment) are found in the literature. Dynamic assessment has most often been reported, and is used in domains other than speech and language. The approach is based on the work of Vygotsky, who suggested that learning takes place in interaction with more skilled others. A test- teach- retest paradigm is adopted, and a measure of modifiability is completed by the clinician (see, for example, Gutierrez-Clellan & Peña, 2001; Peña, 2000). Evidence suggests that children with language impairment, or those with weaker language, will be rated more poorly on their learning ability (modifiability) than those with typical, or stronger language (Peña et al., 2006; Peña, Iglesias, & Lidz, 2001; Ukrainetz, Harpel, Walsh, & Coyle, 2000). The clinician's rating of modifiability has been shown to be a strong and accurate predictor of language ability (Peña et al., 2006).

Information from parents has also been shown to have value in identifying language disorder in bilingual children. Paradis, Emmerzael, and Duncan (2010) developed a non-culture specific questionnaire, the Alberta Language Development Questionnaire (ALDeQ) to tap into parent perception of children's language development, and evaluated how well this differentiated language-impaired English language learners from typically developing English language learners. They found statistically significant differences between the two groups for total and section scores on the questionnaire, with large effect sizes. Specificity (96%) was better than sensitivity (66%). Similar results were found in a study which used the ALDeQ with English language learners in Perth, WA (see May & Williams, 2011).

The current evidence on assessment of language in bilingual children indicates that it is a far from simple matter which will require consideration of information from multiple sources (Isaac, 2002; Langdon & Wiig, 2009). Lewis, Castilleja, Moore, and Rodriguez (2010) presented a framework for organising multiple sources of assessment information for school-aged bilingual children. This has been modified by the current author to include scope to record information which will allow it to be used with both preschool-aged and school-aged children (see Appendix). Judgements as to whether the evidence supports an interpretation of typical language learning processes, speech/language disability, or learning disability are recorded in the framework, and an overall judgement may be made on the basis of the weight of evidence.

There are early indications in the literature that the future of assessment in this population may involve non-linguistic tasks. Kohnert, Windsor, and Ebert (2009) present evidence from a study which compared the performance of three groups of children (typically developing bilingual; typically developing monolingual English speakers; monolingual English speakers with primary language impairment [PLI]) on three types of task (perceptual-motor demands; non-linguistic demands; linguistic demands). All tasks were administered in English. The research aimed to identify points of similarity and difference, particularly in the performance of PLI and bilingual children. Their findings indicated that language-based tasks (such as non-word repetition) disadvantaged bilingual children compared to monolingual children. The non-linguistic tasks (visual detection, auditory pattern matching, mental rotation and visual form completion) were most successful in differentiating bilingual children from the typically developing monolingual children. Kohnert et al. (2009) concluded "it may be that performance on some set of non-linguistic processing tasks can be used to help identify children with PLI in a linguistically diverse population" (p. 109). If further research confirms these findings, it may be that our approach to assessment of bilingual children will be very different in the future.

Intervention

The literature regarding speech and language intervention for bilingual children is less extensive than that addressing assessment, and high level evidence is scarce (Elin Thordardottir, 2010). The key issues are the advice that should be given to parents as to which language (or languages) to speak in the home, and the language (or languages) to be used in intervention.

Parents may ask which language they should use at home, or may report that they have been advised not to

speak their home language to avoid added difficulty for the child. The available evidence suggests that children with language impairments are able to learn two different languages, and will not suffer any additional disadvantage as a result (Elin Thordardottir, Weismer, & Smith, 1997; Paradis, Crago, Genesee, & Rice, 2003). This is true also of children with Down syndrome (Feltmate & Kay-Raining Bird, 2008; Kay-Raining Bird, Trudeau, Elin Thordardottir, Sutton, & Thorpe, 2005). There are compelling social reasons for the maintenance of home languages, but pragmatic justification for a focus on the majority language may be presented (for example, that this is the language used in the education system). Ultimately, the choice of language (or languages) to be spoken in the home will be made by the family, for reasons which may be unique to that family.

The literature contains different perspectives on the question of which language to use in intervention. Speech Pathology Australia (2009) recommends that a decision regarding the language of intervention be made in collaboration with the family after consideration of a number of factors, including the language skills of the clinician and the preferences of the family. The limited evidence available suggests that a focus on both of the child's languages leads to better outcomes, and that a focus on processes common to the two languages will facilitate progress (Elin Thordardottir, 2010). Gains in both languages in bilingual intervention for a child with autism have been reported (Seung, Siddiqi, & Elder, 2005).

Kohnert (2008) has suggested that, rather than asking which language to use in intervention, clinicians should ask how to support the development of the languages needed by the child. This support is, in most cases, unlikely to include intervention delivered by the speech pathologist in the home language of the child. An international study of practices of speech pathologists working with bilingual clients (Jordaan, 2008) found that 87% of respondents worked with children in one language only, their own. Williams and McLeod (2011) reported that 57.9% of Australian respondents worked with their bilingual clients only in English. Support for both languages must therefore be delivered in innovative ways. Kohnert (2008) suggested a number of general strategies which could be used to achieve this goal. These include using collaborative strategies to develop the home language (for example, working with others who share the child's first language), supporting the development of general language abilities (for example, through a focus on print and literacy, and ensuring an optimum listening environment) and focusing on elements which may transfer from one language to the other.

Conclusions

Working with children from culturally and linguistically diverse backgrounds presents a number of challenges to speech pathologists in Australia. These challenges arise from the large number of languages spoken, the small number of bilingual speech pathologists, and the geographical distribution of the Australian population. The evidence base in this important area remains relatively small. All practitioners who work with children from culturally and linguistically diverse backgrounds have a part to play in helping to develop evidence to support practice and inform research. Well-designed and carefully reported single subject case studies which document the choices made (e.g., the language(s) used, the model of intervention), procedures and outcomes of interventions undertaken in the clinical context can be reported in the literature. These small scale studies are within the scope of practitioners, and can then help to build a body of data which can be the basis of larger, controlled research projects. Sharing of the outcomes of the studies with the professional community will help to inform practice throughout Australia.

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Appendix: A framework for assessment					
	Type of assessment	Evidence provided	Evidence supports possible		
			normal processes of language development	speech/language disability	learning disability
All children	Developmental history	*Acquisition of early language and non-language skills* • like siblings • typical developmental milestones *Medical history* • no hospitalisations, known conditions • early, frequent ear infections *Family history* • history of speech/language impairment			
	Language use	• Patterns of language use at home, with significant others, friends • Length of exposure to English • Language preferences in different contexts			
	Dynamic assessment	Ability to learn new tasks in structured teaching environment			
	Language sampling	Connected speech in social/interactive language tasks – English. L1 if feasible			
School-aged children only	Observations in classroom and with peers	• Compare social and academic settings • Pragmatics • Language preferences			
	Norm referenced assessment	• Quantitative comparison of child's language with typically developing bilingual peers • Assessed in high structured, school type tasks			
	Academic history	*Information about academic instruction* • in and outside Australia • stable or interrupted • language of instruction • support provided for development of English *Academic progress* • similar/dissimilar to ELL peers			
Source: Adapted from Lewis, Castilleja, Moore, & Rodriguez, 2010					

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Dr Cori Williams is a lecturer and researcher in the School of Psychology and Speech Pathology at Curtin University. Her interest in language and cultural diversity extends over more than 30 years. In 2010 she presented on working with children from culturally and linguistically diverse backgrounds to speech pathologists around Australia as National Tour presenter for Speech Pathology Australia.

Correspondence to:
Cori Williams
School of Psychology and Speech Pathology
Curtin University
Curtin Health Innovation Research Institute
phone: 08 9266 7865
email: c.j.williams@curtin.edu.au

Cultural and linguistic diversity in Australian 4- to 5-year-old children and their parents

Sharynne McLeod

THIS ARTICLE HAS BEEN PEER-REVIEWED

Sharynne McLeod

This paper describes the cultural and linguistic diversity of Australian preschool children and their parents in order to guide resourcing, assessment, and intervention practices. Data were analysed from a nationally representative sample of 4983 Australian preschool children. Over one-fifth (21.9%) of the children were regularly spoken to in a language other than English. The majority (86.0%) spoke English as their first language; and 12.2% of the children spoke one of 35 other languages. After English, the most common first languages were: Arabic (1.6%), Cantonese (1.3%), Vietnamese (1.0%), Greek (0.8%), and Mandarin (0.8%). Italian was the most common additional language, spoken by 2.9% of the children. Commonly spoken children's languages differed by state/territory and showed different trends compared with Australian census data. Most of the children's parents spoke English as the primary language at home (parent 1: 82.5%; parent 2: 69.8%); however, 42 other primary languages were also spoken. Significant resourcing of the Australian speech pathology, early years education, and interpreting sectors is required to accommodate the diverse cultural and linguistic heritage of children. Resourcing should be based on data about Australia's children, rather than the publicly available Australian census data.

Australia has wide cultural and linguistic diversity, with its population drawn from around the globe. Over 400 languages are spoken in Australia (Australian Bureau of Statistics [ABS], 2010) and 21.5% of the population uses a language other than English at home (but may also use English) (ABS, 2006a). After English, the next most common spoken languages are Italian (1.6% of Australians use this language), Greek (1.3%), Cantonese (1.2%), Arabic (1.2%), Mandarin (1.1%), and Vietnamese (1.0%) (ABS, 2006a). The most common ancestry reported by the Australian population is, in order: Australian, English, Irish, Scottish, Italian, German, Chinese, Greek, Dutch, and Indian (ABS, 2006b), demonstrating differences between ancestry and the most common languages spoken today.

Language conveys traditions, culture, and identity; therefore, cultural and linguistic competence is particularly important for speech pathologists in order to work sensitively and holistically with their clients. Cultural and linguistic competence includes respectful consideration of the perspectives of children and families from diverse communities and is enhanced by speech pathologists' self-assessment of their own cultural biases (ASHA, 2010). Additionally, knowledge of languages other than English enhances cultural and linguistic competence. In Australia, it was reported that 30.7% of speech pathologists spoke a language other than English (Speech Pathology Australia, 2001); however, there was a "weak correlation between the languages spoken by speech pathologists who responded to the survey and those most commonly spoken within the Australian community" (Speech Pathology Australia, 2001, p. 10). For example, one-third of these Australian speech pathologists reported they used signed English, yet signed English is spoken by less than 0.1% of the Australian population (ABS, 2006a).

Winter (1999, 2001) found that children who speak languages other than English were both underrepresented (with too few children compared with the local community who spoke some languages) and overrepresented (with too many children who spoke other languages) on caseloads of speech and language therapists in the United Kingdom. Although similar research has not been undertaken using caseload data in Australia or the US, there have been two recent studies where speech pathologists have been asked to estimate the number of children who speak languages other than English on their caseloads. In a national study of Australian speech pathologists working with children with speech sound disorders, the participants reported that their caseloads included an average of 9.8% (median = 5, range = 0–90%) of children who speak English as a second or other language (ESL) (McLeod & Baker, 2011). This percentage is much lower than a similar study in the US where 48% of children on their caseloads were estimated to be "non-native" English-speaking (Skahan, Watson, & Lof, 2007).

Understanding the language experience, language environment, and language background of Australian *preschool* children is important in order to differentially

diagnose language difference from language delay. The "critical age hypothesis" (Bishop & Adams, 1990; Nathan, Stackhouse, Goulandris & Snowling, 2004), suggests that failure to commence speech and language intervention before 5 years of age means the critical time to facilitate literacy acquisition may have passed. Thus, it is important that speech pathologists have appropriate information regarding the languages spoken by preschool children that they will assess or provide intervention to. Williams and McLeod (2011) found that in a sample of 128 Australian speech pathologists, 50.5% provided *speech* assessments for bilingual children without an interpreter and 34.2% provided language assessments for bilingual children without the aid of an interpreter (whether a professional or a family member). The speech pathologists indicated that they sought additional information about the language and culture of the children. However, speech pathologists indicated they have limited resources for determining whether young children from culturally and linguistically diverse backgrounds demonstrate a speech and language difference (as a result of speaking another language), or a speech and language disorder (McLeod, 2011). The lack of available resources was supported by Ballard and Faro (2008, p. 379) who stated "as information about different cultures and languages is limited, few practitioners have the multicultural assessment skills or resources necessary to make such a judgement or a culturally appropriate assessment". Therefore, data are needed on the languages spoken by Australian children to guide practices and the development of appropriate information, assessment, and intervention resources.

Publicly available Australian census figures (highlighted earlier) relate to the entire Australian population, and do not specifically reflect the languages used by children. It is possible that the figures relating to common languages used in Australia may reflect migrant patterns from many years ago. For example, the high percentage of Italian speakers in the Australian population may be adults who migrated after World War II. Currently, there are limited nationally representative data to guide speech pathology policy and practice guidelines regarding cultural and linguistic diversity in Australian preschool children.

The aim of this paper is to describe the languages used by Australian 4- to 5-year-olds and their parents. This study utilised data from the entire Kindergarten cohort of the Longitudinal Study of Australian Children (LSAC), a nationally representative study supported by the Australian government and recruited through the national Medicare database (Australian Institute of Family Studies [AIFS], 2007).

Method

Participants

Participants were 4983 4- to 5-year-old children who participated in LSAC and their parents/carers. The children were born between March 1999 and February 2000. The mean age was 56.91 months (SD = 2.64). There were 2537 boys (50.9%) and 2446 girls (49.1%). The children comprised a nationally representative sample matching the Australian population of families with a 4- to 5-year-old child on key characteristics including ethnicity, country of birth, whether a language other than English was spoken at home, postcode, month of birth, education, and income (Gray & Sanson, 2005). Harrison, McLeod and colleagues (Harrison & McLeod, 2010; Harrison, McLeod, Berthelsen & Walker, 2010; McCormack, Harrison, McLeod, & McAllister,

2011; McLeod & Harrison, 2009) provide additional information about these children.

Procedure

In wave 1 of the LSAC data collection (when the children were 4- to 5-years-old), parent 1 for each child was interviewed by a researcher in the LSAC data collection team and parents 1 and 2 were given a questionnaire to complete. Parent 1 was the child's mother in over 97% of cases. Full information about the interviews and questionnaire content is available from AIFS (2007). Data pertaining to the languages used were collated from each of these sources and are reported here.

Data analysis

Analyses in the current paper entailed the use of sample weights that were derived with support from the Australian Bureau of Statistics to ensure "proportional geographic representation for states/territories and capital city [and] rest of state areas" (Soloff, Lawrence, Misson, & Johnstone, 2006, p. 5) and to compensate for differences between the national population of 4- to 5-year olds and the final LSAC sample. Weighting was used to reduce sampling biases and likelihood of responses (see McLeod & Harrison, 2009, for additional information).

Results

Languages spoken by the children

Thirty-five different languages were listed as the children's primary language (see Table 1), not including the languages listed as "other". English was the primary language spoken at home by 86.0% (n = 4285) of the children and 12.2% spoke a language other than English as their primary language (the remaining data for 1.8% children were confidentialised). The most common primary languages other than English were Arabic (n = 78,[1] 1.6%), Cantonese (n = 64, 1.3%), Vietnamese (n = 50, 1.0%), Greek (n = 40, 0.8%), and Mandarin (n = 42, 0.8%) (see Table 1).

The parents were asked to indicate up to two secondary languages in response to the question: "What is the main other language that child understands or speaks?". They were given a list of 16 possible languages, as well as "other". The majority indicated that "other" languages were spoken by their child (n = 477, 9.6%), and data are not available regarding the identity of these languages. Italian was the most commonly listed additional language, spoken by 2.9% (n = 143) of the children. The next most common additional languages spoken by the children were Arabic (or Lebanese) (n = 102, 2.0%), Mandarin (n = 70, 1.4%), Cantonese (n = 69, 1.4%), Greek (n = 69, 1.4%), and Vietnamese (n = 58, 1.2%) (see Table 1).

Proportion of speakers by Australian state/territory

A cross-tabulation was undertaken comparing the state in which the children resided with the primary language spoken by the children. The proportion of children who spoke English as their primary language differed by the Australian state/territory in which they resided. From most to least speakers of English as their primary language they were: Tasmania (n = 123, 98.4% of the 4- to 5-year-old children within the state in this study), Queensland (n = 923, 93.7%), Northern Territory (n = 42, 93.3%), Western Australia (n = 443, 91.2%), South Australia (n = 317, 91.1%), Australian Capital Territory (n = 64, 82.1%), Victoria (n = 974, 81.9%), and New South Wales (n = 1363, 81.1%).

Table 1. Primary and secondary languages spoken by Australian 4- to 5-year-old children and their parents (n = 4983)*

	Child's primary language		Additional language(s) other than English spoken or understood by the child		Parent 1's primary language		Parent 2's primary language	
	n	%	n	%	n	%	n	%
1. African languages	7	0.1	–	–	8	0.2	7	0.1
2. Afrikaans	–	–	–	–	6	0.1	7	0.1
3. Arabic	78	1.6	102	2.0	89	1.8	87	1.7
4. Australian Aboriginal	–	–	22	0.4	–	–	–	–
5. Assyrian	10	0.2	12	0.2	13	0.3	10	0.2
6. Bengali	11	0.2	–	–	12	0.2	11	0.2
7. Cantonese	64	1.3	69	1.4	66	1.3	54	1.1
8. Croatian	6	0.1	–	–	6	0.1	5	0.1
9. Dutch	–	–	–	–	7	0.2	8	0.2
10. English	4285	86.0	n/a	n/a	4113	82.5	3480	69.8
11. French	18	0.4	–	–	19	0.4	19	0.4
12. German	12	0.2	–	–	18	0.4	18	0.4
13. Greek	40	0.8	69	1.4	52	1	47	0.9
14. Gujarati	–	–	–	–	6	0.1	5	0.1
15. Hakka	8	0.2	–	–	8	0.2	7	0.1
16. Hindi	21	0.4	–	–	22	0.4	23	0.5
17. Indonesian	8	0.2	–	–	8	0.2	7	0.1
18. Italian	36	0.7	143	2.9	59	1.2	56	1.1
19. Japanese	8	0.2	24	0.5	7	0.1	6	0.1
20. Khmer	–	–	2	0.0	–	–	–	–
21. Korean	–	–	6	0.1	5	0.1	6	0.1
22. Macedonian	6	0.1	–	–	9	0.2	8	0.2
23. Maltese	–	–	–	–	–	–	6	0.1
24. Mandarin	42	0.8	70	1.4	51	1	45	0.9
25. Maori (New Zealand)	5	0.1	–	–	9	0.2	–	–
26. Oceanian Pidgins and Creoles	–	–	–	–	–	–	5	0.1
27. Persian	–	–	1	0.0	–	–	–	–
28. Polish	6	0.1	–	–	10	0.2	8	0.2
29. Portuguese	9	0.2	–	–	11	0.2	11	0.2
30. Punjabi	6	0.1	–	–	7	0.1	7	0.1
31. Romanian	–	–	–	–	5	0.1	–	–
32. Russian	4	0.1	–	–	5	0.1	5	0.1
33. Samoan	23	0.5	–	–	28	0.6	23	0.5
34. Serbian	12	0.2	16	0.3	11	0.2	12	0.2
35. Sinhalese	8	0.2	–	–	11	0.2	11	0.2
36. Somali	11	0.2	–	–	10	0.2	7	0.1
37. Spanish	23	0.5	50	1.0	36	0.7	24	0.5
38. Tagalog	13	0.3	–	–	31	0.6	21	0.4
39. Tamil	15	0.3	–	–	19	0.4	19	0.4
40. Thai	8	0.2	–	–	9	0.2	5	0.1
41. Tongan	5	0.1	–	–	8	0.2	10	0.2
42. Turkish	17	0.3	22	0.4	22	0.5	20	0.4
43. Urdu	7	0.1	–	–	7	0.1	8	0.2
44. Vietnamese	50	1	58	1.2	54	1.1	40	0.8
45. Other	11	0.2	477	9.6	12	0.3	6	0.1
Confidentialised	90	1.8	–	–	90	1.8	71	1.4
Missing data	0	0.0	0	0.0	0	0.0	745	15.0

Note. * Dashes indicate that this language may either have not been used by anyone, or may have been used by a few participants, and these data may have been amalgamated under "other".
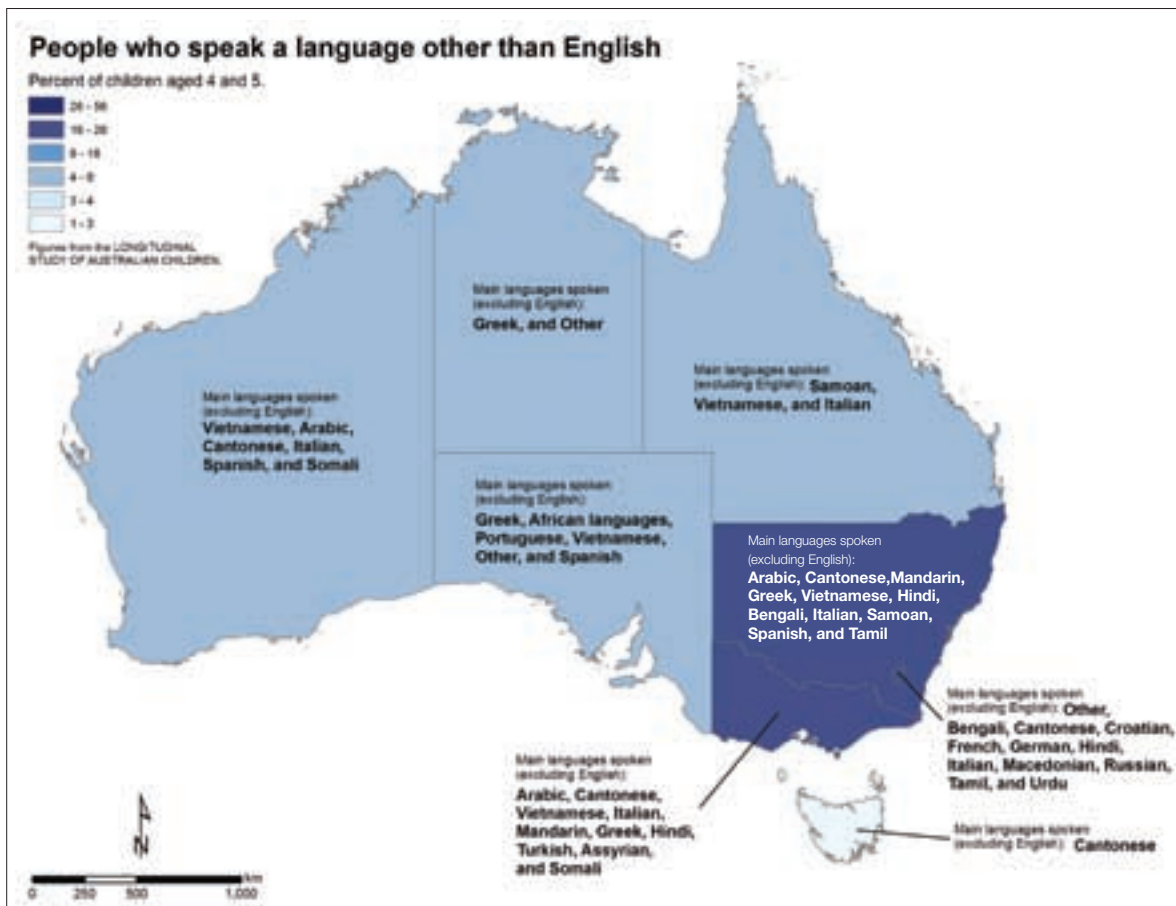
Figure 1. Main languages spoken by Australian children aged 4 to 5 years in each state and territory

Note: The darker shade indicates 16–26% of children aged 4- to 5- years in NSW and Victoria speak languages other than English. The lighter shade indicates 4-9% and the lightest indicates 1–3% of children speak languages other than English in that state/territory.

The main languages other than English spoken by the children differed for each state/territory. The languages spoken by more than or equal to 0.5% of children in each state are listed in order from most to least and are displayed in Figure 1 and Table 2:

New South Wales: Arabic, Cantonese, Mandarin, Greek, Vietnamese, Hindi, Bengali, Italian, Samoan, Spanish, and Tamil.

Victoria: Arabic, Cantonese, Vietnamese, Italian, Mandarin, Greek, Hindi, Turkish, Assyrian, and Somali.

Australian Capital Territory: Other, Bengali, Cantonese, Croatian, French, German, Hindi, Italian, Macedonian, Russian, Tamil, and Urdu.

South Australia: Greek, African languages, Portuguese, Vietnamese, Other, and Spanish.

Western Australia: Vietnamese, Arabic, Cantonese, Italian, Spanish, and Somali.

Northern Territory: Greek, and Other.

Tasmania: Cantonese.

Queensland: Samoan, Vietnamese, and Italian.

Children's educational language environment

Over one-fifth of the children were regularly spoken to in a language other than English (n = 1093, 21.9%). During the interview, parent 1 was asked to indicate "How well does the child's teacher, centre or preschool understand the needs of families from a non-English background or indigenous background?" These parents indicated: "very well" (n = 1050, 21.1%), "well" (n = 796, 16.0%), "just okay" (n = 291, 5.8%), "not done at all" (n = 1166, 23.4%), and "don't know" (n = 1424, 28.6%), and there were missing data for the remainder of the participants (n = 256, 5.1%).

Parents' language status

Primary language spoken by the children's parents

Forty-two different languages were spoken by the children's parents. Most of the children's parents spoke English as the primary language at home (parent 1: n = 4113, 82.5%; parent 2: n = 3480, 69.8%). There were missing data for 15% of parent 2 on this question (n = 745). The next most common languages spoken by parent 1 were Arabic (n = 89; 1.8%), Cantonese (n = 66, 1.3%), Italian (n = 59, 1.2%), and Vietnamese (n = 54, 1.1%). After English, the next most common languages spoken by parent 2 were Arabic (n = 87, 1.7%), Italian (n = 56, 1.1%), Greek (n = 47, 0.9%), and Mandarin (n = 45, 0.9%) (see Table 1).

Parents' proficiency in spoken English

Preschool children's developing speech and language skills are facilitated by copying the models provided by their parents (Kohnert, Yim, Nett, Kan, & Duran 2005); consequently, it is of interest to understand the children's parents' English language proficiency. Parental proficiency in spoken English was determined during the first LSAC interview. Interviews were conducted with parent 1. The majority were conducted in English (n = 4786, 96.0%); however, some interviews were conducted with people interpreting for the parent, specifically: a member of the family or friend (n = 77, 1.6%), a professional interpreter (n

Table 2. The languages other than English spoken by ≥0.5% of children in each state and territory (n = 4983)																
	NSW		VIC		ACT		SA		WA		NT		TAS		QLD	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1. African languages							3	0.9								
2. Arabic	43	2.6	28	2.4					4	0.8						
3. Assyrian			6	0.5												
4. Bengali	11	0.7			1	1.3										
5. Cantonese	34	2.4	19	1.6	1	1.3			4	0.8			2	1.2		
6. Croatian					1	1.3										
7. French					1	1.3										
8. German					1	1.3										
9. Greek	20	1.2	11	0.9			4	1.1			1	2.2				
10. Hindi	11	0.7	8	0.7	1	1.3										
11. Italian	12	0.7	15	1.3	1	1.3			3	0.6					5	0.5
12. Macedonian					1	1.3										
13. Mandarin	25	1.5	14	1.2												
14. Portuguese							3	0.9								
15. Russian					1	1.3										
16. Samoan	12	0.7													9	0.9
17. Somali			6	0.5					3	0.6						
18. Spanish	11	0.7					2	0.6	3	0.6						
19. Tamil	8	0.5			1	1.3										
20. Turkish			8	0.7												
21. Urdu					1	1.3										
22. Vietnamese	16	0.9	17	1.4			3	0.9	7	1.4					6	0.6
23. Other					2	2.2	3	0.9			1	2.2				

Key: NSW = New South Wales, VIC = Victoria, ACT = Australian Capital Territory, SA = South Australia, WA = Western Australia, NT = Northern Territory TAS = Tasmania, QLD = Queensland.

Note: Each column represents the number of children within the state/territory who spoke that language and the percentage equals the proportion of children within that state/territory.

= 55, 1.1%), and/or LSAC employee (n = 65, 1.3%). During the interviews the LSAC interviewer rated the parents' proficiency in spoken English. Only parents who spoke languages other than English were rated. Parent 1 was rated as speaking English very well (n = 555, 11.1%), well (n = 231, 4.6%), not well (n = 127, 2.5%), not at all (n = 39, 0.8%), and don't know (n = 14, 0.3%). Parent 1 then reported on parent 2's ability to speak English. Parent 2 was rated as speaking English very well (n = 540, 10.8%), well (n = 218, 4.4%), not well (n = 73, 1.5%), not at all (n = 18, 0.4%), and don't know (n = 17, 0.3%).

Country of birth and ancestry

The majority of children were born in Australia (n = 4774, 95.8%). There were 9 other listed countries of birth: New Zealand (n = 41, 0.8%), United Kingdom (n = 31, 0.6%), South Africa (n = 13, 0.3%), India (n = 10, 0.2%), USA (n = 9, 0.2%), Philippines (n = 9, 0.2%), China (n = 6, 0.1%), Kenya (n = 5, 0.1%), and Japan (n = 4, 0.1%). Additionally, there were confidentialised data for some children (n = 81, 1.6%). For children not born in Australia, the main years of arrival were 2000 (n = 60, 1.2%) and 2001 (n = 45, 0.9%).

The majority of the children's parents were also born in Australia (parent 1: n = 3696, 74.2%; parent 2: n = 3045, 61.1%). Their reported countries of birth were diverse. For parent 1 there were 47 different countries of birth including: United Kingdom (n = 263, 5.3%), New Zealand (n = 126, 2.5%), China (n = 79, 1.6%), Viet Nam (n = 68, 1.4%), Lebanon (n = 62, 1.2%), and Philippines (n = 53, 1.1%). There were 48 different countries of birth for parent

2 including: United Kingdom (n = 263, 5.3%), New Zealand (n = 125, 2.5%), China (n = 70, 1.4%), Lebanon (n = 54, 1.1%), Viet Nam (n = 50, 1.0%), and India (n = 46, 0.9%). When the children's parents were not born in Australia, the main years of arrival for parent 1 were 1996 (n = 70, 1.4%) and 1998 (n = 85, 1.7%) (range = 1955–2004) and for parent 2 were 1988 (n = 52, 1.0%) and 1989 (n = 69, 1.4%) (range = 1951–2004). Fewer of the children's grandparents were born in Australia: parent 1's mother (n = 3010, 60.4%), parent 1's father (n = 2758, 55.3%), parent 2's mother (n = 2476, 49.7%), and parent 2's father (n = 2311, 46.4%).

Aboriginal and Torres Strait Islander participants

A small number of the children were identified by their parents as Aboriginal and/or Torres Strait Islanders (n = 194, 3.9%). The greatest proportion of children (calculated as the proportion of the state/territory's 4- to 5-year-old children in this sample) were from the Northern Territory (n = 8, 17.8% of the 4- to 5-year-old children within the Northern Territory), and Tasmania (n = 13, 10.3%), with the remainder from Queensland (n = 67, 6.8%), New South Wales (n = 65, 3.8%), Western Australia (n = 17, 3.5%), South Australia (n = 7, 2.0%), Victoria (n = 15, 1.3%), and Australian Capital Territory (n = 1, 1.3%). Across the entire sample there were 22 children (0.4%) who spoke or understood an Australian Aboriginal language. A small number of the children's parents identified themselves as Aboriginal and/or Torres Strait Islander (parent 1: n = 142,

2.9%; parent 2: n = 77, 1.5%). There were missing data for 745 (15.0%) of parent 2's responses.

Discussion

Understanding the demography of Australia's children enables speech pathologists, early childhood educators, and interpreters to plan services for children who speak languages other than English. These data highlight the diversity of languages represented in Australian 4- to 5-year-olds and their parents. These nationwide data concur with the distribution of languages reported in a study that has examined children's language skills within the state of Victoria. Nicholls, Eadie, and Reilly (in press) found that 31 different languages were spoken by children at age 3 within the Early Language in Victoria Study, which were similar to the 35 languages that were listed in the current study as being spoken across Australia.

The importance of examining data for children, instead of relying on the Australian national census data, is highlighted in two ways: first by considering primary languages spoken and second by considering languages used by state. The most common primary languages other than English spoken by the children in the current study were: Arabic, Cantonese, Vietnamese, Greek, and Mandarin. These were in a different in order compared with the home languages spoken by the entire Australian population: Italian, Greek, Cantonese, Arabic, Mandarin and Vietnamese (ABS, 2006a). Notably, although Italian was the most common primary language other than English spoken by the Australian population, it was not a common first language spoken by the children in the current study. However, Italian was the most common additional language spoken by the children in the current study.

There may be a difference in the proportion of speakers of languages other than English between the general Australian population and 4- to 5-year-old children in each state. According to the publicly available data from the Australian Bureau of Statistics (ABS, 2006c), the proportion of Australians who were 5 years of age or older who spoke a language other than English was as follows: the highest proportion (26–56%) was in New South Wales, Victoria, and Northern Territory, followed by 16–25% in South Australia and Western Australia, 4–9% in Queensland, and only 3–4% in Tasmania (ABS, 2006c) (see Figure 2). Extrapolating data from the current study for 4- to 5-year-olds (by subtracting the number of children who spoke English), there are no states where 26–55% of children spoke a language other than English as their primary language. The states where 16–25% spoke languages other than English as their primary language are in order: New South Wales, Victoria, Australian Capital Territory, then 4–9% in South Australia, Western Australia, Northern Territory, and Queensland, with less than 2% in Tasmania. By examining these data from children, future national trends of languages used in the Australian community may be predicted; for example, Italian may not be a major language spoken in Australia in the future. These data may also provide information regarding linguistic support for required for children's transition to school, in order to facilitate speech, language and literacy acquisition by the critical age (Bishop & Adams, 1990; Nathan et al., 2004).

One limitation of this study was that, although the data were from a nationally representative sample of 4- to 5-year-old children and responses were statistically weighted, it is important to acknowledge that some of the information presented about language use related to very few children. For example, each of the 12 languages listed as spoken in the Australian Capital Territory were only spoken by 1 child. This heterogeneity of languages is consistent with Canberra's position as the nation's capital and the many consulates and embassies located there.

The current findings represent the most comprehensive information currently available about cultural and linguistic diversity of a nationally representative sample of Australian preschool children. These data should be interpreted in conjunction with an understanding of the demography of each speech pathologist's local context, and can be used by speech pathologists, early years educators, and interpreters to guide allocation of resources for development of information, assessments, and interventions.

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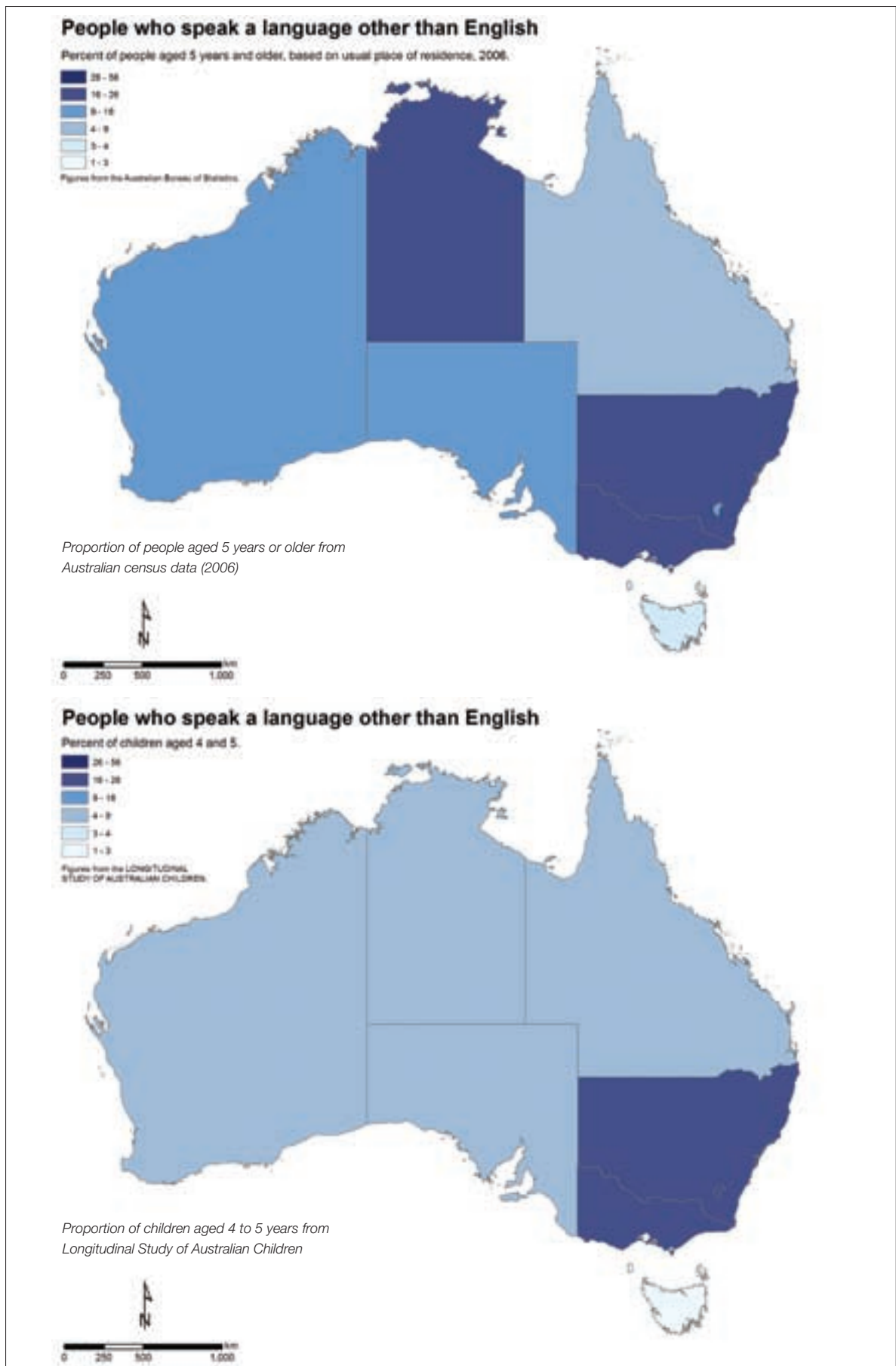**Figure 2. (a) Proportion of Australians (aged 5-years and older) who speak a language other than English by state and (b) Proportion of Australian children (aged 4- to 5-years) who speak a primary language other than English by state.**
Note: The darkest shade indicates 16–26% speak languages other than English, the mid shade indicates 9–16%, the lighter shade indicates 4–9% and the lightest indicates 1–3%.

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1 Throughout the paper the number of children was always provided alongside the percentage because some of the information presented about language use related to very few children.

Professor Sharynne McLeod is an Australian Research Council Future Fellow who is undertaking a four-year project titled "Speaking My Languages: International Speech Acquisition in Australia". She is editor of two books on the topic: *International Guide to Speech Acquisition* (Cengage) and *Multilingual Aspects of Speech Sound Disorders in Children* (Multilingual Matters). She is also editor of the *International Journal of Speech-Language Pathology* and a fellow of both Speech Pathology Australia and the American Speech-Language-Hearing Association.

Correspondence to:
Professor Sharynne McLeod
Charles Sturt University
Panorama Ave
Bathurst, NSW, 2795, Australia
email: smcleod@csu.edu.au

Examining culturally valid language assessments for Indigenous children

Petrea Cahir

**THIS ARTICLE
HAS BEEN
PEER-
REVIEWED**

Petrea Cahir

In 2008, the Council of Australian Governments (COAG) committed itself to reducing Indigenous[1] disadvantage and closing the life-expectancy gap between Indigenous and non-Indigenous Australians within one generation. Given the established links between language development, literacy, well-being, and life expectancy, the majority of COAG's endorsed areas of focus ("building blocks") relate directly to services provided by speech pathologists. Speech pathologists are therefore invited to take their places in affording change to achieve this overall goal. A step towards successful provision of services is the application of valid and reliable assessment methodologies for a given population. The aim of this non-exhaustive literature review is to provide some of the evidence available to speech pathologists working with Indigenous children regarding culturally safe and valid cross-cultural communication assessments. It is hoped that speech pathologists will treat this review as an introductory resource when investigating relevant assessment options for culturally valid research and/or clinical practice.

Speech pathology in an Indigenous Australian context

Speech pathologists (SPs) are experts in language and communication who work with clients and families from diverse social, cultural, and linguistic backgrounds. Communication behaviours vary cross-culturally and these differences require careful consideration from SPs when discerning language *disorder* from language *difference*. In Australia, this is of course true for SPs working with Indigenous children growing up in monolingual, bilingual, multilingual, or bidialectal communities.

A recent web-based Speech Pathology Australia Discussion board entitled "Aboriginal Australians and Language" (moderated by Dr Cori Williams) showed anecdotally that some Australian SPs working with Indigenous children are not confident that their methods of assessment are culturally and linguistically valid (Speech Pathology Australia, 2010). While there are multiple contributing factors to the use of suboptimal assessment procedures (e.g., the assessment is used to qualify for extra services [Gould, 2008a]), SPs can no longer ignore the fact that it is an ethical disservice to culturally and linguistically diverse (CALD) populations to provide invalid, non-evidence based clinical diagnoses and recommendations (Scarinci, Arnott, & Hill, 2011). The risks of ignoring this void include the continuation of over- (see Gould, 1999, cited in Gould, 2008b) and under-diagnosis of language disorders in CALD children (Bedore & Peña, 2008).

Valid assessments of language skills are necessary for the accurate classification of language *disorder* versus language *difference* for Indigenous CALD children (Gould, 2008b). While research into the bilingual child's speech and language development is becoming increasingly available (e.g., Guttiérrez-Clellen & Peña, 2001; Nicoladis & Genesée, 1997) there remains a paucity of valid published guidelines or measurement tools for assessing speech and language development of Indigenous children around the globe. It is therefore not surprising that Döpke (2003), Gould (2008b), and Kritikos (2003) each found that when assessing the language development of CALD children, monolingual SPs tended to use assessments valid for monolingual English language development only. Such assessments do not account for a) the path of bi- or multilingual development, b) linguistic differences (e.g., dialects), or c) other cultural and social differences. The result is the misclassification of the Indigenous child's language abilities, which has health, economical, social and political ramifications.

Over-diagnosis can place unnecessary stress on families, lengthen waiting lists, add needless strain to funding resources, and skew policy-makers' knowledge of communication disorder prevalence. Underdiagnosis can also result in family stress and anxieties as caregiver concerns go unvalidated. Clinically, under-diagnosis is an ethical issue since children with communication disorders potentially go unidentified. Furthermore, given the relationship between language abilities, literacy, and subsequent educational and occupational opportunities, under-identification is by no small measure a violation of a child's rights to intervention. Being experts in communication, SPs should be leading the way in health and education to think outside the standardised

assessment box. They can do this by recognising the shortcomings of standardised assessment and developing a framework for ensuring that cross-cultural assessments (i.e., when the examiner is from a different culture to the examinee) are valid and reliable. Furthermore, our profession should be encouraging policy-makers to consider the limitations of current assessment criteria required to qualify for funding and champion the benefits of conducting assessments in a child's primary language when it is not the majority language.

A range of variables needs to be considered when working with Indigenous Australian families. While each of these variables is highly relevant to the theory and practice that drive culturally safe assessment methodologies, there is not enough space in this forum to discuss such factors. Readers are alternatively referred to the 2007 Speech Pathology Australia resource: *Working with Aboriginal people in rural and remote Northern Territory – A resource guide for speech pathologists* (Speech Pathology Australia, 2007). This guide provides introductory information regarding the concept of "shame"[2], importance of kinship systems, family, languages, and dialects of Aboriginal people as well as the prevalence of ear disease within Australian Indigenous paediatric populations.

Some of the literature considered in this current report applies to CALD as opposed to CALD *and* Indigenous populations. While both populations require acknowledgement of the influences that bi- and multilingual language development have on a child's emerging language skills, there are additional dimensions that differ. For example, for many Indigenous families, there are the added dimensions of potential generational social, economic, emotional, and health disadvantages (Zubrick et al., 2004). Such factors might affect the prevalence of disorders and influence the potential for making intervention gains. Positive differences must also be considered. For example, many Indigenous Australian clans live in close familial contact and promote a rich communicative environment for their young people (Lowell, Gurimangu, Nvomba, & Yingi, 1996).

Assessment methods

The methods of assessment considered in this report include caregiver report, language sample analysis, dynamic assessments, adaptation of standardised tests, and non-word repetition stimuli.

Caregiver report

Caregiver report has been identified as a valid and reliable identifier of linguistic development skills (e.g., vocabulary) for bilingual English-Spanish children (Marchman & Martinez-Sussmann, 2002; Thal, Jackson-Maldonado, & Acosta, 2000; Vagh, Pan, & Mancilla-Martinez, 2009). Unfortunately there is a scarcity of literature that considers the reliability and validity of caregiver report in Indigenous CALD populations. Although there is an Australian measure that includes primary caregiver report, it has not undergone a formal, statistical process of validation and reliability. Based on the *Kimberley Early Language Scales* (Bochenek, 1987), the *Revised Kimberley Early Language Scales* (R.K.E.L.S.; Philpott, 2003) has been developed for specific Indigenous populations (in the Kimberley, Western Australia, and Katherine, Northern Territory regions) by an experienced team of Aboriginal and non-Aboriginal SPs, interpreters, linguists, and cultural advisors. The team

acknowledges the importance of caregiver report within its checklist which is divided into developmental skills. It is similar to language scales such as the *Rossetti Infant-Toddler Language Scale* (Rossetti, 2005) in that it has different options for "checking off" communication skills (i.e., reported by caregiver [R], observed [O], and elicited [E]). The R.K.E.L.S. can be administered by non-SP health professionals and it is recommended that an Aboriginal co-worker (e.g., interpreter or Aboriginal health officer) is present where possible. Philpott (2003) admitted that one limitation of the R.K.E.L.S. is its reliance on Western-style literacy and Philpott therefore suggested that future versions/adaptations could be presented orally or visually. Jones and Campbell Nangari (2008) also commented that written questionnaires that depend on parent report might not be reliable measures due to low parental literacy levels in the Indigenous language (Indigenous Australian languages have oral histories).

The R.K.E.L.S. can potentially be used in a variety of settings and acknowledges that context of administration will most likely affect elicitations and observations of communication skills. In light of this, Philpott (2003) recommended that the optimum environment for testing is the home/camp setting. This introduces the running theme throughout this literature review: the importance of context and contextual knowledge when assessing communication development.

Teacher report

Similar to parent report, teacher report has also been found to be reliable in bilingual contexts (Guttiérrez-Clellen, Restrepo, & Simon-Cereijido, 2006). Gould (1999, cited in Gould, 2008b) however found that non-Aboriginal teacher report was not necessarily a reliable measure to accurately identify language impairment in a sample of Aboriginal English[3]-Standard Australian English (AE-SAE) bidialectal Aboriginal children in rural New South Wales. It was generally found that this was secondary to teacher unfamiliarity with AE and cultural differences regarding pragmatics and social communication. For example, Aboriginal children would face away from non-Aboriginal teachers. Teachers identified this as evidence of an attention or listening deficit whereas the SP researcher, who was experienced in AE communication styles, regarded it as pragmatic *difference* which should be viewed in the context of differing cross-cultural communication styles.

Alarmingly, Gould (2008a) further discovered that at a school in rural Australia, non-Aboriginal educators were more likely to associate communication differences with unconfirmed medical diagnoses such as Foetal Alcohol Spectrum Disorders (FASD) than linguistic or cultural differences. In addition, teacher awareness of the prevalence of ear disease in Aboriginal populations, associated hearing loss and its impact on classroom interaction, and language and academic learning was low (Gould, 2008a). All of these factors contributed to the over-identification of communication disorders within the sample population.

These findings highlight the need for school policies and their enforcers to provide non-Indigenous educators working in Indigenous communities with professional development regarding factors potentially contributing to communication behaviours (e.g., cross-cultural pragmatic differences) and limitations (e.g., chronic otitis media and associated hearing loss; Williams and Jacobs, 2009).

Contextualised language sample analysis

The comprehensive assessment of any child's communication skills should include the analysis of a spontaneous language sample. The sample provides the SP with baseline, pre-intervention data and evidence of discourse skills. A variety of methods are available to elicit connected speech samples including free-play, activity-based play, narratives, and conversation. In a culturally different environment, young children are potentially reticent to communicate naturally (Moses & Wigglesworth, 2008), thus affecting the validity of the obtained sample.

Gould (2008b) showed that language sample analysis has the potential to be a valid, culturally appropriate method of assessment for AE-speaking children. In her longitudinal study Gould (2008b) identified methods of language sample elicitation that are more effective than others when assessing language development in an AE speech community in Queensland, Australia. The study considered a number of different methods: a) minimally structured storytelling (natural conversation and play); b) elicited story generation (first person narratives and conversations about local Aboriginal stories); c) story retelling (verbal narrative reconstruction of a Western story [picture book style] and an unfamiliar Aboriginal story [told on video by an Aboriginal man]). Gould found that situational, environmental, and linguistic contexts surrounding the language sample collection affected the suitability of the sampling technique (Gould, 2008b). The setting, topic, and interlocutors involved were identified as the main variables to influence the effectiveness of eliciting qualitatively valid and reliable data. The most effective language samples were elicited through conversations between the child and AE-speaking adults from the child's community. Audio-visual recordings of free play (while speaking AE) were also regarded as effective. Gould (2008b) further found that the most difficult methods of elicitation for children aged 4–5 years included story retelling and first person narratives with visual picture cues. Finally, and most pertinently, general conversation with a non-Aboriginal adult was not generally regarded as a reliable method of eliciting valid spoken language samples. The less useful strategies resulted in increased amount of effort by the examiner to elicit spoken language and a reduction in sentence length and complexity of elicited utterances. Of particular note was the reduction of spontaneous communication by Aboriginal children when retelling western stories. More representative samples were elicited when children were exposed to an unfamiliar Aboriginal story. In addition to highlighting language production differences between elicitation contexts, these results remind us of the potential underlying cross-cultural variations that exist for discourse and narrative structures (see Kaplan, 1972, for an introduction) warning of the limitations of standardised tests using story retell.

Gould (2008c) provides a number of considerations to maximise cultural appropriateness during assessment trials, including the benefit of becoming familiar with examinees prior to assessments; the use of culturally meaningful language during sessions; avoidance of the "pull-out" method where possible to limit feelings of "shame"; informal assessment to minimise potential power imbalances between SAE and AE speakers, and; the need to consult and collaborate with Indigenous people about appropriate cultural interactions and expectations. Two additional considerations have been identified by First Nations community members in Canada: aim to involve primary caregivers in assessment sessions; and begin sessions with receptive language tasks (Ball & Bernhardt, 2008).

Collectively, these are not difficult steps for practising clinicians to take. Time and efficiency are not valid reasons to ignore these strategies since rejecting such recommendations would potentially increase the likelihood of obtaining invalid assessment data, in turn adding to workloads unnecessarily. As a first step to culturally relevant criterion referenced norms for AE speakers, Gould (2008b) shows that there are effective, culturally relevant methods of language sampling that result in valid, representative discourse data. This non-standard approach to assessment can be used in preference to formal, standardised assessments which can culturally alienate and disempower the child (e.g., through feelings of "shame") as soon as he/she walks into the unfamiliar clinic environment.

How then should valid language samples be analysed? Given the current absence of norms for AE and Indigenous Australian language speakers, language sample analyses are limited by the fact that criterion-based measures such as mean length of utterance (MLU) are based on Standard English as a first language. Two studies discuss the development of standard reference criteria for Indigenous First Nation and Indigenous South African language communities respectively (Ball & Bernhardt, 2008; Naudé, Louw, & Weideman, 2007). Naudé et al. (2007) recognised the demand for immediate, valid measures in multilingual, English-dominant societies and thus explored the utility of disregarding the advised method of testing development in both/all languages (Speech Pathology Australia, 2009). As an alternative, they observed typical development and analysed language samples of the bi-/multilingual child's acquisition of English as an *additional* language. Criterion referenced measures including MLU and type-token ratio were used in analyses. This procedure acknowledged Nicoladis and Genesée's (1997) assertion that a valid measure should come second to the establishment of typical development. Naudé et al. (2007) aimed to describe a typical English language profile for a selected group of urban multilingual South African preschoolers. After establishing the expected language patterns, clinicians were able to use this set of indicators as a checklist to determine deviations from expected performance. Interestingly, wide ranges of MLU were described within age-groups (potentially due to individual difference) and thus the authors suggested that alternative measures to help assess expressive language skill development should be investigated.

The above findings indicate that there is potential for the development of Indigenous linguistic, and/or dialectal, developmental expectations and thus the establishment of reliable criterion referenced measures. However, the heterogeneity of Australia's Indigenous population should always be considered. There is no guarantee that the validity of a particular method will not change between different communities.

Dynamic assessment

Over the past 15 years dynamic assessment, a mediated form of assessment, has received attention in the speech pathology discipline as a means of assessing and providing appropriate language intervention for CALD children (Carter et al., 2005). Based on methods in educational psychology (Ukrainetz, Harpell, Walsh, & Coyle, 2000), dynamic

assessment principles address the potentially confounding aspects of standard forms of assessment (e.g., culturally specific question–answer routines). That is, CALD children who, for example, are not exposed to the direct nature of western speech pathology style questioning at home, might be misidentified as language impaired on the basis of responses that represent cultural difference rather than language difficulty.

Dynamic assessments incorporate a learning component into the testing situation in preference to static assessment administration. The learner's responsiveness to teaching is assessed. Test-teach-retest procedures have been identified as the most suited dynamic approach to SP assessment and intervention (Guttiérrez-Clellen & Peña, 2001). Such approaches, however, are limited to the diagnostics of learning impairment and do not necessarily provide specific information concerning where language breakdown occurs (Gutiérrez-Clellen et al., 2006). For example, dynamic *testing* (a shortened version of dynamic assessment) has been shown by Chaffey, Bailey, and Vine (2003) to provide valid data regarding high learning potential in a sample of rural NSW Australian Aboriginal primary schoolers (grades 3–5). This form of testing proved to be a more sensitive measure compared to alternative static cognitive testing, highlighting the potential of dynamic testing in school assessments.

More recently, Kramer, Mallett, Schneider, and Hayward (2009) investigated the use of dynamic language assessments to assess narrative abilities of First Nations, grade 3 students on the Samson Cree Reserve, Alberta, Canada. The authors used the Dynamic Assessment Intervention tool (DAI; Miller, Gillam, & Peña, 2001) that was designed to minimise social and cultural bias when assessing language development with CALD children. The mediated test-teach-retest method was employed to test oral narrative constructions from wordless storybooks. Samples were scored according to content (e.g., establishment of time and place) and results showed that the DAI accurately differentiated most typical language learners from those learners with possible language-learning difficulties.

Although Kramer et al. (2009) discussed the universality of the storytelling, the authors did not examine the cultural validity of the criteria used for scoring the stories. The cultural validity of scoring needs to be considered in light of cultural variability. That is, certain semantic features might have a different significance according to linguistic and/or cultural membership. This idea is based on the linguistic relativity hypothesis which suggests that perception is limited by the language in which we think and speak. For example, when telling a story, speakers of language X might preferentially refer to the *place* of an event over *time* of the same event, whereas speakers of language Y might consider the place far less important than the time. This does not limit the usefulness of dynamic assessment, but does remind users of the impact culture and language can have on interpretation of assessment results.

Novel linguistic stimuli approach

A proposed alternative method of limiting cultural and linguistic biases in language testing is to use novel stimuli in assessments. Non-word repetition tasks have been used to access verbal working memory since with careful construction, stimuli are not dependent on a participant's lexicon (Gathercole, 1995). Stimuli are however dependent on phonological familiarity and thus must be constructed according to the phonotactics of the target language. The evidence for their reliability with English-Spanish bilingual speakers in the United States is not yet established. Ellis Weismer et al. (2000) found supporting evidence whereas Guttiérrez-Clellen and Simon-Cereijido (2010) concluded that if this type of testing is to be completed, both languages need to be assessed and the testing should not be used to make diagnoses in isolation. Speech Pathology Australia (2009) similarly recommends the assessment of both/all of a CALD child's spoken languages.

The successes or shortcomings of using non-word stimuli with English-Spanish bilinguals compared with Indigenous Australian populations cannot be drawn without complication. For example, the inherently formal nature of the non-word repetition assessment and its non-meaningful stimuli (Gould, 2008b) suggests that in an Indigenous Australian environment, performance is potentially confounded by contextual cultural bias. A variation of formal non-word repetition tests was therefore trialled when assessing language development in an Australian Aboriginal community (Gould, 2008c). Gould (2008c) describes how she overcame cultural barriers by designing a non-word repetition task for use in the aforementioned longitudinal research project assessing language development of AE speakers. The trialled assessment is based on the familiar speech pathology subtest of the Queensland University Inventory of Literacy (QUIL; Dodd et al., 1996) and the Sutherland Phonological Awareness Test – Revised (Neilson, 2003). It is an elegantly designed adaptation of a non-word test involving the use of 18 phonotactically AE-relevant non-words (see Gould, 2008c for a full description of testing methodology). It differs from other non-word tests; while it requires the child to repeat the non-word, repetitions are elicited during a play-based activity rather than during a formal standardised repetition task.

Overall, Gould (2008c) shows that the culturally sensitive administration of a culturally appropriate assessment tool helps to: identify contributing reasons for literacy development difficulties; give qualitative information as to the nature and severity of difficulties; highlight abilities which had not been considered or had been ruled out by formal testing; and identify the need for a hearing assessment. Clearly this culturally appropriate format of assessment contributes greatly to an overall picture of a child which is potentially more accurate than that drawn from formal, culturally biased assessments.

At this stage, results of such a non-standard assessment are unable to be compared with norms. Gould (2008c) suggests that in the absence of norms, data analysis should be completed in conjunction with Aboriginal educators/co-workers. When adapting a standardised test, translation of linguistic stimuli alone is not sufficient to ensure validity when assessing a CALD child's communication abilities (Carter et al., 2005; Speech Pathology Australia, 2009). Gould (2008c) highlighted the need for cultural translation and adaptation on a number of levels including environmental context, test format, examinee/examiner relationship, recognition of different learning styles, and recognition of cultural differences such as "shame". Gould (1999 cited in Gould, 2008b) also showed that without accounting for these differences when testing communication development of Australian Aboriginal children, standardised tests are likely to result in the over diagnosis of language impairment.

Conclusion

Language measurement of culturally and linguistically diverse populations is subject to a number of biases including content, linguistic, and cultural bias. These limitations render a standardised assessment invalid. Nonetheless, standardised tests are used by Sps worldwide regardless of their known shortcomings (Carter et al., 2005; Döpke, 2003). This has resulted in years of misclassification (over- or under-identification) of language disorders in Indigenous CALD children (Gould, 2008c; Ukrainetz et al., 2000).

In this era of evidence based speech pathology practice, it is the discipline's obligation to ensure appropriate and ethical (i.e., valid and reliable) measurement of language abilities in any population. This report considers a number of different approaches to providing valid language assessment for Indigenous populations, with particular reference to Indigenous Australian populations. One frequently cited limitation to valid assessment is the lack of cultural and linguistic developmental norms. Fortunately, projects such as the Aboriginal Child Language Acquisition (ACLA) study (see Simpson and Wigglesworth, 2008) are taking steps to narrow this gap in speech pathologists' knowledge. In the meantime, it is suggested that the best resource for valid assessment is found in community consultation. Finally, it is hoped that this synopsis inspires Sps to collaborate with other experts in cross-cultural communication to develop these ideas further and to help "close the gap".

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1 The term "Indigenous Australian" will be used to refer to people who identify as Aboriginal or Torres Strait Islander peoples. The term "Aboriginal" refers to the original inhabitants of Australia and "Torres Strait Islander" refers to the original inhabitants of the Torres Strait Islands.

2 The Australian Aboriginal concept of "shame" is not equivalent to the Anglo concept of shame. It relates to the physically evident feeling of being singled-out from a group (e.g., answering questions in class (Moses & Wigglesworth, 2008) or due to disability (see Speech Pathology Australia, 2007). This needs to be considered by SPs within a number of contexts including: the "pull-out" method (removing a child from a classroom to conduct assessment or intervention); or asking direct questions of children or caregivers (e.g., when obtaining a case history).

3 Aboriginal English (AE) is spoken widely across Australia and differs from Standard Australian English (SAE). It differs according to its developmental path, its conceptualisations, its history, its construction, its functions, norms, and meaning for Aboriginal people (Department of Education, 2002; Malcolm, 2010).

Prior to completing a Master of Speech Pathology and commencing clinical work as a speech pathologist, **Petrea Cahir** completed an honours thesis in linguistics which helped document a Top End Aboriginal language. Petrea continues to work as a research assistant on a longitudinal speech and language development study while working clinically in a paediatric hospital.

Correspondence to:
Petrea Cahir
Speech Pathologist
Murdoch Childrens Research Institute
Speech Pathology
The Royal Children's Hospital
50 Flemington Road
Parkville VIC 3052
email: petrea.cahir@mcri.edu.au

Oral narratives produced by Aboriginal Australian children:

Dilemmas with normative comparisons

Wendy Pearce and Emma Stockings

Wendy Pearce (top) and Emma Stockings

This study investigated the characteristics of oral narratives produced by six Aboriginal children aged between 6;6 and 9;6 years in North Queensland. Fictional narrative retellings were analysed at microstructure and macrostructure levels. Results were compared to the narrative story retell database included in the Systematic Analysis of Language Transcripts software. Most children gained lower results on measures of narrative microstructure, such as mean length of C-unit and number of different words, but performed well on several measures of narrative structure, namely the Narrative Scoring Scheme (NSS) total score and component scores for Introduction, Character Development and Conclusion. Older children performed within normal limits, or better, on more NSS measures than the younger children. Implications for the development of appropriate assessment measures for Aboriginal children are discussed.

Key findings of the Australian Early Development Index (AEDI), a national progress measure of early childhood development, revealed that the majority of Aboriginal children are developmentally on track in many domains, but not language and cognitive skills (Centre for Community Child Health and Telethon Institute for Child Health Research, 2009). This is a concern for speech pathologists who may be called on to assess children with suspected language delays. Currently, assessments used by Australian speech pathologists have not been standardised for Aboriginal children. As a result, accurate diagnosis of language impairment (LI) or differences (LD) arising from cultural and linguistic factors is difficult to achieve. Consequently, there is both an over- and underrepresentation of these students in special education (de Plevitz, 2006).

Language sampling is often the assessment method of choice for children from culturally and linguistically diverse (CLD) backgrounds (Munoz, Gillam, Peña, & Gulley-Faehnle, 2003). It enables speech pathologists to adapt their interaction style to suit the child and avoid cultural challenges that may be present in standardised assessments. For example, in some Aboriginal communities display questions (asking the child to tell the examiner what the examiner already knows) are not a feature of traditional communicative practices (Moses & Wigglesworth, 2008). Language sample analysis (LSA) methods enable descriptive profiling of linguistic strengths and weaknesses by comparing measures from the child's sample to what is known about typical development in the target population (Price, Hendricks, & Cook, 2010; Westerveld, Gillon, & Miller, 2004). Computerised LSA databases now make the task of normative comparisons much easier because the software will compute statistical comparisons between a child's language sample and normative data from other children of the same age performing similar language tasks (Price et al., 2010). Australian speech pathologists are disadvantaged because existing normative data have typically been derived from overseas populations such as the US, UK, or NZ. While it is often assumed that English language development is similar across Australia, the USA, UK, and NZ, supportive evidence is scarce (see Westerveld, 2011). For example, a study of narrative retells from 39 Australian and 47 NZ children (5- and 6-years-old) found higher grammatical accuracy measures for the NZ children (Westerveld & Claessen, 2009).

One discourse of diagnostic importance is oral narrative which acts as a vital medium for academic, social, linguistic, and cultural learning. Oral narrative is a universal cultural practice and an appropriate means for describing language development in children from many different cultures (Muñoz et al., 2003). Many narrative assessment measures are sensitive to both language development (Muñoz et al., 2003; Petersen, Gillam, & Gillam, 2008) and impairment (Epstein & Phillips, 2009; Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; Pearce, James, & McCormack, 2010). Children's oral narratives are typically analysed at two levels, namely microstructure and macrostructure, as difficulties may be evident at both levels. Microstructure analyses primarily focus on children's linguistic form and content (Heilmann, Miller, Nockerts, & Dunaway, 2010). Measures that reflect both productivity and complexity include the number of communication units (C-units; each independent clause and its dependents, and phrasal or single word utterances), mean length of C-units (MLCU), number of different words (NDW), and grammatical

accuracy (GA). These measures are sensitive to both development (Heilmann et al., 2010) and LI in school-age children (Fey et al., 2004). Macrostructure analyses are used to investigate the ability to construct and sequence a representation of the main story elements including the setting, problem, attempts at solving the problem, and a resolution (Heilmann et al., 2010). Narrative complexity increases with age (Heilmann et al., 2010). Compared with their typically developing peers, children with LI produce structurally poorer narratives (Epstein & Phillips, 2009; Fey et al., 2004).

Much of the current literature on Aboriginal children's language skills includes broad descriptors of Aboriginal oral discourse, pragmatic, lexical, and grammatical features. The features of many varied dialects are drawn from a range of specific geographical localities and language communities and collectively termed "Aboriginal English" (AE), with comparisons drawn against Standard Australian English (SAE) (Berry & Hudson, 1997; Butcher, 2008; Malcolm et al., 1999; Speech Pathology Australia, 2007; Turnbull, 2002). From this literature, we know that events in Aboriginal narratives often focus on movement from place to place and connection to prior experiences of the speaker or listener. Their narratives are less focused on linear timelines than those of non-Aboriginal Australians. Orientation with respect to people and place is also important. Morphosyntactic features include omission of plurals, tense markers and prepositions or variations in the forms used (e.g., "them two boy gonna catchim fish"). Pronoun forms may be varied with respect to case, possession, and lack of gender marking (e.g., "e" for "he" and "she"). Pragmatic differences include the acceptance of silence and choosing not to respond. Lexical items may also differ (e.g., "gammin" to mean "nonsense" or "just kidding"). These features are not described in the literature with reference to developmental norms, or with respect to assessment frameworks for oral narrative that are typically used in speech pathology practice. Consequently, clinicians may be unsure about how to interpret the presence or absence of features of AE.

Considering the importance of oral narrative performance to diagnosis and academic outcomes, there is a clear need for ongoing research to investigate the characteristics of oral narrative produced by Aboriginal children across many regions of Australia. To this end, this pilot research project aimed to answer the following questions:

1. What are the microstructure and macrostructure characteristics of oral narratives produced by Aboriginal children in North Queensland?
2. How do the oral narratives of Aboriginal children compare to norms derived from existing LSA databases?

Methodology

Ethics approval for this research was granted by the James Cook University Human Research Ethics Committee and the school that the participants attended. Families received information about the aims, objectives, and benefits of being part of the study from an Aboriginal teacher aide. Families interested in being involved in the study provided informed written consent.

Participants

Six Aboriginal children aged between 6;6 and 9;6 years were recruited from a church-managed, government-funded school for Aboriginal and Torres Strait Islander children in an urban area of North Queensland. This school did not have routine access to assessment or support services such as psychologists or advisory special education teachers, but a limited speech pathology service was provided by a university student clinic for children in prep and years 1 and 2. Teachers were asked to identify children who were "making normal or good progress in school". There is no "gold standard" assessment of academic or oral language skills recommended for Aboriginal children (de Plevitz, 2006; Gould, 2008) so teacher evaluations of academic progress were considered the best available referent for this pilot study. Standard Australian English (SAE) was the primary language of instruction used by teachers at the school. Development of the ability to effectively code switch between SAE and Aboriginal English (AE) was encouraged in the classroom context. Most families of children attending the school were reported to be from low socioeconomic backgrounds, with high levels of unemployment. The children were brought to and from the school on a bus owned by the school, a measure designed to facilitate school attendance.

Demographic data for the six participants are summarised in the first part of table 1. Teachers reported that SAE was spoken in the home of one participant, whereas AE was spoken in the homes of the remaining participants. Due to limited resourcing for this pilot study, access to parents or other responsible family members was not possible to gain further background information. The hearing and health status of the children was unknown.

Procedure

All language samples were collected by the second author, a non-Aboriginal, who addressed the children using SAE, as would be typical for most speech pathology assessments in Australia. This context was considered likely to elicit SAE from the participants if they were capable of doing so. Participants were seen at school, firstly engaging in group conversation and games to ensure that the children felt comfortable with the examiner. Each participant then individually engaged in conversation with the examiner followed by elicitation of a retell of the wordless picture book *Frog, Where Are You?* (FWAY) (Mayer, 1969). The examiner told the story following a set script (Miller & Iglesias, 2008), after which each participant retold the story using the book as a visual aid. Examiner prompts were restricted to provision of support to begin the story and open-ended cues to continue the retell. For example "Keep going" or "You are doing a great job!" This retell approach reflected display language which is not always culturally appropriate in some Aboriginal communities; the extent to which this applies to Aboriginal people living in urban contexts is unknown. However, the approach was selected because it followed the procedure used to collect the language samples for the comparison data base, is commonly used in speech pathology practice, and the children in the present study were accustomed to displaying their knowledge in the classroom.

The participants' narratives were audio recorded and transcribed by the first author into the computer software program Systematic Analysis of Language Transcripts (SALT) (Miller & Iglesias, 2008). Utterances were segmented into communication units (C-units) defined as "an independent clause and its modifiers" (Loban, 1976, as

Table 1. Participant results for microstructure and macrostructure analyses		P#1	P#2	P#3	P#4	P#5	P#6
Participant		P#1	P#2	P#3	P#4	P#5	P#6
Age		6;6	7;5	7;7	8;7	8;9	9;6
Gender		F	M	M	F	M	F
School year level		1	2	1	3	3	3
Home language		AE	SAE	AE	AE	AE	AE
Microstructure	NCU	44 (+0.35)	32 (–0.63)	23 (–1.48)	28 (–1.26)	33 (–0.88)	89 (+2.06)
	NDW	78 (–0.97)	66 (–1.99)	45 (–3.01)	69 (–1.97)	66 (–3.13)	163 (+0.04)
	MLCU	6.38 (–1.25)	5.50 (–2.57)	6.90 (–1.26)	7.26 (–0.52)	5.72 (–1.82)	6.93 (–1.10)
	GA–SAE	57%	78%	78%	82%	79%	76%
	GA–AE	89%	84%	91%	82%	94%	92%
Macrostructure Narrative Scoring Scheme (NSS)	Introduction	2 (–0.77)	3 (+0.05)	1 (–1.99)	3 (–0.66)	3 (–0.67)	4 (+0.51)
	Character development	3 (+0.12)	4 (+0.97)	2 (–1.20)	4 (+0.87)	5 (+2.14)	5 (+1.83)
	Mental States	2 (–0.31)	1 (–1.99)	1 (–2.09)	2 (–0.84)	1 (–2.08)	1 (–2.45)
	Referencing	2 (–1.45)	2 (–1.33)	0 (–3.35)	5 (+2.59)	3 (–0.42)	4 (0.97)
	Conflict resolution	2 (–1.38)	2 (–1.51)	1 (–2.82)	2 (–2.05)	3 (–0.65)	4 (0.21)
	Cohesion	2 (–1.31)	2 (–1.12)	1 (–2.35)	3 (–0.73)	3 (–0.68)	3 (–0.50)
	Conclusion	4 (+1.46)	3 (–0.03)	2 (–1.04)	2 (–1.33)	4 (+0.97)	5 (+1.54)
	Total NSS	17 (0.97)	17 (–0.93)	8 (–2.83)	21 (–0.61)	22 (–0.25)	26 (+0.27)

Notes: NCU = number of C-units; MLCU = mean length of C-unit in words; NDW = number of different words; GA-SAE = grammatical accuracy for Standard Australian English; GA-AE = grammatical accuracy for Aboriginal English; Standard Deviations, compared to the SALT Database (+/- 6 months), are shown in parentheses.

cited in Miller & Iglesias, 2008) then marked and coded according to SALT conventions.

Analysis

Several measures of microstructure frequently explored in the literature, and shown to be sensitive to age and/or impairment, were selected for analysis: number of C-units (NCU), mean length of C-unit in words (MLCU), number of different words (NDW), and grammatical accuracy (GA). MLCU in words, rather than morphemes, was selected to minimise the effects of reduced noun and verb inflections, which are often a feature of AE. Percentage of grammatical accuracy was calculated by dividing the number of C-units that were grammatically correct by the total number of C-units (Fey et al., 2004; Westerveld & Gillon, 2010). The first GA measure conformed to SAE grammatical expectations (GA-SAE). A second measure, GA-AE, was created to examine the effect of AE on grammatical accuracy. Examples of AE from the participants' narratives are provided in the appendix. All utterances classified as "grammatically inaccurate" in the first round of analysis were examined for the presence of AE forms. It was then possible to calculate grammatical accuracy percentages that accepted use of AE as grammatically accurate (GA-AE).

In order to investigate the appropriateness of available normative data, the microstructure measures were compared to the SALT Narrative Story Retell Reference Database which contains samples from 346 typically developing English-fluent children aged 4;04 to10;00 years, from Wisconsin and California (Miller & Iglesias, 2008). This database was selected as it includes data for the FWAY wordless picture book, and no normative data were available for any Australian children. Grammatical accuracy data for the FWAY narrative were not available in the SALT database so normative comparisons for this measure could not be made.

The Narrative Scoring Scheme (NSS) (Heilmann et al., 2010; Miller & Iglesias, 2008) was used to analyse oral narrative structure since reference data for the FWAY narrative using the NSS are available within the SALT data base. The NSS is scored using a 0–5 point scale for each of seven categories (introduction, character development, mental states, referencing, conflict/resolution, cohesion and conclusion). A score of 0 reflects errors such as not completing/refusing the task. A score of 1 reflects minimal presence of the target features or immature performance, a score of 3 reflects emerging skills and a score of 5 reflects proficient performance. Scores between (i.e., 2 and 4) are undefined and subject to the examiner's judgment that performance is between the major anchors.

Reliability

Interrater reliability for key coding and analysis was explored. The first author coded and analysed all written transcripts independently of the second author. Percentage agreement was 96% for bound morpheme agreement and 89% for grammatical accuracy. Reliability for the NSS scores was calculated using Krippendorff's alpha (Freelon, 2011) for ordinal values. This method accounted for the degree of difference between scorers and the possibility of chance agreement. According to Krippendoff, alpha values above .80 indicate good agreement, values between .67 and .80 are sufficient for tentative conclusions, and values below .67 suggest low reliability. Results for the total score and each component, in order of strength were: Total Score α = .806; Conclusion α = .788; Character Development α = .774; Mental states α = .696; Introduction α = .63; Conflict resolution α = .626; Referencing α = .483; Cohesion α = .403. The lower reliability coefficients for Referencing and Cohesion suggest that the criteria for these measures were more open to interpretation and that scorers need to be clearer about how they apply to the specific narrative under investigation. All differences were resolved by consensus and re-coded as agreed.

Results

Results for all measures and comparisons to the reference data norms for each participant are shown in table 1. Comparisons to the reference data norms are presented with respect to standard deviations for the reference data.

Microstructure analysis

For the number of C-units, three participants performed within normal limits (WNL), two performed at least one standard deviation (SD) below the SALT database mean, and the eldest participant performed more than two SDs above the mean. For the NDW measure, two participants performed WNL, while two performed at least one SD below the mean and two performed at least two SD below the mean, compared to the reference data base. For MLCU, one participant performed WNL, while four participants performed at least one SD below the mean and one performed at least two SDs below the mean.

The adjusted measure for grammatical accuracy, GA-AE, was higher than GA-SAE for five of the six participants, with only one participant's accuracy remaining the same. The highest increase in GA was seen in P#1, an increase of 56% and the smallest increase of 8% was seen in P#2, from a reported SAE background. The most frequently occurring feature of AE was "reduced past tense markings on verbs" (22 occurrences across participants). Other features present were reduced use of prepositions, verb auxiliaries, copulas, and possessives, and subordinate conjunctions. Less common features of AE were future tense marked with the use of "gonna" and variable past tense marking. Examples are provided in the appendix.

Macrostructure analysis

Compared to the reference data base, all except one participant performed WNL for the total NSS score. P#3 was an anomaly, scoring much lower than other participants, at least two SDs below the mean. With the exception of P#3, the total NSS scores increased with age. P#3 attained below average scores for each NSS component. Results for the five other participants were more varied and are reported here with key patterns highlighted. For the NSS Introduction component all other participants attained scores WNLs. The two eldest participants gained above average scores for Character development, while all other participant scores were WNL. For Mental states, two participants scored WNLs, one scored at least one SD below the mean and the two eldest participants scored at least two SD below the mean. For Referencing and Cohesion, the two youngest participants scored at least one SD below the mean. P#4 scored at least two SDs above the mean for Referencing while the remaining older participants scored WNLs for Referencing and Cohesion. For Conflict resolution, only the two oldest participants scored WNLs while the two youngest scored at least one SD below the mean and one other participant scored at least two SDs below the mean. For the Conclusion component one participant scored at least one SD below the mean, the youngest and eldest participants scored at least one SD above the mean and the remaining two participants scored WNL.

Discussion

Within this small study, Aboriginal children identified by their teachers as progressing well at school did not consistently perform within normal limits on measures of oral narrative microstructure when compared to reference data from the US (Miller & Iglesias, 2008). In contrast, most children performed within normal limits for the total NSS score, a measure of narrative macrostructure, with variable results for the NSS components.

Microstructure measures

Results suggest a different language profile to the SALT database for Aboriginal children who may be acquiring SAE as a second dialect. Three participants produced narratives of comparable length to the database while one produced a longer narrative and two produced much shorter narratives. On the other hand, lexical diversity was more limited (lower measures for NDW), and syntactic complexity was poorer (lower MLCU). Grammatical accuracy also differed from SAE standards. These findings are congruent with Marinis and Chondrogianni (2010) who showed that children learning a second language required more years of exposure to reach monolingual norms. Reasons for the different language profile may be hypothesised from what is known about Aboriginal culture and language use. Some participants may not have felt fully confident due to unfamiliarity with the task or a person from outside of their cultural community, or unease about telling the examiner something she already knew (Moses & Wigglesworth, 2008; Turnbull, 2002). While "talking less" is often valued more within Aboriginal culture (Malcolm et al., 1999; Moses & Wigglesworth, 2008), shorter stories were not evident for the participants in this study. However, this cultural value may have contributed to lower measures for MLCU. The lower MLCU scores may also have resulted from the reduced use of prepositions, verb auxiliaries, and copulas, which is typical of many forms of AE (e.g., "what you doing?"). The low socioeconomic background of the participants may also have contributed to lower performance on the vocabulary-related microstructure measure, NDW (Hoff & Tian, 2005).

Results show that it is important to evaluate GA on the basis of AE features where Aboriginal children have not yet fully acquired SAE. Use of the GA-SAE measure may underestimate the child's linguistic proficiency. A comparison of two GA measures may provide a means of measuring progress towards competency in both the child's home dialect and competency in use of SAE, if suitable norms are developed. This is line with Munoz et al. (2003) who recommended excluding utterances that have features of the participant's language from being classed as grammatically inaccurate, as GA may be an indicator of normal or impaired language development only in the context of the syntactic structures that are typical of the community. Varieties of AE have different grammatical rules from that of SAE and hence require developmental normative data that is individualised to their capacities, to more reliably examine LD and LI.

Macrostructure Measures

Unlike the microstructure measures, the NSS macrostructure measures were less influenced by features of AE. Most participants gained NSS scores within normal limits compared to the database. Furthermore, variations among the NSS components suggest areas of strength and weakness across different aspects of narrative structure. One exception was P#3, who performed below two SDs on many NSS measures, using the phrase "once upon a time"

at the beginning of every utterance. Possible reasons why this participant may have underperformed include tiredness, unfamiliarity with the task or shyness towards the examiner. The "shame" response that may arise in testing situations with Aboriginal children has been well reported and may also have been a factor here (Gould, 2001; Malcolm et al., 1999). Feelings of "shame" may lead to a reluctance to speak or desire to leave a situation. Shame may arise from situations where a person does not know what is expected of them or feels singled out from the group.

Interesting trends are apparent when the results from P#3 are excluded. Most other participants did well with the Introduction, Character development and Conclusion components. This is consistent with the observation that people and place are of key importance in Aboriginal storytelling (Malcolm et al., 1999). It is unclear why most participants had difficulty describing the Mental states of the story characters (feelings and thoughts). Referencing, Cohesion, and Conflict resolution were challenging components for the younger children but older children had good mastery of these. This suggests that experience with narratives at school contributed to the ability of Aboriginal children to produce more mature oral narratives as measured by the NSS.

Conclusion

This study was a preliminary exploration of oral narrative in Aboriginal children. As such, the study is limited in several ways including its small sample size and scope, and limited information about the home languages and hearing status of the children. However, the findings lead to some important clinical implications. Speech pathologists need to consider the language background of the Aboriginal children they assess (including dialects, creoles, and traditional languages) as well as information about the child's level of exposure to SAE. Until reliable normative data are available, our ability to use grammatical or oral narrative microstructure measures to define LI in Aboriginal children is limited. There may also be greater benefit from using measures that are more independent of grammar and linguistic variation such as oral narrative structure.

The development of Australian English normative data is needed as a focus of ongoing studies. Information is needed on the language development of Aboriginal, Torres Strait Islander, and non-Indigenous children, across the range of remote, rural and urban contexts, language groups and socioeconomic backgrounds. In addition, exploration of appropriate assessment and language sampling practices for Indigenous Australian children is required to ensure optimum accommodation of cultural differences in communication style (Gould, 2008). These differences may include the need for relationship and purpose within the interaction, avoidance of display questions, acceptance of silence or a non-response, and strategies to minimise "shame". Until we have better normative data, clinicians are advised to collect and analyse language samples over time in order to monitor progress in response to intervention.

Acknowledgments

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Wendy Pearce is a senior lecturer at James Cook University (Townsville, Queensland), teaching in the areas of paediatric speech and language impairments and with a special research interest in the language skills of Indigenous Australian children. She gained a PhD from Flinders University in 2007 and has over 25 years' experience working with children in early childhood settings and schools in South Australia. **Emma Stockings** graduated with Honours from James Cook University at the end of 2010 and now works as a speech pathologist for Education Queensland in Bundaberg.

Correspondence to:
Wendy Pearce, PhD
Senior Lecturer in Speech Pathology,
James Cook University, Townsville, Queensland
phone: 07 4781 6501
email: wendy.pearce@jcu.edu.au

Appendix: Features of Aboriginal English present in the children's narratives

Feature of "Aboriginal English"	Example	SAE form
Preposition is omitted or varied	"it jumped out the jar" "bit him in the nose"	"it jumped out of the jar" "it bit him on the nose"
Pronouns vary in form (reduced marking for gender, possession or case)	"Sonny jumped outa the jar and went where he mother"	"Sonny jumped out of the jar and went where his mother was"
Plurals are omitted	"and they saw the frog two mummy"	"and they saw the frog's two mummies"
Possessive form is omitted or varied	"and they saw the frog two mummy"	"and they saw the frog's two mummies"
Copula is omitted	"there the frog" "Sonny jumped outa the jar and went where he mother"	"there is the frog" "Sonny jumped out of the jar and went where his mother was"
Auxiliaries and modals are omitted	"what you doing?" "we gonna try and find him"	"what are you doing?" "we are gonna try and find him"
Past tense forms are omitted or varied	"the bees come out" "the boy waked up" "then he looked in the hole and say 'frog'"	"the bees came out" "the boy woke up" "then he looked in the hole and said 'frog'"
Future tense marked with "gonna"	"we gonna try and find him"	"we are going to try to find him"
Subject–verb concord is absent	"they was hearing this thing behind the big big log"	"they were hearing this thing behind the big log"
Infinitive "to" missing	"they try look outside"	"they tried to look outside"
Repetition for emphasis	"they was hearing this thing behind the big big log"	"they were hearing this thing behind the big log"

Working with Mandarin-speaking clients

Linguistic and cultural considerations

Taiying Lee and Elaine Ballard

THIS ARTICLE HAS BEEN PEER-REVIEWED

Taiying Lee (top) and Elaine Ballard

Immigration patterns in both New Zealand and Australia have changed significantly in the last 20 years with an increase of clients from a Mandarin-speaking background in clinical practice. Working with this population as a clinician can be both challenging and frustrating. In this paper we outline some issues speech pathologists should be aware of in order to make their practice with clients from this background more effective. Our discussion will cover both linguistic and cultural considerations. We conclude with some thoughts on how best to work with this population.

Immigration patterns in both New Zealand and Australia have changed significantly in the last 20 years (Australian Bureau of Statistics 2006; Statistics New Zealand 2006). As a result, speech pathologists in these countries are now working with an increasingly multilingual and multicultural population. Of particular note is the increase of clients from a Mandarin-speaking background in clinical practice. The ethnic Chinese are one of the largest and fastest growing immigrant groups in New Zealand with a 40% increase from the 2001 to the 2006 Census. This is also reflected in the Australian statistics where there has been a 57% increase from 2001 to 2005. From the census as well as our experience of working with families, both clinically and through research, we are aware that most of these families speak Mandarin as their first language, and have a strong commitment to encouraging the maintenance of that language by their children. The children are primarily exposed to Mandarin in the home environment, and have their first exposure to English in early childhood centres and can thus be considered as growing up bilingual.

Clinicians face linguistic and cultural challenges when working with this bilingual population. In this paper, we outline some of the issues speech pathologists should be aware of in order to make their practice with clients from a Chinese-English background more effective. Our discussion will be divided into two sections: 1) linguistic issues, and 2) cultural considerations. As our experience of this population is primarily in the area of phonological acquisition, the linguistic section will focus on phonology. The discussion of cultural considerations will, however, have

a wider applicability and is not restricted to any particular type of assessment or intervention. These considerations are furthermore not restricted to Mandarin-speaking immigrants, as they are relevant to any immigrants from a Chinese background. We conclude the paper with some thoughts on how best to work with this population.

Linguistic considerations

When diagnosing bilingual children for a possible speech sound disorder or delay it is a given that they be assessed in both their languages (Genesee, Paradis, & Crago, 2004; Kohnert, 2007; Zhu & Dodd, 2006). In working with the Mandarin-speaking population, clinicians need some basic background knowledge of Mandarin, in particular its phonology and its differences to English phonology so that they can make informed clinical decisions around assessment, analysis, and therapy.

Mandarin

Mandarin is the most widely spoken language in the world with 1,023 million speakers globally (Lewis, 2009) and is the native language of approximately 70% of the population in mainland China. In China, Mandarin is commonly known as Putonghua. As the official language of the country it has widespread uses in the mass media and is the language of instruction in schools. Mandarin is also the official language of Taiwan where it is known as Guoyu, and in Hong Kong it shares official language status with English and Cantonese, a southern variety of Chinese. Mandarin is also widely spoken in Brunei, Indonesia, Malaysia, Mongolia, Philippines, Singapore, and Thailand as well as in overseas Chinese communities in the US, UK, Canada, Australia, and New Zealand.

In assessing children's ability in Mandarin we have used the Putonghua speech sound assessment developed by Zhu (2002). This assessment is not the only one available (see Putonghua Segmental Phonology Test [So & Zhou, 2000]) but it is readily accessible. The Zhu assessment (2002) is a picture-naming task that targets all of the consonants, vowels, and tones of modern standard Chinese as spoken in China. Below we give a description of Mandarin phonology based on the version used in the assessment.

Consonants

Mandarin has 22 consonant phonemes (see Table 1). Unlike English, Mandarin does not have a voicing contrast with its obstruents. This is generally not critical for the stops and

Table 1. Mandarin consonants	Bilabial	Labiodental	Alveolar	Retroflex	Alveolopalatal	Velar
Stop	p pʰ		t tʰ			k kʰ
Nasal	m		n			ŋ
Affricate			ts tsʰ	tʂ tʂʰ	tɕ tɕʰ	
Fricative		f	s	ʂ	ɕ	x
Approximant			ɹ			
Lateral approximant			l			

affricates, as there is a contrast based on aspiration/ non-aspiration which is perceptually similar to that found with the English stops and affricates. However, this is more problematic with the fricatives as the lack of contrasting pairs of fricatives in Mandarin makes it difficult for children acquiring English to perceive the difference between /f/ and /v/, /θ/, and /ð/, /ʃ/ and /ʒ/. It is to be further noted that Mandarin /ɹ/ bears little resemblance phonetically to its English counterpart. References such as Norman (1988) describe this phone as a voiced retroflex continuant which suggests that its pronunciation varies from a fricative through to an approximant.

Vowels

According to Zhu (2002) and Zhu and Dodd (2006), the vowels can be classified into three groups with nine monophthongs, nine diphthongs, and four triphthongs. The nine monophthongs are /i, y, u, ɤ, o, a, ə, ɛ, ɚ/ (see Figure 1). The diphthongs can be divided further into offglides and onglides; /ae/, /ei/, /ɑo/ and /ou/ are offglides with the first vowel sound being longer and having more intensity; /ia/, /iɛ/, /ua/, /uo/, and /yɛ/ are onglides with the second element being sonorous. The four triphthongs are /iao/, /iou/, /uae/ and /uei/, with the middle element having the most intensity and of the longest duration. There is however a lack of consensus within the literature as to the actual number of monophthongs as some researchers classify the mid vowels [ɛ ɤ o] as allophones of the phoneme /ə/, since these vowels occur in predictable phonetic contexts (Duanmu, 2008; Norman, 1988; Wan and Jaeger, 2003). Although there are more diphthongs and triphthongs in Mandarin than in English, there are fewer monophthongs. As a consequence Mandarin speakers who have only recently learned English often have trouble distinguishing between the greater number of phonemic contrasts within the English monophthongs. The tense/lax high vowels /i ɪ u ʊ/ and vowels /e æ ɒ/ provide the most difficulty in their production.
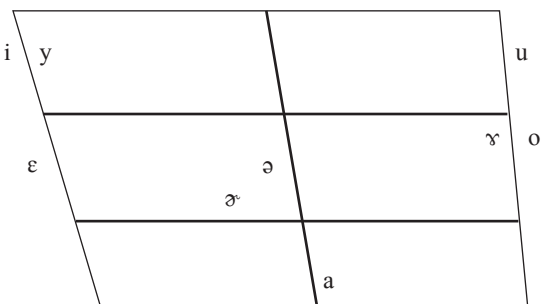

Figure 1: Mandarin vowels

Tone

While English does utilise pitch changes over the course of an utterance for pragmatic and grammatical reasons in intonation, it does not use them phonemically. Mandarin does, as pitch changes occur at a lexical level and are associated with change in meaning. There are four main phonemic tones in Mandarin, i.e., high level, high rising, falling-rising and high falling, primarily characterised by voice pitch but also by length and intensity (Duanmu, 2008; Norman, 1988). They are referred to as tones 1, 2, 3 and 4 respectively (see Table 2).

Table 2: A description of Mandarin tones using syllable /mA/		
Tone	Tonal indicator	Example
High level	1	媽 Mother
Rising	2	麻 Hemp
Falling-rising	3	馬 Horse
High falling	4	罵 Scold

Syllable structure

There are only four possible syllable types in Mandarin: V (一 /i:/ "one"), CV (踢 /ti/ "kick"), VC (碗 /uan / "bowl") and CVC (糖 / tʰa ŋ / "sugar"). There are also restrictions on consonants occurring post-vocalically as only the nasals /n/ and /ŋ/ can occur in this position. The range of syllable types is therefore more restricted than in English, where up to three consonants are permitted as a cluster in the onset position of the syllable (e.g., string) and up to four in coda position (e.g., exempts).

Variation in Mandarin

While some of the children we have encountered under clinical or research conditions have been first language speakers of the standard Mandarin of the assessment (Putonghua), we have found that the majority were not. From our experience most Mandarin speakers in New Zealand communities speak a variant of Putonghua or a different Mandarin standard. Many speakers from China speak Putonghua and one or more other Chinese languages. These Chinese languages include Wu, Yue, Xiang, Kejia and Min (Yuan, 1960, cited in Norman, 1988). These bear little resemblance phonologically to Putonghua but may impact on a speaker's production when speaking Putonghua. Speakers we have encountered from other countries such as Taiwan and Singapore use a Mandarin standard distinct from Putonghua. These standard languages are based on the varieties of Chinese spoken in those communities. A crucial difference between Putonghua and the other varieties of Mandarin (within and outside of China) is found in the retroflex consonants / tʂ tʂʰ ʂ / and the alveolar approximant /ɹ/ (Duanmu, 2008; Norman, 1988). None of these varieties have retroflexes, so that target words with retroflexes are consistently rendered with the alveolars [ts tsʰ s]. Additionally, some of these varieties (e.g., Yue-based Mandarin, Taiwanese Mandarin) do not have a central approximant and tend to merge target words with this consonant with the lateral /l/.

English

From bilingual research into phonological acquisition (Holm & Dodd, 1999; Lin & Johnson, 2010) and our own initial findings (Lee & Ballard, 2010), we know that Chinese-dominant bilingual children growing up in English-speaking countries will lag behind their monolingual peers in terms of their phonological skills in English. We have used the phonology subtest from the Diagnostic Evaluation of Articulation and Phonology DEAP (Dodd, Zhu, Crosbie, Holm, & Ozanne, 2002) with this population and have found that their phonological accuracy is on average lower than that of the monolinguals. In our research, initial findings from 78 children indicate that the average percentage phoneme correct (PPC) score for 5-year-olds in this population is 85%. This mean score is considerably lower than the score of 97.68% found for age-equivalent monolinguals (Dodd et al. 2002). Furthermore, they are more likely to produce speech errors which would be termed atypical for monolinguals. Examples of such errors that we found fairly common among our participants are the devoicing of voiced obstruents in word final position and the substitution of /s/ for /θ/. We note here that while English monolingual children are more likely to front /θ/ (Dodd et al., 2002), our Mandarin dominant speakers are more likely to back this fricative.

Cultural considerations

Concepts of self, of family, and more pertinently of social interactions, communication styles, and language use are embedded in cultural values and practices (Gudykunst, Matsumoto, Ting-Toomey, Nishida, Kim, & Heyman, 1996). In outlining the characteristics of the Mandarin-speaking population culture and discussing these issues we have adopted the framework outlined in Hwa-Froehlich and Vigil (2004). In the following we discuss three aspects of the framework particularly pertinent to the Mandarin-speaking population and the implications of these characteristics on views on disability. It is important to note that these are general outlines and generalisations across a complex community and will therefore not apply to every family or individual. Within the Mandarin-speaking population, there are also cultural practices and values specific to the families' country of origin, and their rate of acculturation to a new community or country.

Responsibility relationships

According to Hwa-Froehlich and Vigil (2004), responsibility relationships refer to a culture's perspective or preference on responsibility roles and how they are managed. Responsibility relationships vary according to the degree of independence/interdependence among its members. Broadly speaking, independence is equated to individualism while interdependence equates to collectivism. While many western cultures may favour individualism, and children are socialised to function independently, many Chinese-speaking populations are collectivist in outlook. In practice, this means that the individual is interdependent and has strong bonds with the group(s) that they identify with. Thus they tend to consider the group well-being over individual wishes when making decisions. Family relations are integral to the collective viewpoint and the core family unit is much larger, incorporating members of the extended family. We have found the above to be true for many of the families we have encountered. For these families, the grandparents often live together with or in close proximity to the rest of the family and have a significant role in the care and upbringing of children.

Interpersonal relationships

Interpersonal relationships, according to Hwa-Froehlich and Vigil (2004), refer more specifically to the social status of individual members and are based on variables such as age, wealth and education. In practice, cultures vary according to a continuum that spans from informality/ equality at one end to formality/inequality at the other. Generally, Chinese-speaking families are characteristically closer to the formal/unequal end, while many western cultures veer towards the other end of the continuum, where equality and informality are emphasised. In relationships where informality and equality are valued, interactions are more direct and more verbal. In relationships where formality and inequality are predominant, respect is shown to elders and non-verbal behaviour and indirect language is used to avoid conflict. Family structure is hierarchical with the older generation, and male family members having more say in family decision-making. In our clinical and research experience, we have found Hwa-Froehlich and Vigil's observations regarding Chinese families to be true for many Mandarin-speaking families residing in New Zealand.

Risk management

Risk management in the framework outlined by Hwa-Froehlich and Vigil (2004) refers to the way different cultures manage uncertainty or ambiguity. Communication varies in the level of implicitness/explicitness and cultures differ in their expectation for rules, guidance and structure. Cultural differences manifest themselves along a continuum that spans the dimensions of weak uncertainty/avoidance and strong uncertainty/avoidance. In many western cultures that favour weak uncertainty, children are encouraged to question, take risks, explore and be creative. In Chinese culture strong uncertainty is generally favoured. Parents are more directive and children are socialised to obey without question and imitate adult models. This type of parenting style allows for few play-type interactions. Children are expected to obey their parents and avoid making mistakes. In our experience, this is particularly evident in assessment sessions with Mandarin families, where the child is often directed to respond to assessment tasks or look for non-verbal cues to indicate their involvement.

Views on disability

The three areas discussed above have considerable impact on the view of disability espoused by more traditional Chinese families and recent immigrants. The degree of interdependence among family members in terms of responsibility relationships is reflected in the way families rally around to support the member with the disability and in the degree of dedication they demonstrate in caring for and meeting needs of that person. We have found that more traditional families residing in New Zealand seek help and support within the family unit. Seeking support from social welfare or government services, including special education services, can be intimidating.

We have also found that these families can be very inclusive towards and accepting of a family member with disability. However, the importance of social status in interpersonal relationships and the highly hierarchical

nature of families lead to a negative view of disability. Consequently, some families will conceal or simply not discuss family members with a disability.

From the above it would seem that Chinese families generally prefer a directive style and favour certainty and structure. This gives them a view of disability as being something that can be cured given clear guidelines as to how to go about fixing the problem. The consequences are that the family can be very diligent and persistent in doing home activities with the "sick" family member but only if they perceive it worthwhile. How clearly activities are presented will influence their perception of the value of therapeutic activities.

Implications for the clinician

The linguistic and cultural characteristics discussed above can come into conflict with aspects of clinical training and best practice. They can even become barriers to service delivery and methods of assessment and therapeutic interventions. In Boxes 1 to 3, we provide practical suggestions and considerations for working with the Chinese community and families as they relate to 1) general interactions with the family and child, 2), assessment practices, and 3) intervention. We are of course aware and note again that these are generalisations, and will therefore not apply to every family or individual. Families acculturate into a new community at different rates. Therefore, it is always beneficial as a first step for clinicians to find out about a family's unique cultural and linguistic background. It is also important for clinicians to consider their own culture and cultural practices and how these may impact on their interactions with the child and family.

Box 1: Practical considerations in engaging with the family

Interactions/engagement with family and child

- It is polite to address parents with the title of Mr or Mrs unless specifically told otherwise.

- Names and their pronunciation are important.
  If you are unsure of the pronunciation, ask the family.

- Families will arrive at appointments or scheduled meetings on time or slightly early. This indicates their respect and the importance they place on the clinician and service.
  However, when visiting families at home, it is appropriate to arrive five to ten minutes later than the given time. This gives the family additional time to prepare for your visit.

- Personal space is more defined and there is less emphasis on physical displays of affection or physical interaction. On a home visit, follow the family's guide on where to sit and let them find a space and distance that they feel comfortable with.

- Hospitality is important. It is polite to accept and try a drink and food when offered.

- People from different cultures interpret actions and non verbal signals differently.
  When building rapport with a client and family, it is important to keep this in mind and reach a clear understanding through discussion rather than assumptions through nonverbal signals and actions. For example, smiling in Western cultures generally indicates agreement but with Mandarin-speaking populations it may indicate politeness, embarrassment or apology. Similarly nodding in Western cultures indicates agreement but for many Chinese families this only indicates acknowledgement.

Box 2: Practical considerations in the assessment process

Assessment

- It is imperative to find out about the child's language history. This includes all the languages that the child has been exposed to and the length of time that they have been exposed to these languages.

- Note the variety of Mandarin that your interpreter speaks. It may be pertinent to ask them about the Mandarin the child and family speaks and any general differences between their Mandarin varieties.

- Observations of the child in different settings are essential. This is particularly pertinent as there are clear scripts and expectations for different communication contexts and communicative partners.

- Be careful of pragmatic differences as these can be misinterpreted. Clinicians must view observed behaviours in the light of cultural expectations and appropriate politeness rules. For example, in the classroom children are expected to listen quietly to the teacher rather than ask questions or volunteer information.

- It may be difficult to engage with the child in situations where the child is expected to converse with an unfamiliar adult. To increase child engagement and participation, discuss the process with the parents. This gives them the chance to explain it to their child. Clearly explain what you would like the child to do, how you are going to assess, its purpose and how you want the parents to act.

- Be aware that children may be reluctant to respond or decline to participate when they are not sure of the 'correct' answer or they may provide several responses to ensure that they have responded 'correctly'.

- Parental teaching is generally directive so parents may unintentionally provide hints and answers to tasks that their child finds difficult. It is important to make sure that you go through what you would like the parents to do/not do during the assessment.

- Given the variation that exist across the Mandarin standard spoken, allow for alternate scoring within a Mandarin speech assessment. Always compare the child's speech productions to the Mandarin standard of their variety of Mandarin.

- Be aware that Mandarin dominant children's score on any English speech assessment will lag behind those of their English monolingual peers.

- Mandarin dominant children are likely to produce errors considered atypical for monolingual English speakers in English speech assessments.

Conclusion

With this paper we hope that clinicians will become more aware of the impact that linguistic and cultural difference can have on clinical practice with their Mandarin-speaking clients. The practical considerations provided are intended to serve as a quick and easy reference so that clinicians may be able to engage more effectively and efficiently with children and families from this background.

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Taiying Lee is a speech-language therapist working in Special Education, Ministry of Education with specific research interests in bilingual speech and language development and disorders in children, particularly in Chinese dialects. **Dr Elaine Ballard** is a lecturer in the Speech Science division of the Department of Psychology at the University of Auckland whose research interests include speech and language development in bilingual populations.

Correspondence to:
Taiying Lee
Speech Language Therapist
Ministry of Education, Special Education
PO Box 217 046
Botany Junction
Manukau 2164, New Zealand
phone: +64 (09) 2653019
Email: taiying.lee@minedu.govt.nz

Working with bilingual children who stutter and their families

Etain Vong, Linda Wilson, and Michelle Lincoln

Clinicians treating children who stutter and who speak more than one language often face unfamiliar challenges. Generally speaking, clinicians do not speak all the languages of a client, yet stuttering often occurs in all of the languages spoken by the child. Using three clinical case examples, this article describes common issues that may arise when working with bilingual children who stutter and their families. Some practical suggestions for overcoming these issues are provided.

Treating stuttering, a speech disorder which disrupts the flow of speech, often presents difficulties for clinicians working with bilingual[1] children who stutter. The main speech issues to consider when treating a bilingual preschool child who stutters are: language/s for assessment and treatment; generalisation of treatment to untreated language/s; collection of speech measurements; and measurement of stuttering in language/s not spoken by the clinician. The purpose of this article is to discuss these issues within the scope of a typical clinical practice. Using three Lidcombe Program case studies of children in Malaysia as examples, this article describes these issues and makes some practical suggestions that can be applied to clinical practice when working with bilingual children who stutter and their families. Because the Lidcombe Program was developed in a western culture and the case studies are of Malaysian children, cultural differences which could influence treatment were considered. However, it is not within the scope of the article to discuss these differences (for details, please see Vong, 2011; Vong, Wilson, & Lincoln, 2011). Below is a description of each of the cases under discussion.

Case 1

Wen Ling[2] was a girl (aged 3 years 9 months) who had stuttered for more than a year. Wen Ling understood and spoke two languages. Mandarin was her first language, spoken at home with her parents and her elder sibling. Wen Ling started preschool at the age of 3 years 2 months, where she started to learn English. English was the medium of teaching and learning in the preschool.

Speech samples collected beyond the clinic in both Mandarin and English indicated that stuttering was more frequent in English than Mandarin, although Wen Ling's English vocabulary was limited compared to her Mandarin. Wen Ling's stuttering behaviours were mainly syllable repetitions and blocks in both languages. She also manifested a high frequency of audible inhalations, which were judged by three stuttering specialists to be stuttering behaviours due to the high frequency of occurrence and the disruption they caused to her flow of speech. Overall, the treating clinician[3] judged Wen Ling's stuttering as moderate to severe.

Case 2

Rachel was a girl (aged 3 years 11 months) who, according to parent report, had stuttered for at least 5 months. Rachel understood and spoke three languages. Mandarin was her first language, which she used with her parents, siblings, and her aunt, with whom she was very close. English was her second language which she used with her aunt and also at preschool. Malay was her third language which she used with the maid only. According to her aunt, Rachel was most proficient in Mandarin, followed by English and Malay.

The speech samples collected beyond the clinic in all three languages indicated that stuttering was most frequent in English and least in Malay. Rachel's stuttering behaviours were mainly syllable repetitions in all three languages. Overall, the clinician judged Rachel's stuttering as mild to moderate. The aunt and the clinician decided that the aunt would be the agent of therapy because she was able to spend the most time with Rachel at home and bring her for weekly clinical visits.

Case 3

Jun Hock was a boy (aged 4 years 9 months) who had stuttered for almost 2 years. Jun Hock understood and spoke two languages. Mandarin was his first language, spoken at home with his parents and elder sibling. He also started to learn English with his parents before starting preschool at the age of 4 years where English was the medium of teaching and learning. His parents reported that neither language was more frequently used than the other language in the child's everyday speaking situations.

Speech samples collected beyond the clinic in Mandarin and English indicated that stuttering frequency was similar in the two languages. Jun Hock's stuttering behaviours in both languages were mainly syllable repetitions and prolongations. Overall, the clinician judged Jun Hock's stuttering as moderate to severe.
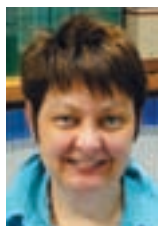
Etain Vong (top), Linda Wilson (centre), and Michelle Lincoln

Issues to consider in clinical practice

Languages for assessment and treatment

When assessing a bilingual child who stutters, speech samples in each language spoken should be obtained. When possible, it might be considered ideal to treat stuttering in both languages in bilingual children. This is assuming that the child stutters in both of the languages s/he speaks. It is rare to find a case where a bilingual person stutters only in one language (see Nwokah, 1988; Van Borsel, Maes, & Foulon, 2001), although severity of stuttering might vary between languages. It could be more efficient to treat one language and monitor the other language/s for generalisation of stuttering reductions, as the little evidence available (Roberts & Shenker, 2007; Shenker, 2004) suggests that generalisation to non-treated languages does occur for some preschoolers. Furthermore, it is often not possible to treat all languages because the relevant languages are not shared by the clinician. This is frequently the case in Australia, where many clinicians are monolingual.

Where more than one language is shared by the child, parent, and clinician, some clinicians and parents will decide to provide treatment in the child's predominant language (i.e., the language that is more frequently and/or commonly used by the child). This is usually but not always the child's first language. Making this choice is common when this is the language most shared by the child and the parent, and the parent is the primary agent of therapy. For example, Shenker, Conte, Gingras, Courcey, and Polomeno (1998) treated first the predominant language of a bilingual preschool child who stutters, before treating the other language. Other clinicians and parents may opt to use the language which has a higher frequency of stuttering because of its greater impact on communication.

In Wen Ling's case, stuttering therapy was carried out in Mandarin because it was the primary language spoken at home between Wen Ling and her parents, and because it was a language also spoken by the clinician. Although the mother and the clinician could also speak English, it was not the chosen language for therapy because it was not the usual language for a conversation between Wen Ling and her mother.

Rachel's case was more complicated. Rachel's aunt was the primary agent of therapy and although Rachel could speak both Mandarin and English with her aunt, her aunt preferred to use English during therapy because it was the language more frequently used in their interactions. However, even though therapy in the clinic was conducted in English, speech samples obtained during home therapy often had a mixture of English and Mandarin. It was rare to obtain a sample purely in one language. Furthermore, Rachel's language choice depended on who she was speaking to. With her parents and siblings, she spoke Mandarin. With her aunt, English was reported to be more frequently used. However from the speech samples obtained, one could say that Rachel was able to communicate with her aunt in both English and Mandarin. Sometimes both languages were used with almost equal frequency to a point that one wasn't sure which was predominant. With her maid, Rachel spoke only Malay. When asked to speak Malay to another person who was able to speak both Malay and English, Rachel refused to reply in Malay. She insisted that Malay was for speaking with the maid only.

In Jun Hock's case, Jun Hock's mother decided that it was better to provide treatment in English because it

was common to home and school, even though Mandarin was Jun Hock's first language. Similarly to Rachel's case, Jun Hock's parents communicated with him in both Mandarin and English. As a result, although therapy was mainly in English, code-switching to Mandarin sometimes occurred during therapy at home and in the clinic. This did not appear to adversely affect his progress. However, unlike Rachel's case, as Jun Hock expanded his English vocabulary, he chose to speak mainly in English and refused to speak in Mandarin. At the end of therapy, his parents reported that he refused to speak in Mandarin even when spoken to in that language. English was more frequently used by Jun Hock's as his English vocabulary continued to expand. In all three cases, the language used for stuttering therapy was the one with which the caregiver and the child were most comfortable and which the clinician was also able to speak.

If a clinician is unable to speak any of the bilingual child's spoken languages, a referral to another clinician who speaks at least one of the child's languages could be made. If this is not possible, an alternative is to obtain the services of an interpreter. However, using the services of an interpreter raises issues of its own. For example, there exists a possibility that unspecialised interpreters may not be able to provide dependable information on stuttered speech (see Finn & Cordes, 1997). In addition, according to Hwa-Froelich and Westby (2003), accuracy of translation is not sufficient and interpreters should be trained to translate and interact in culturally appropriate ways during interpreting interactions. Unfortunately, training programs for interpreters often lack instruction in cultural awareness of multiple cultures (for more details, see Hwa-Froelich & Westby, 2003). A more practical alternative is to train the caregiver, even if the language used during the training is not spoken by the child. Training could be done through demonstrations via video. A trained caregiver could then carry out the treatment in the clinic and also at home in the child's spoken languages. We suggest that if a clinician is unable to speak any of the *parent's* spoken languages, the possible choices for enabling treatment are to a) liaise with the parent to identify another person who shares a language with the clinician and who could become the primary agent of therapy; b) use the services of an interpreter; or c) refer the child and parent to a clinician who speaks at least one of the parent's languages.

Generalisation of treatment to the untreated language(s)

Although it is suggested that it is ideal to treat both languages of a bilingual child who stutters (Roberts & Shenker, 2007), it could be difficult to find a clinician who speaks the same set of languages spoken by the child. This raises the concern about what happens to stuttering in the untreated language/s. A decision to treat in a particular language is not a decision to ignore the other language/s. Instead, in clinical practice, it is practical to treat in one language and monitor the untreated language/s to see if generalisation occurs. The section below on collecting speech measures contains suggestions about monitoring for generalisation. If generalisation to the untreated language is not occurring, then treatment in that language may be warranted. If generalisation is occurring, no additional action would be needed.

In Wen Ling's case, speech samples obtained one-year post therapy in both languages showed that the lower level of stuttering obtained in therapy was maintained, not only in the treated language but also in the untreated language. In Rachel's case, occasional severity ratings

for the other untreated languages (Mandarin and Malay) obtained from the aunt indicated generalisation of treatment effects to the untreated languages. In Jun Hock's case, clinical observation and global severity rating scores by the parents for both languages from time to time indicated that the reductions in stuttering evident in the treated language had generalised to his untreated language (Mandarin). Global ratings were used because the parents reported that Jun Hock spoke more frequently in English compared to Mandarin even when spoken to in Mandarin. Thus, the parents could observe and rate the untreated language only when code-switching occurred from English to Mandarin.

In the event that generalisation to the untreated language does not occur, clinicians need to decide when to start treatment in the untreated language. The absence of research data means that guidelines for timing are not available. One suggestion would be to begin treatment in one language and if the stuttering in the untreated language remains unaltered once the treated language had shown a significant decrease in stuttering, to commence stuttering treatment in the untreated language. But what is a "significant decrease"? We would suggest it is within a few weeks of the parent first beginning to notice and comment on a difference developing between the two languages. If that difference persists or increases over those few weeks, then treatment in the untreated language could be targeted. When required, it is necessary to provide this treatment before the child progresses to stage 2, the maintenance stage. By this point, the child must have achieved near-zero levels of stuttering in both languages or s/he should not progress to stage 2.

If the clinician does not speak the other language/s, another clinician could be consulted for further therapy. A more practical alternative is to guide the caregivers to carry out the treatment in the other language/s, using the observation, measurement and treatment skills they have learned through the common language. Instruction continues in the common language, but the parent conducts the structured and unstructured conversations in the other language/s.

Monitoring untreated languages for generalisation necessitates collection of speech measures for both the treated and untreated languages. It also raises the issue of the reliability of judgments of stuttering in languages not spoken by the clinician. These issues will be addressed in the next sections.

Collecting speech measures

We suggest that clinicians can continuously monitor stuttering in the untreated language/s of bilingual children who stutter using parental ratings of severity from beyond the clinic such as those use in the standard Lidcombe Program practices (Onslow, Packman, & Harrison, 2003) for monolingual treatment. In general, subjective speech measures such as parental severity ratings should reflect a client's daily speech repertoire, and thus speech with people who are familiar and also people who are unfamiliar should be considered. Shenker (2004) recommended that, in cases of treating bilingual children, severity ratings could reflect a global rating of all speech in all languages. This might be particularly useful when severity is similar across languages. Alternatively, a clinician might choose to have the parent collect a daily severity rating in each language, thus enabling accurate monitoring of each. The severity ratings could then be supplemented by occasional recordings of speech, in treated and untreated language/s in order to check for generalisation, reliability of parental severity ratings, and/or objective measures such as percentage of syllables stuttered (%SS).

Wen Ling's mother was able to provide daily severity ratings and occasional recordings in the treated language (Mandarin) and, when requested, also provided speech recordings in the untreated language (English). Because Wen Ling rarely spoke English with her mother, her mother was unable to provide severity ratings in the untreated language. Therefore, the clinician also obtained speech recordings of Wen Ling speaking in English with another conversation partner in order to check for generalisation of stutter-free speech to the untreated language.

Rachel's aunt was also able to provide daily severity ratings beyond the clinic in the treated language (English) and occasional severity ratings for the other untreated languages (Mandarin and Malay) when requested. Obtaining speech recordings was not a straightforward task for her aunt. Rachel refused to speak Malay to unfamiliar people (her maid was a familiar person). Therefore, it was difficult collecting Malay speech recordings with an unfamiliar person. It was also not easy obtaining English and Mandarin speech recordings with unfamiliar people as Rachel was naturally shy and often spoke only in one or two word utterances with unfamiliar people. Therefore, speech with unfamiliar people was often not representative of her true speech. However, some speech samples obtained contained a mixture of English and Mandarin spoken with her aunt, and occasionally, conversations with the maid at the same time. Using these samples, the clinician was able to monitor the progress Rachel made in the untreated languages.

In Jun Hock's case, Jun Hock's mother also provided daily severity ratings for the treated language (English) and occasional severity ratings for the untreated language (Mandarin). Speech recordings were also collected in both languages at the start of the therapy. However, as therapy progressed, obtaining severity ratings and recordings in Mandarin was difficult as Mandarin was not spoken as frequently as before, except during occasional code-switching situations. Whenever spoken to in Mandarin, Jun Hock would reply in English.

These cases demonstrate that collecting separate severity ratings for the treated and untreated languages is often a viable clinical method. In two of the case examples, severity ratings of the untreated language were only occasionally requested, as the children were research participants who were being closely monitored via recordings of speech in the untreated language/s. However, in standard clinical practice, global severity ratings reflecting speech in all languages or separate severity ratings of speech in each language would be clinically viable.

Measuring stuttering in languages not spoken by a clinician

In typical clinical practice, the clinician who carries out the therapy is usually the one who determines stuttering frequency in %SS. Often stuttering frequency is determined in the treated language only. However, the clinician from time to time might need to measure %SS in the untreated language/s to supplement severity ratings and to gauge degree of generalisation, particularly if the parent is unable to do so. If that clinician does not speak all of the relevant languages, then there could be difficulties with obtaining the measures needed. Sometimes, if another clinician is available and able to measure stuttering in the unshared language, s/he may be requested to measure the child's stuttering to enable a more reliable and accurate measurement. This would be particularly important if the child manifests stuttering behaviours which are atypical, such as in Wen Ling's case, who presented with atypical

audible inhalations as part of her stuttering. However, it might not always be possible to find another speech pathologist who speaks the unshared language to make the required measures of %SS. In this case, there are two choices: a) rely purely on the parent's measures of severity of stuttering in the unshared language, or b) make measures of %SS, despite not speaking the language, to supplement the parent's severity rating measures. The latter option raises the issue of reliability of measuring stuttering in a language not understood by the observer.

Studies of monolinguals have indicated poor reliability judgments even among clinicians who are trained and experienced in stuttering (e.g., Cordes & Ingham, 1995; Cordes, Ingham, Frank, & Ingham, 1992; Ingham & Cordes, 1992). Studies of bilinguals are more limited. Available studies using adult samples (see Van Borsel & Britto Pereira, 2005; Van Borsel, Leahy, & Britto Pereira, 2008) indicate that acceptable levels of reliability can be achieved in identifying whether a person stutters or not, regardless of language, although it was a more difficult task in an unfamiliar language. However, factors such as similarity or closeness of an unfamiliar language to a familiar language could to some extent influence judgment (Van Borsel et al., 2008). In a recent study, findings from Einarsdóttir and Ingham (2009) suggest that experienced speech pathologists were shown to be highly accurate in identifying the presence or absence of stuttering in 5-second exemplars from young children who stutter in an unfamiliar language. However, identifying the presence or absence of stuttering in short 5-seconds exemplars is a different task from diagnosing stuttering, or measuring the frequency of stuttering from conversational speech samples. No research has been conducted to determine reliability of measurement or measurement accuracy of %SS or severity rating scores in unfamiliar languages. Nevertheless, the research cited suggests that clinicians may be able to make reliable judgments of the presence and absence of stuttering in unfamiliar languages. Clinicians could also check with the caregivers regarding each stuttering behaviour observed in the unfamiliar languages or any other questionable behaviours to clarify or verify their judgments. Therefore, clinicians are equipped to make judgments in unfamiliar languages to decide whether a child is ready to enter stage 2 of the Lidcombe Program.

Conclusion

Working with bilingual children who stutter and their families will continue to be a challenge for clinicians. However, through sharing experience and knowledge between clinicians, caregivers, and their children, treatment need not be an effortful task but one that all will learn to enjoy and benefit from. Although this article was written using examples of Malaysian bilingual children, the suggestions provided throughout could also be useful to clinicians working with other bilingual children and their families.

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1   In this article, "bilingual" is used to also refer to "multilingual".

2   Names of all the children have been changed for the purposes of confidentiality.

3   The treating clinician for all the cases presented is able to speak English, Mandarin, Malay, and a few Chinese dialects.

Etain Vong is a practising speech-language pathologist/tutor, currently undertaking her PhD studies. **Dr Linda Wilson** is a lecturer in stuttering at Charles Sturt University. **Associate Professor Michelle Lincoln** is a researcher, writer, and teacher in the area of stuttering.

Correspondence to:
Etain Vong
PhD Student
School of Community Health
Charles Sturt University
PO Box 789, Albury, NSW 2640, Australia
email: etain11@gmail.com

Clinical insights

Partnerships: A service delivery option for speech pathology in Indigenous communities

Andrea Coleman, Tania Porter, Ursula Barber, Jillian Scholes, and Helen Sargison

The discrepancy between the growing demands for speech pathology services in Australia and the size of the skilled workforce calls for innovative solutions to meet population health needs. This is perhaps most apparent in rural and remote Aboriginal and Torres Strait Islander communities where the delivery of high-quality allied health services (necessary to close the gap in health inequality) is frequently challenged by an underinvestment in the workforce. In response, allied health clinicians are actively seeking alternative models of care that utilise a diverse range of resources to deliver the service. The purpose of this clinical insight is to share one such experience of service adoption from the perspective of the allied health team in the Deadly Ears program (Qld Health Aboriginal & Torres Strait Islander Ear Health Program). After outlining the background of the partnership, the paper highlights how the allied health team used this model of service delivery to reduce the impact of otitis media on communication development for Indigenous children in the context of the early childhood education setting. The insight then draws on reported benefits and areas for improvement with the intent of sharing how this model of care can effectively add to the scope of practice for speech pathologists working in resource-poor settings.

The prevalence of otitis media (OM), infection of the middle ear, exists in much higher rates in the Indigenous[1] population than the non-Indigenous population; it begins earlier and may extend into adolescence and beyond (Couzos, Metcalf, & Murray, 2001). A prevalence of 91% has been reported in Indigenous infants (Morris et al., 2005) compared with 30% among non-Aboriginal infants (Boswell & Nienhuys, 1995). OM often occurs with a fluctuating mild-moderate conductive hearing loss that has the potential to adversely affect speech and language and educational outcomes (Williams & Jacobs, 2009). For this reason it is important that approaches to the management of OM in children from Indigenous communities encompass not only medical, but also developmental and educational considerations.

Deadly Ears is a statewide (Queensland) Indigenous ear health program. It is the core component of *Deadly Ears Deadly Kids Deadly Communities: 2009–2013* (Queensland Health, 2009), a comprehensive inter-agency strategic framework established to improve ear health in Indigenous children. Following community invitation, the Deadly Ears team works to develop sustainable solutions that improve ear health related population outcomes. This requires a diverse team that includes Community Engagement and Development, Health Promotion, Workforce development, Allied Health and an ENT outreach surgical team known as "Hospital Walkin' Country". This paper focuses on the allied health component of the program, which aims to reduce the impact of OM in Indigenous communities.

Working closely with local service providers is essential to create the positive environments necessary to optimise communication and play development for all Indigenous children. Indeed, formation of partnerships with community-based organisations is considered essential for successful delivery of health promotion and capacity building activities in Indigenous communities (Pyett, Waples-Crow, & Sterren, 2008). While delivering sources to address the impacts of OM in Woorabinda community in early 2010, the Deadly Ears allied health team became aware that two other service providers shared the same aim: to reduce the impact of OM for 0- to 4-year-olds in a remote Indigenous community by building the capacity of key stakeholders in the early education setting. The first of these, Undoonoo Day Care, is a Multifunctional Aboriginal Children's Service (MACS) long day-care in Woorabinda community, managed by the Woorabinda Shire Council. The second, the Child Services Skilling Plan (CSSP) (a Department of Education and Training program) was working with Undoonoo to deliver contextualised training to support the centre to meet legislative requirements and to provide quality early childhood services. Deciding that combining their efforts may prove more efficient than working separately, the three groups agreed to move forward in partnership to meet their shared goals. This paper describes how the shared journey evolved and offers a preliminary evaluation of its effectiveness to date.

From top to bottom: Andrea Coleman, Tania Porter, Ursula Barber, Jillian Scholes

Moving forward in partnership

The partnership's first step was to develop a joint vision and objectives. The shared vision became: "all children have the right to be healthy and engage in learning environments". This goal aligns with the Commonwealth's vision that "by 2020 all children will have the best start in life to create a better future for themselves and the nation" (COAG, 2009).

The partnership agreed that their key objective was to empower Undoonoo Day Care centre staff to (a) know about OM, its causes and consequences; (b) identify OM in the children and refer to an appropriate service; and (c) use key strategies to support the language development of the children (i.e., get down and close, engage with interest, talk to the children about what they are doing). An additional objective was to develop community-owned and community-specific resources to promote ear health to the wider community.

Strategies, activities, and actions to progress these goals were also identified through a process of consultation within the partnership. The focus was to meet the needs of the childcare director and the training requirements of the staff to support them to complete their childhood services studies. Specific activities included:

- Deadly Ears staff delivered a series of video-teleconferences (VTC) to rural and remote support TAFE teachers around the state on OM, the impact of OM, and strategies to facilitate learning with a conductive hearing loss. This was a train-the-trainer model of delivery to support rural and remote support teachers to embed OM into the delivery of their curriculum to their students;
- collaboration for the delivery of training in Certificate IV Training and Assessment for the directors of Indigenous day cares across the state to include the development of a module on language stimulation and a module on OM;
- collaboration on training of day care staff on health and hygiene curricula, including strategies to reduce cross infections;
- imbedding nose blowing and hand washing into transitions with the children have been included into professional conversations, presentations, and assessment for childhood services students.

The partnership ensured that all training delivered aligned to the needs of the community and that all follow-up, regardless of the service, contained consistent information and messages.

Evaluation of the partnership

Six months following initial implementation, preliminary evaluation was done to determine how effective the partnership had been, whether it was useful for all involved, and if it represented a model to move forward with in the future, both in Woorabinda and in other Indigenous communities. This was done through Deadly Ears allied health staff seeking verbal feedback from representatives of Undoonoo Day Care and the CSSP, and Undoonoo's director seeking feedback from day care centre staff. The information gained from these conversations was recorded and then reviewed to gain a sense of perceived benefits of the partnership to service providers and the community, positive behaviour changes within the childcare setting, and areas where the functioning of the partnership could be improved. In addition to this, the Partnership Analysis Tool (VicHealth, 2004) was used to gain a measure of the strength of the partnership itself that could subsequently be used to monitor its ongoing effectiveness. The Continuum of Partnerships and The Checklist components of the Partnerships Analysis Tool were completed by each member of the partnership separately and collated to gain this measure.

Although limited by the small number of stakeholders in the partnership, the outcomes gained according to the Partnerships Analysis Tool suggested that in the initial six months the partnership had evolved from each of the three groups working in "Isolation" to working in "Cooperation/ Collaboration" on the Partnership Continuum. Undoonoo characterised the partnership more as "Cooperating" on the continuum which likely reflects the fact that CSSP and Deadly Ears are more aligned in their service delivery obligations, and therefore it is perhaps more appropriate for these services to be "Collaborating". Hence both Deadly Ears and CSSP characterised the partnership as being a long-term collaboration which includes shared planning, joint responsibility, and equal commitment for goal attainment. Undoonoo characterised the partnership as involving more of an exchange of information, altering activities, and sharing resources. However, a high level of trust and power sharing based on knowledge and expertise was also indicated across the three groups.

The positive status of the partnership also appeared to be supported by the verbal feedback gained from the three service provider representatives and the day-care centre staff. As mentioned previously, the feedback addressed three areas: perceived benefits of the partnership to service providers and the community; positive behaviour changes within the childcare setting; and areas where the functioning of the partnership could be improved.

Perceived benefits of the partnership

Intersectoral sharing of knowledge, skills, and resources with regards to children's services curriculum, policy, training methods, and OM and language strategies was identified as a key benefit of the partnership. This was felt to then enable a collaborative and consistent approach to the delivery of training to early childhood education and care professionals about OM and language stimulation strategies. These benefits were also reported by Undoonoo staff (i.e. "I can see that you are working in partnership and it's benefiting us"), and in particular reduced overlap and repetition of information to staff and of more positive approaches to staff learning and development.

Additional benefits for Deadly Ears and CSSP members of the partnership included cooperation and consultation across both services for policy planning and future service development, and development of a strategy to implement a leadership model across a wide range of Indigenous communities.

Benefits to the Woorabinda community were also identified via feedback from the Undoonoo staff. They reported that ear health promotion messages spread not only to children and staff in the childcare but further into the wider community (i.e. "we are able to get the information on ears out into the community"). This was then felt to result in increased health awareness and action in the community: "More awareness in the community of children's needs, especially their ears and speech. Parents are asking more questions where before they were too shame to ask or didn't know what to ask".

Positive behaviour changes within the childcare setting

The representatives of the three services, and the Undoonoo Day Care director in particular, felt the staff had an improved ability to identify children with ear health and communication difficulties and to refer to the appropriate health service provider. They also identified greater flexibility in the thinking of staff when it comes to strategies to support ear health and early development: "It [the partnership] has given the staff ideas to go outside of the box and look for different strategies especially with ears and language development".

It was also reported that the partnership enabled open communication between the three services, which had a flow-on effect in that the staff at Undoonoo are now being "recognised as educators not babysitters" by the community. Staff are "valued by the community and the community learns what good work they do. This inspires them to continue working when times are difficult".

In addition to the benefits outlined above, the partnership has been able to (indirectly) influence children in other Indigenous communities. Rural support teachers have reported that the series of VTCs delivered by Deadly Ears staff have completely "transformed" their practice with respect to supporting staff with children who have language difficulties, and they have been more readily able to identify children with OM and refer them for appropriate treatment. Another teacher reported that this model of service delivery was "looking at the condition holistically" and she "believes it is vital that we [rural support teachers] incorporate this program into education programs for early childhood centres not only concentrating on remote area centres but also urban, as the condition [OM] is everywhere".

Potential areas for improvement

The areas identified for the partnership's continued growth include strategies to: 1) ensure alternative views are expressed; 2) develop a way of reviewing the range of potential partners to add to the collaboration; and 3) bring in new members.

Conclusion and future directions

From the preliminary evaluation done to date, the partnership between Undoonoo Day Care centre, Deadly Ears program, and the CSSP appears to have delivered positive outcomes for the day care children, staff, and the wider Woorabinda community. This has been foremost in terms of the increased identification of OM and communication difficulties, and improved use of strategies to support the children in the centre. It has also been an effective means of empowering an ear health promoting environment in the community through collaboration on a range of community-driven strategies. Through a partnership we were able to build the capacity of the key stakeholders in the community, as well as the services within the partnership, which will enable more sustainable outcomes. The results of this evaluation are limited in scope due to its preliminary nature, the small size of the partnership, and the brief evaluation timeframe. It should also be noted that the partnership exists within a context where extensive community engagement and relationship building has been completed prior to its initiation, and without this, the outcomes may have been different. Further evaluation over time is recommended; however, this model, with its positive benefits within the community and beyond, may be worth considering for implementation in other communities, to help support sustainable community outcomes.

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1   Indigenous refers to Aboriginal and Torres Strait Island people of Australia

Andrea Coleman completed her Bachelor of speech pathology in 2006 and is currently employed by the Deadly Ears Program. **Jillian Scholes** is a speech pathologist and the allied health team leader with the Deadly Ears program.

Correspondence to:
Jillian Scholes
Speech Pathologist/Allied Health Team Leader
Queensland Health
Deadly Ears Program, PO Box 1507, Fortitude Valley 4006
phone: 0422 009 327
email: jillian_scholes@health.qld.gov.au

Clinical insights

Home-based speech pathology rehabilitation for an African stroke survivor

Katy Stewart

Katy Stewart

This paper discusses culturally sensitive home-based management for a limited English proficient (LEP) African stroke survivor within the context of an early discharge program. Positive outcomes with speech, vocal quality and swallowing were achieved through a culturally modified program. The cultural competence of the speech pathologist and the skills of the interpreter were essential to enhance the therapy process. The challenges involved are discussed, along with suggestions for speech pathologists.

People who do not share the language of the health care provider suffer from poorer health (Albin, 2006, as cited in Hadziabdic, Heikkilä, Albin, & Hjelm, 2009) and have decreased use of health services (Hu and Covell, 1986). With global migration on the rise, speech pathologists need to work increasingly with disordered foreign speech and languages, be culturally competent, and provide relevant, culturally sensitive services to all patients (Riquelme, 2007). Due to the limited representation of non-English-speaking participants or participants with limited English proficient (LEP) being included in research (Frayne, Burns, Hardt, Rosen, & Moskowitz, 1996), there are few published studies which report on the outcomes when using interpreters in speech pathology management. This limited availability of empirical research makes the provision of evidence based speech pathology difficult. Providing culturally appropriate therapy for patients with LEP in the home environment can pose extra challenges, such as the choice of appropriate assessments and therapy targets, the variability of different cultural environments, and the efficient and effective use of interpreters.

This paper uses a case example (Gloria) to illustrate the challenges associated with home-based management of a culturally and linguistically diverse patient. The aims of this paper are to (a) discuss the provision and adaptation of management with a LEP African stroke survivor, (b) explore the challenges in the provision of culturally and linguistically appropriate speech pathology management in the home setting, and (c) outline suggestions for working with patients with LEP.

Gloria

Gloria (a pseudonym) consented to participate in this case study, a larger research study, and for her photo to be published, all of which have approval from the relevant Ethics Committee. Gloria is a 56-year-old female who presented with a sudden onset of mild-moderate dysarthria and oral-pharyngeal dysphagia and was diagnosed with an acute right hemisphere ischaemic infarct. She was an inpatient in a stroke unit for six days before being referred to Rehabilitation in the Home (RITH) for an early supported discharge with hospital substitution services.

Prior to her stroke, Gloria was fit and well. She was independent with self care and was an active member of her family taking part in childcare, cooking, gardening, and going to the markets for groceries. Gloria is part of the Kissi ethnic group and was born in the Republic of Liberia. Gloria lived in Liberia during the Liberian Civil Wars and recently moved to Australia through family sponsorship. Liberian refugees often have a rural background with exposure to war, flight, and refugee camp life (Schmidt, 2009). Gloria speaks Kissi with her family and it is her first language. She had been attending basic English classes but her English was limited to simple social greetings and counting. Gloria lived with her two granddaughters, and her son lived next door.

When asked about her priorities for rehabilitation, Gloria reported that she wanted to be as healthy as before, for her face to be normal, and for her speech in Kissi and in English to be better. Gloria was motivated to receive therapy and wanted to return to English classes but not until her speech improved. Gloria's speech, phonation, and swallowing were assessed by the RITH speech pathologist 15 days post stroke. Initially, Gloria presented with imprecise articulation, poor respiratory control with low volume, reduced pitch range, harsh vocal quality, and hypernasality. Prior to therapy, Gloria's swallowing was abnormally slow and she showed inconsistent signs of aspiration.

Intervention

Gloria was verbally provided with information and education about stroke recovery, dysarthria, and dysphagia. Intervention followed standard procedures such as oral motor exercises, articulatory drills with resonance, respiration and phonation training, and behavioural intervention for dysphagia. Gloria completed regular home practice and accepted eight sessions of therapy over 22

days. As regular home practice is known to enhance treatment effectiveness for dysarthria (Robertson, 2001), Gloria was encouraged to complete a daily home program.

Culturally appropriate therapy

Appropriate linguistic targets were chosen and adapted based on Gloria's goals and her daily activities. Functional practice targets were chosen in English and Kissi and included: serial and automatic speech, articulation drills and tongue twisters, and verbal generation of a shopping list. As Gloria wanted to return to her English lessons, some articulation drills were adapted to practise the social greetings that Gloria had been learning in class. The speech pathologist also used role-play to stimulate English and Kissi conversations. In an attempt to be culturally relevant, therapy exercises considered Gloria's ethnic background. Kissi women often tend small vegetable gardens, trade in the market, and enjoy using music, whistling, drumming, and singing to communicate and when working in the fields (Sherman, 2011). Therefore, RITH treatment included: (a) incorporating African farming songs into phonation therapy, (b) singing while working in her vegetable patch, (c) whistling for facial symmetry and lip strength, (d) repeating and reading aloud a list of culturally appropriate foods (e.g., the root vegetable cassava), and (e) requesting foods in the market.

Challenges

Lack of culturally appropriate resources

The lack of assessments and treatment resources for speech pathology in languages other than English makes working with LEP patients difficult (Clark, 1998). Due to Gloria's LEP, the speech pathologist was unable to assess speech intelligibility, complete written quality of life questionnaires, or read aloud words and paragraphs. There is little available information about the Liberian and Kissi cultures and language which made cultural preparation for assessment and treatment difficult. The speech pathologist was required to learn as she went along, guided by Gloria, her family, and the interpreter.

Family support and training

Gloria's son was concerned about her progress but did not take an active role in therapy. Politeness and respect for elders are highly valued in Liberian society (Dunn-Marcos, Kollehlon, Ngovo, & Russ, 2005) and as Gloria is the matriarch of her family it is possible that Gloria's son wanted to respect the family boundaries. Gloria's teenage granddaughter, "Jane", was actively involved in therapy. The speech pathologist provided informal education and training to Jane and asked her to encourage and demonstrate the home practice. Jane attended high school and had exposure to formal education and was able to assist Gloria with her home practice and provide feedback to the speech pathologist. Gloria seemed to easily accept assistance from Jane, possibly because she was of the same gender and lived with Gloria. As soon as Jane was engaged as an informal assistant, immediate positive improvements in the accuracy of home practice were noted.

Home-based management

The experience in witnessing Gloria in her own setting was invaluable in increasing the speech pathologist's cultural sensitivity and in establishing rapport but some obstacles were present. Liberian culture typically follows a multi-generational, extended family structure which was evident in this case (Schmidt, 2009), with Gloria's extended family and friends present at some sessions. The visits were often unplanned and the visitors often let themselves into Gloria's home and waited for the session to finish. This made therapy difficult as Gloria appeared uncomfortable and the session was often cut short. During the final assessment, Gloria was babysitting her great-grandson who was a toddler. This may have indicated that Gloria was recovering well and returning to her role of a carer but the speech pathologist often needed to redirect focus back to therapy and multiple attempts at audio recordings were required due to background noise.

At the end of therapy, Gloria reported that she preferred to have her therapy at home rather than to prolong her stay in hospital. Despite being referred on to an outpatient

service, Gloria reported that three weeks of home visiting therapy was not long enough. After Gloria had attended outpatient therapy, she again reported that she would have preferred to have had ongoing therapy at home rather than as an inpatient or as an outpatient. This may be due to a more culturally appropriate context, with greater communication opportunities between her family and the speech pathologist or simply perhaps convenience.

Cultural differences with learning

Liberian refugees may need encouragement to become active participants in formal education, such as checking on homework, as this was not common in Liberian education even before the civil wars (Schmidt, 2009). Gloria appeared to dislike being asked how much home practice she had done or what she had practised. This made it difficult for the speech pathologist to check the frequency, accuracy of home practice, and use of techniques. We can assume that Gloria had limited exposure to schooling, as formal education was not introduced until the late 1950s and was very limited (Schmidt, 2009). Many adult Liberians learn orally rather than through writing and are more accustomed to memorisation rather than through asking questions (Schmidt, 2009). Gloria could not read or write proficiently in Kissi or English and had difficulties remembering exercises and practising on her own. Home practice therefore relied on diagrams and memorisation of exercises. Some paper-based home exercises were written in English and were interpreted by Gloria's granddaughter.

Developing rapport

As the Kissi are very age-oriented and tribes are dominated and led by the elderly (Sherman, 2011), in retrospect, it may have been preferable for Gloria to have been treated by an age-matched speech pathologist. Initially, Gloria did not react to non-verbal attempts by the speech pathologist to build rapport. Gloria used reduced eye contact and mumbled responses with the speech pathologist which seemed in contrast to the naturalness of communication between Gloria and the interpreter. This could be partly explained by the need to speak through an interpreter but more probably due to a lack of familiarity and because of cultural differences. Liberian refugees have often had a prolonged refugee experience and have learned to be "on guard", thus requiring more time to develop trust (Schmidt, 2009). As rapport with both patient and interpreter has a significant effect on assessment (Clark 1998), the speech pathologist provided extra education and rationales for exercises, quickly followed up on the provision of resources as promised, frequently reviewed goals, and set up regular appointment times. The speech pathologist also changed her dress for the visits, adding a colourful scarf to mirror Gloria's brightly coloured traditional clothing and head scarves. Kissi social greetings were learned by the speech pathologist and gestures were used regularly to enhance communication and rapport. Gradually, Gloria appeared more comfortable with the speech pathologist and they were able to laugh together in a similar manner to the relationship Gloria had with the interpreter. Gloria's confidence in participating in therapy improved from 6/10 pre therapy to 8/10 post therapy when using a self-rated scale. This may suggest that by developing rapport and trust, the confidence in speech therapy of a patient with LEP can improve over a short period of time.

Financial and time constraints

There are known time and cost implications when working with interpreters (Enderby et al., 2009). In Gloria's case, two sessions were required for initial assessment, and therapy sessions often seemed to be more time intensive, with less direct therapy completed compared to treatment of English-speaking patients. The ongoing education and training of the interpreter and Jane was also time intensive. It was often difficult to extend the session as the professional interpreter was booked for one hour at a cost of $88 per hour. Such difficulties may suggest that patients with LEP may require longer, more intensive home visits than English-speaking patients, resulting in an increase in time and cost.

The interpreter

An interpreter can provide more than language mediation – they can also provide cultural and linguistic information, help establish rapport with the patient, or clarify a misunderstanding of the patient (Isaac, 2005). A Kissi interpreter was required for all visits with Gloria and was an integral member of the team. The same interpreter was present for all sessions making treatment and education consistent. She provided historical information about Gloria's refugee history, the Kissi culture, and previous health care which enhanced the speech pathologist's understanding of Gloria's situation. As this interpreter had little experience with dysarthria treatment, some training was needed. Education and informal explanations to the interpreter appeared to aid rapport, enhance the interpreter's understanding of the program, as well as improve the cueing of Gloria. The interpreter was able to remember speech and swallowing strategies and would spontaneously ask Gloria to slow down or to take a deep breath. She also assisted in the creation of Kissi articulation drills, multisyllabic words, and tongue twisters.

Speech pathologists must be mindful of confidentiality and trust, especially when working with a small language community (Tribe & Thompson, 2008). The interpreter in this case was known to Gloria. Prior to the stroke, the interpreter and her mother would visit Gloria and her family socially. The interpreter reported that she had visited Gloria while she was in hospital as members of the small Kissi group would often do. Even though Gloria and her family appeared agreeable and consented to have the interpreter present, it was difficult to discuss any concerns or alternatives as the interpreter was the only one available and required at all times.

Outcomes

After RITH services, Gloria reported that the program was "very helpful" and she showed improvement across a range of articulation and phonation measures. Gloria, her family, and the interpreter also reported improved speech intelligibility in Kissi. Gloria's swallowing also improved with more prompt swallowing, no signs of aspiration, and a return to a normal diet and fluids. As non-English-speaking patients who have dysarthria may need help to access services (Enderby et al., 2009), the speech pathologist, with Gloria's permission, contacted Gloria's English teachers and provided information about dysarthria and strategies to assist Gloria in the classroom. Gloria has now finished outpatient therapy and has returned to her English lessons where she is reportedly making good progress.

Suggestions

In summary, when working with patients who either do not speak any English or who are limited in their English proficiency, speech pathologists may consider the following:

- book extra time with the interpreter, especially on the first few sessions;
- consider the need for formal assessment and plan and modify assessments in advance;
- investigate the availability of resources in other languages;
- request cultural awareness training with the interpreter, especially for cultures the speech pathologist is unfamiliar with;
- use professional interpreters and also engage any English-speaking family as early as possible;
- request the same interpreter for consistent translation services;
- consider age- and gender-matching of the interpreter and speech pathologist to the patient;
- be mindful of confidentiality in small ethnic communities;
- liaise with the interpreter to check appropriateness of treatment;
- consider the location of management (clinic, ward, or home) and the effect of this location on your ability to conduct management as well as the impact this may have on the patient;
- set goals with the patient, family, and interpreter and clarify patient priorities;
- consider the patient's previous exposure to formal education and literacy levels which may result in a lack of familiarity with western teaching techniques and reduced self-confidence with therapy;
- encourage home practice and provide linguistically appropriate materials;
- attempt to use culturally appropriate and functional therapy activities;
- consider access to appropriate community services;
- include non-English-speaking or LEP patients into research to investigate the suitability of speech pathology interventions for this population.

Summary

Quality, consistent professional interpreting services are essential to build rapport and deliver efficient and effective speech pathology management when working with patients who have LEP. Understanding a patient's background can increase the speech pathologist's cultural competence which may, in turn, improve rapport and patient outcomes. LEP patients such as Gloria are at risk of decreased access to health care but can benefit from home-based speech pathology with cultural, linguistic, and time modifications.

Acknowledgements

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Katy Stewart is a senior speech pathologist at Rehabilitation in the Home, Royal Perth Hospital. Her research interests include stroke rehabilitation and the use of therapy assistants.

Correspondence to:
Katy Stewart
Senior Speech Pathologist
Rehabilitation in the Home, Royal Perth Hospital
GPO Box X2213, Perth, Western Australia, 6001
phone: 618 6477 5152
email: khackling@hotmail.com

What's the evidence?

Working bilingually with language disordered children

Linda Hand

Linda Hand

Speech pathology has been facing the challenge of working with clients and families from multilingual and multicultural contexts for some time now. However, it is an area in which professionals continue to feel a lack of sufficient knowledge or skills, and where there seems to be little consensus. This edition of *What's the evidence* draws on codes of ethics documents and human rights principles to suggest that speech pathologists could take a more advanced view of practices with bilingual clients. It then discusses how the current evidence base may be used to support the arguments for bilingual support and intervention for language disordered populations.

Clinical scenario

You have a number of children from bilingual or multilingual homes in your practice, including children whose parents were recent migrants or refugees to this country, or are in strongly identified cultural communities. These cultures and languages include Vietnamese, Chinese Mandarin-speaking, Māori, Samoan, Lebanese-Arabic, Greek, and Somali. You want to discuss with the schools and with associated professionals the need to incorporate multiple cultural communication models and support for bilingualism in the work with these children. The first senior school person you speak with says "we believe very strongly in helping these children succeed in school and the thing they need most is the best English they can have. We treat all children equally here – it doesn't matter what culture or language they come from. We put a lot of support into helping their English. If they speak their other language at school, they won't learn English fast enough". This sounds difficult to argue against, and it seems to be a rejection of your original intention. You are not sure how to respond. You discuss it with some of your speech pathologist (SP) colleagues and find some saying "It is too hard for children already struggling with language to deal with two (or more) languages. Besides, I don't speak their languages, and they are in this country now; what they need most is English and that is my responsibility. It would be unethical and unrealistic for me to try to deal with any other language – I have over 60 different ones in my area! I can't possibly

know them all". The conversation is largely about languages, and it proves difficult to get any discussion going on cultural aspects of communication. You realise you need some good evidence to put the case for cultural communication and language support being the business of SPs and schools.

Response to this scenario

When you stop to reflect on this scenario, you feel that your colleagues have taken a position which seems well supported by "commonsense" or ethical and social justice principles, and which shows some consensus between the professions. For example, you can appreciate that English is dominant in countries like Australia, New Zealand, and the United Kingdom, and is also the language of school, so perhaps we should give them only English? Similarly, perhaps our colleagues are right to expect that learning multiple languages will be too hard for children with language disorders and that we may be right in only teaching one? However, you are also aware that they are adopting the strong legacy of an underlying monocultural model of practice. You wonder whether the current evidence base actually supports this model of practice and whether "commonsense" reflects what the ethical and social principles really say.

In response to the scenario, it seems timely and paramount that we put the commonsense perspectives aside and look to what the evidence and our ethical codes are actually telling us. What enables bilingual children to succeed? what can a SP who does not speak every language achieve? and what do the principles of social justice and equity, and ethics actually say?

Before turning to the evidence, you decide to review your code of ethics to determine whether you are right in questioning the monocultural model of practice. The code of ethics of Speech Pathology Australia (2010) states "we do not discriminate on the basis of race, religion, gender", we "respect the context in which [our clients] live", we "strive to provide clients with access to services consistent with their need", and we ensure "our resources (such as assessment tools and communication aids) are current, valid and culturally appropriate", while we "recognise our competence and do not practice beyond these limits" (p. 1). While this seems to support the position taken by your colleagues, you feel that further clarification is needed about what is meant by (the clients') "context" and "need". If we see all children's needs as similar, and that treating all

people the same is what is meant by "not discriminate[ing]", then their position is indeed supported. However, cultural competence and social justice principles are consistent in their presentation that "equity" does not mean "treat all people the same" but rather "treat all according to their need", and that "respect" and "culturally appropriate" means going beyond our own cultural understandings (Martin, 2009).

Interestingly, when reviewing the code of ethics of the New Zealand Speech-Language Therapists' Association (NZSTA) you find that they have taken the discussion a little further. For example, articles 1.6–1.8 indicate that SPs "advocate that all clients irrespective of age, ethnic background, … should have access to speech language therapy services … acknowledge and allow for individuality of clients including race, age, religion, culture", and "respect the rights of and be sensitive to factors such as a client's race, age, religion, culture", and, at article 3.5, "offer these services to clients in a manner which does not discriminate on the grounds of race, religion, culture" and further: "4.4 Members shall ensure that the research is in accord with the Treaty of Waitangi". The accreditation standards for programs that train SPs in New Zealand have an entire section on working with the Treaty of Waitangi, which is a legislated requirement. Terms such as "advocate", "be sensitive to", and "respect the rights of" are somewhat stronger in their implications. You feel that drawing upon these principles, a SP does have an ethical responsibility to consider and address the sociocultural needs of the individual clients that they are working with in practice.

Looking for the research evidence

So far then, these documents can support the idea that practices in multicultural and multilingual contexts should be different to those of monolingual ones. While you are aware of expert opinion in the field that supports this view (Battle, 2002; Kohnert, 2010; Roseberry-McKibbin, 2007), you know that you will require more evidence to advocate the need for this shift in thinking to your colleagues. General points regarding the need to adapt services can certainly be made. But the arguments put forward suggest there are some specific questions that require answers. They are:

1. Does the evidence indicate that bilingualism is "harder" for children with language difficulties than monolingualism?
2. Does the evidence indicate that SPs can – or can't – effectively or competently offer any services in languages that they do not speak well?
3. Is there evidence that supporting multilingualism has any benefits for learners, particularly those with language difficulties?

To answer these questions, the process of searching the research literature was undertaken. Popular databases for speech pathology intervention research were first used in attempt to find high quality bilingual or multilingual treatment studies. Review articles and expert opinion on the topic were also sourced as outlined below.

Databases

The Language and Linguistic Behaviour Abstracts (LLBA), PsychInfo and CINAHL databases were searched, and in order to find any systematic reviews or previously appraised articles on the topic, the Cochrane library and speechBite™ databases were also used. The search terms are listed in Table 1. The search was limited to oral language, excluding studies on speech and literacy.

Table 1. Concept map to generate keywords			
Client group search terms	**Intervention search terms**	**Comparative Intervention**	**Outcomes**
Possible search terms: • child* • bilingual* • language impair* or language disorder*	Possible search terms • language intervention • bilingual intervention	No particular search terms used. Interested in effect of the intervention only.	No particular search terms used. Interested in any outcome.

* Indicates a truncated string (will pick up "child", "child's", "children", "children's" etc.)

The LLBA search yielded 114 results of which 19 proved to be about intervention, ranging from 2010 to 1982. Three were dissertations and not available, three were reviews, one was in a foreign language, leaving six identified as research studies on this topic. Studies conducted before 1990 were excluded. PsychInfo yielded six results, which ranged from 1983 to 2009. Only one was on intervention and that was not a research study. Only two of the six were also found by the LLBA search and the others were not relevant. CINHAHL replaced "bilingual" with "multilingualism" and "language impairment" with "language disorders". It brought up 50 hits from 2010–1997, 18 of which were not in the LLBA search but 13 of these were non-research papers or other sources such as book reviews or magazine articles not reported in LLBA. The remaining five were not relevant to intervention. This left six research articles to review, which are listed in Table 2 with a summary of the purpose of the study, the key findings and level of evidence.

The Cochrane database did not bring up any relevant articles. However, speechBite™ brought up 10 under "bilingual child" of which four proved relevant. Where possible, the speechBite™ database provides a rating for the quality of the studies listed as seen in Table 3. None of the relevant studies rated more than 3 out of 10 suggesting low methodological quality overall. It should be noted that while the speechBITE™ database recognises the clinical value inherent in well-designed single case experimental designs, these are currently not rated.

This comprehensive search for relevant literature highlights that a limited number of high quality intervention studies have been conducted in the field. To look further at the quality of this research, Table 4 provides an example of a critically appraised article for one of the studies to provide more in-depth insight into the nature of research in this area following the EBP guidelines.

Review articles

Relevant review articles on the topic were used to expand the search strategy and to explore expert opinion in the field. In 2010, two journals had issues devoted to the topic, *Applied Psycholinguistics* 31, and the *Journal of Communication Disorders* 43. The second contained two important reviews of the research evidence, one by Thordardottir (2010) and one by Kohnert (2010), along with a number of other relevant research articles. A 2006 edition of *Topics in Language Disorders* was also devoted to this topic, and included another review by Goldstein (2006). Please see Table 5 for a list of the review articles. The review articles all confirm the paucity of research in the field and that the available evidence tends to be from the weaker

Table 2. Research articles identified

Articles identified	Purpose	Type of study. Credibility of level
Tsybina & Eriks-Brophy (2010). Bilingual dialogic book-reading intervention for preschoolers with slow expressive vocabulary development.	Spanish-English bilingual children.	See detailed analysis in table 4
Seung, Siddiqi, & Elder (2006). Intervention outcomes of a bilingual child with autism.	Case study. 3-year-old Korean-English, diagnosed Autism Spectrum Disorder. 12 months intervention in Korean, then 6 months English introduced, then 6 months English-only . Made substantial gains in both languages with "transition" between dominant languages.	NHMRC – no level Justice & Fey, 2004 – Level III
Thordardottir, Elin, Ellis Weismer, & Smith. (1997). Vocabulary learning in bilingual and monolingual clinical intervention.	Single-case experimental design. 4;6 year old Icelandic-English bilingual child, alternating treatments for vocabulary, monolingual English and bilingual. Significant improvement in both conditions, but better results in bilingual for home, but not school vocabulary.	NHMRC – no level Justice & Fey, 2004 – Level II-3
Waltzman, Robbins, et al. (2003). Second oral language capabilities in children with cochlear implants.	Eighteen profoundly hearing-impaired children who were reported to be bilingual received cochlear implantation at age 5 or younger. On standard speech perception and receptive and expressive language measures, some pediatric cochlear implant recipients showed competency in a second spoken language in addition to their primary language. Majority showed age appropriate receptive and/or expressive language in their primary language commensurate with normal-hearing children.	NHMRC –level III-3 Justice & Fey, 2004 – Level II-3
Wauters, Knoors, Vervloed, & Aarnoutse. (2001). Sign facilitation in word recognition.	16 children, 6–10 years old, at school for deaf, learning Dutch and sign language of the Netherlands. Taught written forms with only oral accompaniment, or oral and sign. Randomly assigned to conditions. Higher gains came from the speech + sign condition, although not for all individuals.	speechBite™ classified this study as a Randomised Control Trial, but scored it only 3/10
Kay-Raining Bird, Cleave, Trudeau, Thordardottir, Sutton, & Thorpe. (2005). The language abilities of bilingual children with Down syndrome. (Not strictly an intervention study; included because of the population involved)	Compared the language abilities of 8 children with Down syndrome being raised bilingually with those of 3 control groups matched on developmental level: monolingual children with DS (n = 14), monolingual typically developing (TD) children (n = 18), and bilingual TD children (n = 11). All children had at least 100 words in their productive vocabularies but a mean length of utterance of less than 3.5. Found similar profile of language abilities in bilingual children as for their monolingual peers. There was no evidence of a detrimental effect of bilingualism, but considerable diversity in the second-language abilities.	NHMRC –level III-1 Justice & Fey, 2004 – Level II-1

Table 3. Sample of speechBite™ search results

Authors	Title	Year	Method	Rating
Wauters et al.	Sign facilitation in word recognition	2001	Randomised controlled trial	03/10
Pihko et al.	Group intervention changes brain activity in bilingual language-impaired children	2007	Non-randomised controlled trial	03/10
Hammer et al.	Bilingual children's language abilities and early reading outcomes in Head Start and kindergarten	2007	Case series	N/A
Seung H, Siddiqi S, Elder JH	Intervention outcomes of a bilingual child with autism	2006	Single-subject design	N/A

end of the levels of evidence (Goldstein, 2006; Kohnert, 2010; Paradis, 2010; Thordardottir, 2010). Despite such critique, however, the conclusions drawn were similar and positive across the review papers. For example, Thordardottir concluded "Although the current research base is limited, the few studies available to date uniformly suggest that interventions that include a focus on both languages are superior to those that focus on only one language" (Thordardottir, 2010, p. 523). Further, "no study was found which showed a monolingual focus to be superior to a bilingual one" (Thordardottir, 2010, p.524). Similarly, Goldstein (2006) "did not find evidence suggesting bilingual intervention was counter-indicated" (p. 318). More specifically, these authors found no evidence that bilingualism exposes children to greater risk of language problems across a range of conditions. For example, Paradis et al. (2003) concluded that bilingual children with specific language impairment were not "more impaired" than their participants that were monolingual (p. 123). In fact, Pikho et al. (2007) and Tsybina and Eriks-Brophy (2010) both cite evidence that early acquisition of a second language and regular use of two languages may have beneficial effects on various cognitive abilities in young children.

Drawing conclusions from the available research

Although there is only a small body of evidence available to answer the questions under review, the following conclusions can be drawn: 1) results were positive,

Table 4. Critically appraised article

Article purpose	An intervention study looking at whether children with delayed expressive vocabulary given dialogic book-reading intervention in two languages would gain words in both languages compared to a control group of similar children. They also wanted to measure if parents found this a satisfactory and appropriate intervention. The method had already been shown to be effective for monolingual children using similar presenting conditions and targets.
Citation	Tsybina, I. & Eriks-Brophy, A. (2010). Bilingual dialogic book-reading intervention for preschoolers with slow expressive vocabulary development. *Journal of Communication Disorders*, *43*(6), 538–556.
Design	Randomly assigned to experimental and control groups. Control group had no intervention, but regular measures, during the intervention for the initial treatment group. The control group then had the treatment also.
Level of evidence	Level II-1 (Justice & Fey, 2004); NHMRC level – III-1.
Participants	12 children, 22–42 months of age.
The intervention	Thirty x 15-minute sessions using dialogic book-reading strategies were provided in each language in the children's homes, in English by the primary investigator and in Spanish by the children's mothers, who were trained in the techniques of dialogic book-reading. The intervention took place over a 6-week period.
Results	The children in the intervention group learned significantly more target words in each language than the children in the control group. Effect sizes were large. The intervention children learned an average of 6.7 targets in English (range 5–9), and an average of 3.2 targets in Spanish (range 0–6). The control children learned an average of 0.8 targets in English (range of 0–1), and an average of 0.5 targets in Spanish (range 0–2). A post-test 6 weeks later showed the intervention children produced an average of 5.8 target words in English (range 2–9), and an average 2.3 targets in Spanish (range 0–7). Hence, gains were maintained, but not generalised. Post-intervention for both groups, there was no significant difference in attained scores (i.e., both groups learned similarly from the intervention). Mothers' satisfaction ratings on a questionnaire ranged from 3.2–3.7 out of a maximum of 4. The children learned fewer Spanish than English words overall; however, there was a wide range. Those who learned the most Spanish targets were those children whose mothers used the most consistent Spanish input outside of the intervention sessions, based on information provided in the parent report on children's language input. They were also mostly dual-parent families where both parents spoke Spanish, and had a higher maternal education level than the children who learned fewer Spanish words.
Limitations	Relatively small participant size, although very comparable with other intervention studies. Variability in participants in both presenting vocabulary sizes and degrees of exposure to each language. However, if gains were made regardless of these variabilities, the result is relatively robust. There was no monolingual comparison intervention; however, this would have required a much bigger group. The intervention utilised picture books, and wh- questions. This may not suit all children or mother's styles or cultural expectations. Also, some parents may have provided many more than the minimum presentations of each item (3), whereas some may have only presented the required number.
Summary:	The study showed that children with slow expressive vocabulary development can make gains in two languages following intervention in two languages, compared to controls with no intervention. A relatively simple parent-based intervention was used, which was positively viewed by the parents concerned.

Table 5: Review articles identified

Thordardottir, E. (2010). Towards evidence-based practice in language intervention for bilingual children.

Kohnert, K. (2010). Bilingual children with primary language impairment: Issues, evidence and implications for clinical actions.

Goldstein, B. A. P. (2006). Clinical implications of research on language development and disorders in bilingual children.

indicating that children with language difficulties can learn two languages; 2) there are indications that two languages may be an advantage in language learning for some children; 3) participants in these studies represent a range of presenting conditions, including autism, Down syndrome, and hearing impairment, and all fail to support the idea that "it is too hard for these children to manage two languages"; and finally, 4) interventions can be successfully carried out using a variety of methods and do not require a bilingual SP in order to do so.

Related evidence

Given that there are still only a small number of studies investigating bilingual intervention for children with language disorders, it is important to consider other lines of supporting evidence. For example, we can look at what is known about normal bilingual acquisition, which suggests a potential advantage in bilingualism. A number of robust

research findings are now available, including work by Hoff and Place (in press), Pitko et al. (2007), and Paradis, Crago, Genesee, and Rice (2011) that have investigated the differences in language processing between bilingual and monolingual children. For instance, Hoff and Place (in press) reported on a longitudinal study of bilingual development based on data from 47 children (25 boys and 22 girls) exposed to both Spanish and English from birth and 56 children (30 boys and 26 girls) exposed only to English. The authors concluded that although bilingual children acquired (composite) vocabulary and syntax within the same range as monolingual children, the overall time taken to acquire their two languages was longer than the monolinguals' one. This finding appeared strongly related to the relative amounts of input received in the two languages. Such findings support the need to look in detail at a child's language history and input received during assessment, countering earlier arguments presented in this column to "treat all children the same" and "only consider English". It is important to note in practice that a slightly different trajectory to language learning appears to be evident in bilingual children. Furthermore, the language skills of bilingual children may not be evenly distributed and special attention should be paid to the sociolinguistic contributions made by their different languages during assessment and intervention planning (Goldstein, 2006).

Another area of related evidence comes from a larger body of research regarding bilingual education. This line of research provides insight into the nature of language learning associated with bilingualism. Slavin and Cheung (2005) reviewed 17 studies across a range of bilingual education models (mostly involving Spanish-English bilinguals), concluding that "bilingual instructional models [produced more favourable learning] over those that eliminated [the] native language" (p. 280). The conclusion was that the evidence is mounting in favour of bilingual learning producing superior results for bilingual children, even when the second language is dominant in the education system. The research confirms that maintenance in the first language is a predictor of future proficiency in the second language as well as a powerful tool to assist in the transfer of literacy knowledge from one language to the next. Carlo et al. (2004), Combs, Evans, Fletch, Parra, and Jimenez (2005), and Rolstad, Mahoney, and Glass (2005) are other useful sources for this related evidence. Furthermore, the benefits of bilingual education models are likely to apply to children with language difficulties as well (Culatta, Reese, & Setzer, 2006).

The problem of "evidence"

In complex areas, such as child language and multiculturalism, building a body of evidence that adheres to the NHMRC standards is problematic. The levels of evidence tables such as that of the NHMRC make judgements about "strong" and "weak" evidence based on medical models that require reduction to controllable variables with tightly defined populations and simple interventions. Such systematic control is not well suited to child language difficulties, where clinical populations are poorly defined, and where complex and variable interventions are used (Law, Campbell, Roustone, Adams, & Boyle, 2008). Furthermore, clinical principles in the field of speech and language pathology favour adaptation of interventions to individual needs (Speech Pathology Australia Code of Ethics, 2008), which makes such variables even harder to control. Pring (2004) indicated that randomised control trials in the first instance are not appropriate as we need to develop a strong body of foundation research at the case-study and small control group level. He outlined a progression, wherein specific therapies are developed for well-defined groups, tested first in small-scale efficacy then effectiveness studies, and results disseminated to clinicians for clinical application, before any larger scale studies should be attempted. Fey (2006) made the point that "the motivation for higher level studies and the justification for sponsoring them financially generally comes from studies that have already produced encouraging results using less costly, lower level research designs [that were high in quality]" (p. 318). Certainly premature RCTs may be conducted by glossing over problems, resulting in unusable results, such as could be said of Glogowska, Roustone, Enderby, and Peters (2000).

Another incompatibility that emerges is that cultural and linguistic diversity is about variation from the norm, whereas the evidence level system is about the norm and about subsuming variation within a group to produce statistically robust results over large numbers. But the concept of "normal" populations of minority groups within a dominant culture, especially recent migrant or refugee groups, is problematic. Types and degrees of bi-or multilingualism vary, the amount of identification and practice of originating culture to dominant culture varies, and both of these are subject to sometimes rapid change over time and can be very difficult to judge. This issue presents us immediately with a dilemma. If we try to produce the evidence based on the usual criteria, we run the risk of not finding strong evidence due to the inherent difficulty of running large group studies, and therefore making our arguments look weak. We also may find ourselves concentrating on the evidence that is of least value, that is, those aspects which can be subjected to large group similarities, when the main interest is in variation.

Not only do the levels of evidence downplay the significance of the lower levels, they fail entirely to deal with qualitative data. An important aspect of evidence based practice and research is considering the client and family preferences and needs, and with this aim, the client experience should form a major part of the research. Much of this research, along with much "outcome" research, should be qualitative (Kovarsky & Curran, 2007). However, this research is sparse at best, and discounted even when it is conducted and published. The positivist and therefore culture-bound value system bound up in the levels of evidence is also incompatible with cultural competence perspectives, and needs ongoing critical scrutiny (Martin, 2009; Kovarsky & Curran, 2007).

Clinical bottom line

After finding and reviewing the evidence, weighing up both its strengths and limitations, you draw a number of evidence based conclusions to guide your practice and thinking around this complex issue. Reaching a clinical bottom line is important to be able to challenge the current perspectives of your colleagues and the prevailing monolingual model of practice. Guided by the evidence, the key findings that you want to communicate are:

- *Children with language difficulties learn bilingually at least as successfully as monolingually*. The intervention studies reviewed here have indicated that when language intervention is provided to bilingual children in both languages, the children were capable of learning the two languages to at least as good a level as one, and there is some evidence to suggest their achievement can be superior in bilingual intervention (Kay-Raining Bird et al., 2005; Seung, Siddiqi, & Elder, 2006; Thordardottir et al., 1997; Tsybina & Eriks-Brophy, 2010; Waltzman et al., 2003; Wauters et al., 2001). Of particular importance is that there is no evidence supporting the argument that performance is worse as a consequence of bilingual intervention compared to monolingual.
- *Use bilingual clinical intervention, rather than just encourage bilingualism*. Kohnert (2010) concluded that systematic support for the home language(s) of young children with language impairment is critical to the long-term success of language intervention. She holds that encouragement of home language use is not going far enough, and fails to recognise the significance of the child's social, emotional, and cognitive development taking place within the cultural context of the family. SPs not only can, but should conduct bilingual interventions.
- *Clinicians can conduct interventions when they do not speak all the languages competently*. It is evident that a range of teamwork options are available that can support a shift away from monolingual practice. Family involvement is consistent with family-centred practice principles and the research suggests that children successfully learn language targets with parent-based

interventions. Tsybina and Eriks-Brophy (2010) cited Girolametto et al. (2001) and Robertson and Weismer (1999), finding that parent-administered interventions with monolingual children improved parent–child interaction and resulted in gains in the children's speech complexity, vocabulary, and verbal output, and that reductions in parental stress and anxiety were benefits of family-focused intervention programs. School or preschool based systems are also possible, and recommended (Kohnert, 2010).

- *Other arguments are available that support the equity and culturally competent practice of bilingual intervention*. The available evidence suggests that rather than bilingual children receiving equitable treatment when only the socially dominant language is targeted, they are in fact disadvantaged (see Goldstein, 2006; Kohnert, 2010; Slavin & Cheung, 200; Thordardottir, 2010, for more arguments and evidence on this point). Such an argument ignores the possible academic advantages of bilingualism, and also ignores the child's social and cultural context and marginalises the family who may not speak the socially dominant language well, or at all. It is not consistent with the codes of ethics or scope of practice documents in SP, nor with cultural best practice (Battle, 2002; Roseberry-McKibbin, 2007). The World Health Organization's *International Classification of Functioning, Disability, and Health* (ICF; WHO, 2001), with its emphasis on participation, and environment or contextual factors, includes the family and wider social contexts (such as church and community, which are often conducted in a home language) as an essential part of assessment and intervention practices. Ultimately, bilingualism and multiculturalism should be treated as an advantage, rather than a disadvantage.

- *Take a critical stance towards levels of research evidence*. This evidence based review of the literature identifies the need to look for, and call for, accumulations of single-case and small-scale research with careful descriptions of participants and interventions, and qualitative research particularly on attitudes, preferences, and perceptions of both clients and professionals. Look also for evidence in related fields, such as bilingual education, cross-cultural communication, and normal communication development in complex contexts, to aid the processes of decision-making.

Conclusion

This column of *What's the evidence?* has discussed a range of issues related to the arguments, and the evidence to be marshalled for those arguments, about a contentious area for Speech Pathology: conducting bilingual intervention in language disorders in children. The good news is that so far the results all point in one positive direction. The amount of evidence is increasing and a number of valuable reviews are appearing which are of assistance to clinicians. Using the evidence based framework motivates searching the literature and engenders confidence resulting from an in-depth grasp of evidence. This allows an evidence based, clinical bottom line to be presented in opposition to opinion and "commonsense". It also enables clinicians to look forward to types of research they want to see, and take a critical perspective on the nature of evidence as it is currently presented. This is especially salient in areas of cultural and linguistic diversity.

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Dr Linda Hand is a senior lecturer in the Speech Sciences Programme at the University of Auckland. She trained as a speech pathologist in New Zealand, gained her Master's at the University of Iowa, and her PhD in Linguistics at Macquarie University. She worked for 20 years at the University of Sydney, and returned home in 2007. Linda was instrumental in the Multicultural Interest Group in Australia for many years, and now helps run a website called CLD-SIG in NZ. All enquiries welcome. She is acquiring bilingualism at the time of writing.

Correspondence to:
Linda Hand, PhD
email: l.hand@auckland.ac.nz

Webwords 41

GLBTI affirmative practice

Caroline Bowen

Cool and collectable, Royal Worcester Gaiety Girl Arabella is a fine bone china figurine, pretty in a soft blue gown with pink accents and a matching feathered hat. The real Gaiety Girls first appeared in *haute couture* fashions and modest swimming costumes in the 1890s at London's Gaiety Theatre. As the chorus girls in Edwardian musical comedies, they were beautiful, respectable, elegant magnets for well-heeled Stage Door Johnnies, and many married into society and wealth, pursuing significant acting careers.

In Australia a theatrical organisation founded in 1881, known as Williamson, Garner, and Musgrove, and from 1905 as J.C. Williamson Ltd. (McPherson, 2008), or JCW's, continued the gaiety girl tradition with troupes of talented female singers, dancers, and accompanists. By the end of the 1920s there were ten major theatres operating in Sydney, with JCW's imported productions and home-grown melodrama, vaudeville, and revue dominating the business. But theatrical entrepreneurship was a risky affair and this vibrant scene was devastated by the Great Depression, foreign cinema, and entertainment taxes, so that by 1935 there were only two commercial theatres left, no major drama touring companies, and few European style little theatres. But the Gaiety Girls kept performing in reviews during and after World War II, weathering sporadic and erratic attempts to revive live theatre until the whole scene changed again in the 1950s – a period of post-war reconstruction and the **darkest decade**[1] of homophobia in Australia.

Several other Gaiety theatres had sprung up around Australia. Sydney's, with two shows daily at "dinkum prices", opened its doors in 1880, but in March 1904, the Melbourne *Argus* quoted a Public Health Board enquiry into the safety of Sydney theatres as saying:

This theatre is in most unsatisfactory condition, especially so as regards its position relative to hotel and steam boilers under the building, general arrangement, means of egress, and the details of construction. Radical structural alteration is required to render the building safe for public use.

Pride and prejudice

Inaugurated in 2008, its twenty-first century **namesake**[2] has nothing to fear from the health inspector, but its mission statement reflects the fearsome prejudice that continues to blight the lives of many GLBTI (Gay, Lesbian, Bisexual, Transgender, Intersex) people. Its stated aim is to champion "theatre that is inclusive of gay and lesbian characters" adding, "visibility through performance can be a powerful tool to counteract prejudice and to reinforce pride within the GLBTI community."

The **Victorian Gay and Lesbian Rights Lobby**[3] believes that 84 per cent of gay men, lesbians, and bisexual Victorians have been discriminated against because of their sexuality, noting that in a **study**[4] of 5500 GLBTI Australian people nearly 70 per cent said they modify their daily activities, fearing prejudice and discrimination (Pitts, Smith,

Arabella

Mitchell & Patel, 2006). And yet, children of GLBTI parents, children and adolescents who are GLBTI, and GLBTI adults including colleagues are now more visible in our workplaces with the increased likelihood of coming out. With that improved visibility come tests of stereotypes, heterosexism, and homophobia (Bowers, Plummer & Minichiello, 2005).

Lenses

Heterosexism is a system of attitudes, bias and discrimination favouring opposite-sex sexuality and

relationships (Jung & Smith, 1993). It can include the view that everyone is "really" heterosexual and that homosexuality is a lifestyle choice or preference that is amenable to change, or a political statement, or that only opposite-sex attractions and relationships are "normal" and for that reason, superior. At one extreme, heterosexist and homophobic lenses tend to view GLBTI people only in sexual orientation and minority subculture terms, disregarding their other characteristics, attributes, and achievements. At the other extreme, heterosexism and homophobia can influence us subtly, like a habit that is so much a part of us that we hardly know it is there.

The chains of habit are generally too small to be felt until they are too strong to be broken. Samuel Johnson

Culturally effective health care policy, administration, practice and education see the development of mutually respectful dynamic relationships between providers (**Bowen, 2009**)[5] and GLBTI consumers (Crisp, 2006) through consciously directed awareness, knowledge, skills and practice. Transcending the level of the "gay friendly" doctors' surgery, all family structures are honoured and none are idealised. Sexual minorities are afforded comparable status to other minority groups in environments, actions, materials, routines and language that include unconditionally students, staff, clients, and family members who are GLBTI.

Through its lens marked "values", our Association's **Code of Ethics**[6] sees members who "do not discriminate on the basis of race, religion, gender, sexual preference, marital status, age, disability, beliefs, contribution to society, or socioeconomic status." According to Frazier (2009) drawing on **Lee (2002)**[7], such non-discriminatory practice includes creating alliances and fostering dialogue between professional colleagues irrespective of sexual orientation, providing safe environments for GLBTI youth, helping to raise awareness of the role of communication in achieving social justice in schools in particular, and promoting peaceable language and peer support in delivering services.

One step at a time

For our profession, culturally effective practice in GLBTI contexts can be achieved one step at a time with all of us promoting small changes that can help build appreciable improvements for clients and their families.

We can start with open, affirming, and inclusive intake forms and protocols that do away with Mother and Father in favour of Parent/Guardian 1 and Parent/Guardian 2, or Caregiver 1 and Caregiver 2 for all clients.

Case-history taking procedures can be modified with respect to privacy issues if necessary and to include gender/orientation-neutral language. The clinician can make sure to find out what the child calls each parent, how the parents refer to each other, the significance of the child's surname, and how family identity has been constructed. We need to be aware and respectful of possible facilitators of and barriers to the construction of family identity in the particular family concerned, including the roles played by GLBTI parents' parents, the child's non-biological and biological parents, siblings and the wider community.

From the child's perspective we need to appropriately acknowledge the contribution and standing of both, or all their parents, and respect the validity and significance of the couple relationship, and extended family relationships, in both nuclear and blended families. It is important too to ascertain who the family would like to be involved in

intervention planning and to respond adaptively if initial decisions change.

It is a fact of case-history taking that the whole story does not always come out in the first encounter and parents, caregivers and clients often tell us crucial information following a period of learning to trust us. Given the negative experiences that many GLBTI people and their allies experience in health settings, it may be reasonable to review the history some time later and to ask whether they have anything they would like to add.

Assessment and therapy materials can be appraised by clinician and family for heterosexist terminology, language, and images.

In our professional and private lives, we can make it a habit to model inclusive and affirming conduct, being open in rejecting comments that sometimes pass for humour, that disparage, denigrate, demean, and devalue people's heritage or identity.

Habit is habit, and not to be flung out of the window by any man, but coaxed downstairs a step at a time. Mark Twain

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Links

1. http://connection.ebscohost.com/c/articles/359027/ darkest-decade-homophobia-1950s-australia
2. http://www.gaietytheatre.com.au
3. http://www.vglrl.org.au/index.php
4. http://www.glhv.org.au/files/private_lives_report_1_0.pdf
5. http://www.speech-language-therapy.com/ webwords32.htm
6. http://www.speechpathologyaustralia.org.au/about-spa/ code-of-ethics
7. http://www.asha.org/Publications/ leader/2002/020402/020402f.htm

Webwords 41 is at http://speech-language-therapy.com/ webwords41.htm with live links to featured and additional resources.

Our Top 10 resources for working with children from culturally and linguistically diverse (CALD) backgrounds

Multicultural Interest Group (Victorian Branch)

1. Hanen resources

The Hanen Centre is based in Canada and it aims to develop parents' and professionals' knowledge and skills so they can support children to develop language and literacy skills. There are several parent training programs that speech pathologists are trained to deliver to parents and other early childhood professionals. There are also a range of resources (books, handouts, and DVDs) that supplement these parent training programs. The Hanen website provides lots of information and resources about developing children's language and literacy skills. The resources are very user-friendly and are appropriate to use with parents and families from a range of backgrounds. Refer to: http://www.hanen.org

2. Play assessment using the Symbolic Play Test

The *Symbolic Play Test* by Marianne Lowe and Anthony J. Costello is a standardised assessment tool which allows observation and recording of a child's play skills (1–3 years) in a variety of scenarios. The test provides an "objective indication of a child's early concept formation and symbolisation – abilities that precede and develop alongside receptive and expressive language". Available for purchase from GL Assessment: http://shop.gl-assessment.co.uk/home.php

3. Boardmaker

Boardmaker is a computer software program that allows you to generate pictures for hundreds of vocabulary items. There is a function on the program that allows the label for the picture to be translated into several different languages. This can be useful when using pictures as either visual supports for children or as a communication device. It is also useful for generating articulation targets in other languages. Available from: http://www.spectronicsinoz.com/

4. Internet resources

Websites such as Wikipedia, www.ethnologue.com, and http://linguistlist.org/ are useful in providing information about different languages and cultures. The language resource area of the Linguist List website is: http://linguistlist.org/langres/index.cfm The website also has an "ask a question" function: http://linguistlist.org/ask-ling/.

The Listening Room (http://www.hearingjourney.com/Listening_Room) provides a steady stream of free activities and resources to support the development of speech, language, and listening skills in children, adolescents, and adults with hearing loss. Activities are useful for working with all children with language delays including children from CALD backgrounds. Pictures and activities support vocabulary development, oral narrative skills, and more.

The Listening Tree (www.listeningtree.ca) website has lots of activities that can be used for both preschool and school aged children. There is a registration cost of $50 in order to be able to access all the activities.

5. Local CALD playgroups and library storytimes

Many libraries hold story time sessions for preschool children in different languages (check with your local library for details). Many playgroups are also run for families from

different CALD backgrounds. To receive information about playgroups in different local government areas contact the local maternal and child health nurses, the Playgroup Association in each state, or local government.

6. Clinical guidelines from Speech Pathology Australia and the Royal College of Speech and Language Therapists

The clinical guidelines *Working in a Culturally and Linguistically Diverse Society* (Speech Pathology Australia) and *Good Practice for Speech and Language Therapists* (Royal College of Speech and Language Therapists) provide information and best practice guidelines. http://www. speechpathologyaustralia.org.au/; http://www.rcslt.org/ members/publications/linguistic_minorities

7. MacArthur-Bates Communicative Development Inventories (2nd edition)

Parents document a child's understanding and use of early vocabulary, symbolic gesture, and complexity of utterances. Vocabulary items are separated into semantic categories such as animal names, household items, and action words. The *CDI: Words and Gestures* is standardised for children aged 8–18 months. *The CDI: Words and Sentences* is standardised for children aged 16–30 months. Available from Brooke Publishing: http://www.brookespublishing. com/sitemap.htm

8. Rosetti Infant-Toddler Language Scale

The *Rosetti Infant-Toddler Language Scale* assesses the language skills of children from birth through to 3 years of age. The scale assesses preverbal and verbal areas of communication and interaction through a combination of direct observation and caregiver report. It examines several areas including: interaction-attachment, pragmatics, gesture, play, language comprehension, and language expression.

9. Bilingual Options website and regular Snippets newsletter

The Bilingual Options website (www.bilingualoptions.com. au) is designed and operated by Susanne Döpke who has extensive academic, clinical, and personal experience working with children growing up in CALD backgrounds. This website provides information, resources, and links to information for families raising children in bilingual backgrounds. Susanne also puts together the *Snippets*

newsletter, which contains a range of useful articles and information, including information about local services for families living in Melbourne.

10. Learn to Play: A Practical Program to Develop a Child's Imaginative Skills, Karen Stagnitti

This is a practical program designed to develop the imaginative play skills of children up to 6 years of age with developmental delay, autism spectrum disorder, language disorder, and other disabilities. It includes an imaginative play checklist and parent checklist. The assessment is called the Symbolic and Imaginative Play Developmental Checklist (SIPDC). This assessment provides a basis for planning an intervention program that will facilitate the development of a child's pretend play. Published by Co-ordinates Publications, 1998. Available for purchase through therapybookshop.com.
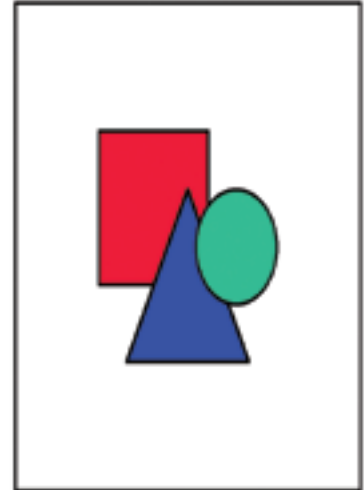
The Multicultural Interest Group (MIG) provides a forum for information sharing and problem solving around culturally inclusive practice for working with culturally and linguistically diverse communities. We do this through inviting different speakers to a meeting, discussing and reviewing journal articles, or sharing resources around a particular issue.

MIG is open to all allied health and other professionals with an interest in this area. We do not have regular meeting dates, instead organise meetings as topics arise or as suggested by members. If you are interested in having your details added to our email distribution list please contact Joanna Chalkley on jchalkley@mcm. org.au.

Correspondence to:
Joanna Chalkley
email: jchalkley@mcm.org.au

Around the journals

Speech perception in noise by mono-, bi-, and trilingual listeners

Tabri, D., Chacra, K. M. S. A., & Pring, T. (2011). Speech perception in noise by monolingual, bilingual and trilingual listeners. *International Journal of Language and Communication Disorders*, *46*(4), 411–422.

Carren Mitchell

Previous research has revealed that bilingual speakers perform differently to monolingual speakers in perceiving speech in noisy environments. However, monolingual and bilingual speakers perceive speech similarly in quiet conditions. The authors of this article investigated speech perception in noise of monolingual, bilingual, and trilingual adults. All participants had normal hearing on audiological evaluation and were required to be highly proficient in reading and writing English. All bilingual participants' native language was Arabic and second language was English. All trilingual participants spoke Arabic, French, and English fluently. Participants were administered the Speech Perception in Noise (SPIN) test at five different noise levels.

The results obtained confirmed the results of other studies, that is, monolingual listeners performed better in noise than bilingual listeners, and they both performed similarly in quiet conditions. The trilingual speakers had more difficulty in noise than bilingual speakers, although these results were not significant.

These results indicate that noise levels of learning and working environments should be considered when they include children or adults who speak two or more languages, regardless of levels of language proficiency.

Parent and teacher reports of the vocabulary of Chinese children with hearing impairment

Lee, K., Nok Chiu, S., van Hasselt, C.A., & Tong, M. (2009). The accuracy of parent and teacher reports in assessing the vocabulary knowledge of Chinese children with hearing impairment. *Language, Speech, and Hearing Services in Schools*, *40*, 31–45.

Joanna Chalkley

Accurate assessment of a child's language skills is an ongoing issue when working with children from culturally and linguistically diverse (CALD) backgrounds. The use of parental reporting usually forms a part of any speech and language assessment. In this article evidence is provided on the efficacy of using parental report as part of an assessment with children from a Cantonese speaking background. This study aimed to investigate the accuracy of parent and teacher report of the vocabulary knowledge of Cantonese speaking children with profound hearing impairment.

There were two groups of 47 children in the study; one group provided reports from the children's mothers and the other group provided reports from 21 teachers. The adults were given a background questionnaire and were asked to rate their child's knowledge of a list of words (the

same words included in the standardised assessment). The results from this rating were compared to the child's results on a standardised assessment of vocabulary knowledge.

The study found that both adult groups reported children's performance with satisfactory accuracy when compared with the performance on the standardised assessment of vocabulary knowledge. The study also looked to see if there were any factors that would influence the accuracy of reports. They found that the mother's education level, occupation, and socioeconomic status and the teacher's teaching experience were not significant factors in the accuracy of the ratings provided.

The study raised issues regarding the lack of validated language tests available in the Chinese community and the lack of evidence in relation to using parent reporting as a tool for assessing the language skills of the Chinese speaking population. The MacArthur-Bates Communicative Development Inventories (CDI; Fenson et al., 1996) was used as an example of a parent reporting tool in measuring word knowledge.

The authors emphasised that given the particular population they examined (children with profound hearing impairment from Cantonese speaking backgrounds), it is essential to be cautious about generalising these results to other populations. However, the study showed that adult reporting can be a valuable tool that can assist in determining individual therapy goals and therapy progress and provide information about the vocabulary knowledge of an individual. Use of parental and teacher reporting can assist in assessing the vocabulary knowledge in the Cantonese speaking population and can be added to the tools we can use when working with children from CALD backgrounds.

Monolingual versus multilingual acquisition of English morphology

Nicholls, R.J., Eadie, P.A., & Reilly, S. (2011). Monolingual versus multilingual acquisition of English morphology: What can we expect at age 3? *International Journal of Language and Communication Disorders*, *46*(4), 449–463.

Anneliese Hastings

I consider that the authors should be praised for their ground-breaking study. Nicholls, Eadie, and Reilly have provided us with a study that is beautifully structured and truly significant in its sampling of English plus one of 31 different languages. The sample size was also large – 74 bilingual children matched with 74 monolingual children.

The clinical implications to be drawn from this were of course more complicated than the nutshell that the bilingual children's morphological skill levels were generally at a lower level of development in English compared to their monolingual peers. The study also showed a great diversity in mastery rates of English morphemes for both groups – the bilingual children and the monolingual children.

Further, Nicholls et al.'s work suggests that the morphemes of progressive, locative, third person singular,

and regular plural noun were learnt well by both groups. These are now the forms I will take most notice of in my clinical work.

Results also showed that the two groups followed the same path – the bilingual group taken as a large group was not deviant. When looking at an individual's learning curve, I still feel that interference from the other language can be significant – for instance, use of pronouns where the language of Tagalog is dominant.

There were many similarities in the developmental pathways followed by both groups (bilingual and monolingual) during the chronological age periods sampled. The headline that readers will remember is that the bilingual children at age 3, taken as a group, were generally at a lower level of development. This of course, poses many more questions, such as "What would we see at age 5?". As I value bilingualism, I want to highlight, as the authors noted, that this study did not look at many factors including combined language skills or the social sphere. Being able to talk to Oma or Nonno in their language is priceless. I will still be advocating bilingualism as strongly as before. Now I will have information that is much more statistically valid.

Resource reviews

Speech pathology resources

LaPointe, L.L. (2001). (Ed.). *Aphasia and related neurogenic language disorders*. (4th ed.). New York: Thieme. ISBN: 978 1 60406 261 8; pp. 286 including the index; A$64.95. http://www.elsevierhealth.com.au/

Natalie Ciccone

This book presents "a collection of ideas and scholarship on brain damage and communication loss" and assemblies "a group of experts on brain based disorders of communication who have been there; in the clinics, hospitals, research labs, and classroom" (p. ix). The book focuses primarily on aphasia, providing an overview of issues related to and research on aphasia and its clinical management. However, its final three chapters address related cognitive-language disorders.

The authors of each chapter are recognised experts within their field, resulting in a book that covers a wide range of topics, all of which are relevant to the management of aphasia and related cognitive-language disorders within different clinical contexts. The book addresses foundational topics such as brain function and the classification of aphasia; it also focuses on the impact of communication disorders on an individual's life and in doing so has a client-focused approach that concentrates on the humanistic nature of the language disorder.
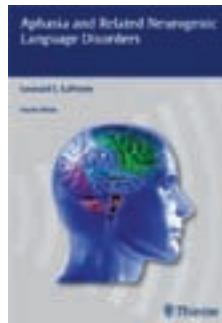
The book is divided into three sections: Section I: Foundations and Practicalities; Section II: Assessment and Treatment; and Section III: Related Cognitive-Language Disorders.

The first section addresses brain basics, humanistic basics, aphasia theory, models and classification, practices in acute care settings, neuroimaging, multicultural and multilinguistic issues, and enhancing quality of life. The second section focuses on assessment and treatment related to: naming and word retrieval, comprehension, reading and writing impairments, syntax and linguistic based approaches, pragmatics and discourse, social and life participation approaches, assistive technology, treatment effectiveness and evidence based practice, and resources for family and clinicians. The final section contains one chapter on each of the following areas: right hemisphere damage, dementia and traumatic brain injury, blast injury, and multisystem injuries.

Each chapter includes a detailed summary of the key issues related to the topic and provides a concise review of the literature within the field. Chapter reviews and test questions are available at the end of chapters to support learning of the material. The chapters provide a useful summary of the key issues and provide a starting point for clinical management. This book would make a good, clinically relevant text for an undergraduate speech pathology course on neurogenic communication disorders or for clinicians working with people with aphasia or related cognitive-language disorders who would like to refresh their knowledge.

ACQ notes to authors

ACQuiring Knowledge in Speech, Language and Hearing is a major publication of Speech Pathology Australia and provides a professional forum for members of the Association. Material may include articles on research, specific professional topics and issues of value to the practising clinician, comments and reports from the President and others, general information on trends and developments, letters to the Editor and information on resources. Each issue of *ACQ* aims to contain a range of material that appeals to a broad membership base.

ACQ is published three times each year, in March, July and November.

Issue	Copy deadline (peer review)	Copy deadline (non-peer review)	Theme*
July 2012	6 December 2011	1 February 2012	Working with people with complex communication needs
November 2012	14 April 2012	30 June 2012	Technology and speech pathology
March 2013	3 August 2012	15 October 2012	TBA

* articles on other topics are also welcome

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Material submitted must be your original work. Any direct quotations or material used from other sources must be credited in full. If copyright clearance is required to use material included in your article, please supply evidence that this has been obtained.

With rare exceptions, we do not publish material that has already been published.

Articles will be checked by a copy editor to ensure consistent presentation and standard of English.

Length

Articles should not usually exceed 3500 words (including tables and references). This is equivalent to approximately 11 double-spaced pages. Longer articles may be accepted, at the discretion of the editors. For further information go to http://www. speechpathologyaustralia.org.au

Format

The article should be submitted electronically via email (as an attachment). One hard copy and a copy on disk (preferably in Microsoft Word) is required if the article contains symbols (e.g., phonetic font).

The title page should contain the title of the article, the author's name, profession, employer, contact phone number and correspondence address, as well as a maximum of five key words or phrases for indexing. Please provide brief biographical details (up to 15 words) for all authors.

The format must be double spaced with 2.5 cm margins, in a serif face (such as Times or Courier), each page numbered sequentially.

CDs must be clearly marked with file name, author's name and program used, including version number and whether PC or Macintosh (e.g., MS Word 2007). Each table or figure must be in a separate file on the disk. Do not incorporate figures or tables within the text of the article. Formatting must be kept to a minimum. Do not use tabs, bold or other highlighting of the text. References must appear at the end of the article. The first line of each

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Peer review

Articles submitted to *ACQ* generally undergo a double-blind peer-review process.

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Style

Clear and concise writing is best. Use short sentences and paragraphs and plain English.

Reproduce any quotations exactly as they appear in the original and provide the page number(s) for the pages you have quoted from.

References, which should be kept to a minimum, should follow the American Psychological Association (APA 6th ed.) style.

The title should be kept as short as possible (maximum 80 characters).

Headings should be short. Within the article a maximum of two levels of headings should be used. For first level headings use all capitals, centred with one line space above and one line space below. For second level headings use a capital letter for the first letter of the first word only, centred with one line space above and one line space below.

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If there are to be tables or figures within your article, these should be printed on separate sheets with a clear indication of where they are to appear in the article. All tables and figures should be numbered. Figures should be presented as camera-ready art. Do not incorporate tables or figures within the text of the article. Digital images should be sent as uncompressed TIF or EPS files.

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Please include an abstract of approximately 100 words describing your article.

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