Emergent literacy performance across two languages: Assessing four-year-old bilingual
children

Marleen F. Westerveld
Griffith University, Australia

Correspondence to:

Marleen F. Westerveld, PhD

School of Rehabilitation Sciences

Griffith University

Gold Coast Campus

Queensland 4222

Australia

Phone: +61 7 56787658

Email: m.westerveld@griffith.edu.au

Keywords: Bilingual, story retelling, story comprehension, Samoan, children, emergent literacy, phonological awareness, composite scoring

Acknowledgements

The author would like to thank the parents, children, and teachers for their enthusiasm and support for this project. Thanks are extended to Caroline Fuatavai and Mabel Fa'ata'ape for their invaluable assistance with the Samoan language tasks and analyses. The research was partly funded through a Massey University Research Fund grant.

Emergent literacy performance across two languages: Assessing four-year-old bilingual children

Abstract

There are few emergent literacy assessments available for bilingual children. This study investigated the usefulness of a screening battery of oral language and print-related measures as an assessment tool for bilingual Samoan-English speaking children. A total of 18 children were recruited from three Samoan language immersion kindergartens (Aoga Amatas) in Auckland, New Zealand. A control group of 15 monolingual children were recruited from neighbouring kindergartens. Both Aoga Amatas and the kindergartens run programmes that are based on Te Whāriki – the New Zealand National Early Childhood Curriculum – regardless of the language spoken. The bilingual children were assessed on two occasions, once in English and once in Samoan by undergraduate speech pathology students, who were fluent in Samoan or English, on measures of story retelling and comprehension, phonological awareness, letter name knowledge, and vocabulary. Results were analysed for each language, and across languages using composite scoring, and showed that the bilingual children's performance in one language (either Samoan or English) significantly underestimated their composite language performance. Furthermore, the bilingual children significantly outperformed their monolingual peers on receptive vocabulary when composite scoring was used. Practical implications of these findings are outlined.

Keywords: bilingual, story retelling, story comprehension, Samoan, children, emergent literacy, phonological awareness, composite scoring

It has been well established that children need a solid oral language foundation and early print-related skills for successful literacy acquisition (e.g., Catts et al. 1999; NICHD 2005). These *emergent literacy* skills develop prior to beginning reading acquisition, serve as precursors to fluent and skilled reading (decoding as well as comprehension), and include phonological awareness, letter knowledge, and oral language skills (vocabulary, grammar, and storytelling). Recognising the importance of emergent literacy skill development, a body of research has focused on creating sensitive assessment measures for early identification of delayed or disordered development in each or all of these areas in preschool-aged children (Cabell et al. 2009; Justice, Invernizzi, and Meier 2002; Westerveld, Gillon, and Boyd 2012).

Most of the research addressing assessment of emerging literacy skills in the preschool population has focused on monolingual English-speaking children. Much less is known about English-language learning children who grow up speaking a first language other than English. With the exception of English-Spanish tasks, very few assessments are available for bilingual children (Jordaan 2008). This is concerning, because bilingual children often show academic achievement well below their monolingual peers, despite the recognised cognitive advantages of learning two languages (Bialystok 2007). Therefore, early identification of emergent literacy difficulties in this population, preferably prior to school-entry, becomes crucial. To enrich our knowledge of emergent literacy abilities in bilingual populations, the current study addresses the emergent literacy skills of bilingual Samoan-English children. Samoans are the largest Pacific ethnic group in New Zealand, making up 49% of the Pacific population (113,000) (Statistics New Zealand 2007) and also have large immigrant communities in Australia and the USA.

When assessing bilingual children's emergent literacy performance, different assessment strategies can be utilized. One frequently used option is to assess the child in English, regardless of the child's first (or home) language. The obvious limitation is that poor

performance in emergent literacy in English may simply reflect dual language learning or limited English proficiency (e.g., Schaerlaekens, Zink, and Verheyden 1995; Thordardottir et al. 2006). Alternatively, cross-linguistic evaluation of a child's emergent literacy performance can be obtained by testing the child in both languages, i.e., English as well as the child's home-language. This type of assessment potentially enables the examiner to determine the child's relative proficiency in either language, but may fail to provide an accurate picture of the child's overall performance across languages (e.g., see Hemsley, Holm, and Dodd 2010). To address this issue composite scoring for lexical development was first developed by Pearson, Fernández, and Oller (1993) and has shown promising results in later studies (Hemsley et al. 2010). The current study will use a combination of cross-linguistic assessment procedures and composite scoring in an attempt to adequately and sensitively describe the emergent literacy skills of bilingual Samoan children.

Assessment of Samoan children's emergent literacy skills

There has been limited research investigating the language and literacy skills of young Samoan children (Clay 1970; Hamilton and Gillon 2006; Hess, Woll, and Boles 2010; Tagoilelagi-Leota et al. 2005; Toloa, McNaughton, and Lai 2009). Most of this research has stemmed from an urgent need to describe typical developmental language patterns in young Samoan children to promote earlier identification of language difficulties. Generally speaking, children from Pasifika families (of which Samoans are the largest cultural group) perform poorly on measures of speaking, listening, and literacy compared to their peers from mainstream cultures during their primary school education, both in New Zealand and in Australia (e.g., Flockton and Crooks, 2005). To better understand the potential complexity of learning Samoan and English, a brief overview of the Samoan language system is presented. This is followed by a discussion of the similarities and differences between these two

languages as they relate to areas of emergent literacy, more specifically phonological awareness, letter name knowledge, and story comprehension and retelling abilities.

Characteristics of the Samoan language / writing system (Pratt 1984).

The Samoan phonemic inventory consists of the following: stops /p, t, ʔ/; nasals /m, n, ŋ/; fricatives /f, s, v/, approximant /l/, and vowels /a, e, i, o, u/. Each vowel has a short and a long pronunciation. In addition, the phonemes /h, k, and r/ are used in introduced words (such as *koala*). The Samoan language has a very consistent relationship between phonemes and graphemes and the traditional Samoan alphabet contains the following 14 letters (with the letter name in brackets): a, e, i, o, u, f (fa), g (nga), l (la), m (mo), n (nu), p (pi), s (sa), t (ti) and v (vi), as well as a glottal stop (‘) that is used before or between vowels. The pronunciation of Samoan consonants is similar to English, except for the g, which is pronounced as /nga/ and may be used in word-initial or syllable-initial position.

Pronunciation of the vowels is similar to the vowels used in continental languages. However, the vowels used in vowel clusters retain their own characteristics. As a result, Samoan diphthongs are different to English diphthongs in which one vowel glides into another. Finally, the Samoan language has a regular, open syllable structure with plausible word shapes being CV, CVV, or CVVV. There are no consonant clusters¹.

Phonological awareness and letter knowledge

In general, research into the phonological awareness (PA) skills of bilingual preschool-age children shows strong bidirectional connections between the child’s first language (L1) and his or her second language (L2) (e.g., Dickinson et al. 2004). This implies that PA skills learned in one language should easily transfer to the second language even after a relatively short period of exposure, at least in typical language learners. This hypothesis was supported by Hamilton and Gillon (2006) who investigated the PA skills of 10 bilingual Samoan

¹ For a more detailed description of the Samoan phonology, refer to Ballard and Farao (2008).

primary school-aged children (ages 5;06 – 7;03). Results from this study showed comparable levels of PA across languages on phoneme-level tasks. These children had already commenced formal schooling, however, so it is not clear if these results would generalise to preschool-age children attending Samoan language immersion kindergartens (referred to as *Aoga Amata* in Samoan). Tagoilelagi-LeotaGlynn et al. (2005) investigated the bilingual development of 49 Pasifika students (including 23 Samoan and 26 Tongan children) over the transition from total immersion kindergarten to mainstream (English-medium) primary school. Results indicated that the children were able to identify an increasing number of letters in both languages during their time at kindergarten to an average of 11-14 letters at school entry (which is age 5;0 in New Zealand). Unfortunately PA was not explicitly assessed in this study, so no conclusions can be drawn as to how the more regular structure of the Samoan language may affect children's PA skills prior to starting school.

Story retelling and comprehension ability

Story retelling ability in preschoolers has been found to predict later language development and reading comprehension (Bishop and Adams 1990). Story retelling is a complex decontextualized process that children frequently engage in in the classroom (Milosky 1987). It requires a child to activate a mental model or representation of the typical structure of a story, to retrieve appropriate vocabulary, and to apply morpho-syntactic rules at both sentence and text-level (Bishop 1997). Although much research has focused on the effectiveness of tasks to assess the story retelling abilities of monolingual children (e.g., Justice et al. 2010; Westerveld, Gillon, and Boyd 2012), much less is known about the story retelling of preschool-aged children who are bilingual (Uccelli and Páez 2007; Tagoilelagi-Leota et al. 2005). Results from Tagoilelagi-Leota et al.'s study into the retelling abilities of Samoan and Tongan bilingual children showed improving and relatively equal skills in both languages in the 6 months prior to school-entry. Unfortunately only total scores are reported,

based on comprehension, vocabulary, grammatical complexity, and story organisation. More details are reported by Uccelli and Pérez (2007), who investigated the oral narrative skills of bilingual Spanish/ English children as they progressed from kindergarten to first grade. Significant correlations were found between English and Spanish performance on measures tapping children's story structure knowledge (i.e., story quality, including sequence, story elements, and affect) at kindergarten and Year 1 levels. In contrast there were no correlations between children's language scores (verbs, conjunctions, referencing) in English and Spanish. These results suggest cross-language transfer of underlying mental representations, such as story structure knowledge. None of these studies report on story comprehension, which is surprising given the importance of story comprehension to the story retelling process (see Westerveld, Gillon, and Boyd 2012, for a discussion).

Home language and literacy environment

In addition to determining bilingual children's emergent literacy skills across oral language and print-related measures, it is important to consider family-based factors that may influence these children's early literacy development. Apart from socioeconomic status and parental English proficiency, the importance of the children's home literacy environment cannot be underestimated (Boudreau 2005; Sénéchal et al. 2008). For example, a study by Sénéchal et al. (2008) found significant correlations between frequency of shared book reading and four-year-old children's expressive (vocabulary) and receptive (grammar) language skills.

The current study

The purpose of the present study was to investigate the usefulness of a battery of emergent literacy measures as a tool for assessing preschool-age bilingual children. It also sought to better understand Samoan children's performance in emergent literacy skills across languages, i.e., Samoan and English. Information about the home language and literacy

environment of the bilingual participants was obtained through parent questionnaires. The following research questions were asked:

1. How do Samoan bilingual children perform on the emergent literacy tasks in English, Samoan, and across languages?
2. Are there differences in performance between the Samoan bilingual children and their monolingual peers on measures of emergent literacy a) in English, and b) using composite scoring procedures?
3. Are there differences in home literacy practices between the two groups of children?

Method

Design

The study used a descriptive within and between group design. First, we investigated the bilingual children's emergent literacy skills in Samoan and English. Second, the bilingual participants' emergent literacy skills were compared to those of a control group of monolingual English-speaking children attending kindergartens in the same geographic areas, to control for socio-economic status.

Participants

The bilingual Samoan children were recruited from three Samoan language immersion kindergartens, known as Aoga Amatas, in Auckland, New Zealand (NZ). All three kindergartens are located in low to mid socio-economic areas as determined by the New Zealand Ministry of Education decile rating system. These early childhood centres run Samoan immersion programmes that are based on Te Whāriki, the New Zealand Early Childhood Curriculum (Ministry of Education 1996). The following four principles form the framework for all teaching and learning in the Early Childhood Curriculum (regardless of the language spoken): Empowerment, Holistic Development, Family and Community, and Relationships. Teachers at the Samoan language immersion programmes are guided by the

“Samoan in the English Curriculum Guidelines” (Ministry of Education 2009), and aim to embed Samoan cultural values to provide “an authentic context for learning” (p. 19) and promote “gagana Samoa” (the language of Samoa). Therefore, the Samoan language is the main medium of communication/instruction at these Samoan immersion kindergartens.

Consent forms were sent home to all parents of children who met the following criteria: a) age 4;0 – 4;11, b) spoke Samoan, c) had no history of speech and language difficulties, and d) were not currently receiving any specialist services, such as speech therapy. A total of 19 consent forms were returned. However, one child spoke very little Samoan and did not want to participate in the tasks. Therefore, the performance of 18 children will be reported. There were 7 girls and 11 boys, with a mean age of 53 months.

Information about the participants’ home language use was obtained via a questionnaire (adapted from Hemsley et al. 2010). The questionnaire was available in English and Samoan and parents were assisted in completing the questionnaire by the kindergarten teachers (who were bilingual) when needed. Results showed that all parents felt it was important or very important that their children learned or continued to speak Samoan. Although all children were exposed to both English and Samoan at home, the children’s ability to speak Samoan and/or English, as rated by their parents, varied. Table 1 lists some of the questionnaire results.

A control group of 15 monolingual English-speaking children (5 girls, 10 boys, M age: 54 months) was recruited from public kindergartens that were located in the same geographic areas as the Aoga Amatas. These kindergartens also run programs based on Te Whāriki. The children were raised in English-speaking homes as indicated on a parent questionnaire and were from NZ European (8 children), Pasifika (3 children), and Māori (NZ or Cook Island) ethnic descent. There were no differences between the two groups of children on age ($p = .386$).

Insert Table 1 here

Procedures

All children were assessed in a quiet location in their kindergarten by undergraduate speech pathology students who were trained in the assessment procedures by the author. The monolingual English speakers were assessed once (in English), whereas the Samoan children were assessed on two occasions (counterbalanced), once in Samoan and once in English. The Samoan assessments were conducted by a bilingual undergraduate speech-language therapy student, whose Samoan language ability was considered excellent by the Samoan kindergarten teachers. All sessions lasted approximately 45 minutes and were digitally recorded.

Home literacy questionnaire

Information about the participants' home literacy environment was obtained via a questionnaire (adapted from Boudreau, 2005). The following questions were analysed for the current study: 1) How often do you or other members of your family read to your child in a typical week: a) at bedtime, b) at other times; 2) Estimate the number of children's books that are available in your household; and 3) How old was your child when you started reading picture books to him or her? The questionnaire was available in English and Samoan and parents were assisted in completing the questionnaire by the kindergarten teachers when needed.

Emergent literacy tasks

Letter name knowledge in English.

For this task, children were asked to identify letters by name, using a computer administrated task developed by Carson, Gillon, and Boustead (2011). Children were presented with six letters in a three-by-two grid on a computer screen and asked to point to the letter-name requested by the computer (i.e., oral instructions recorded by a native New Zealand speaker,

for example “Show me the letter *p*”). Following two practice items (*j* and *r*), a total of 18 letter names were assessed in lower case Century Gothic font (*m, s, k, b, n, f, d, h, p, t, w, g, c, z, l, q, v, y*).

Letter name knowledge in Samoan.

The task was modelled on the English letter name knowledge task. However, instructions were recorded by a native Samoan language speaker. Because of the limited number of letters in the Samoan alphabet, all vowels were included, as well as two introduced letters (*k* and *r*). After two practice items (*a* and *l*), the following 18 letter names were tested: *m, s, o, p, n, f, e, h, g, t, u, v, o, r, l, a, i, k*.

Initial phoneme identification in English.

The computer administered task developed by Carson et al. (2011) was used. The children were asked to point to a picture of a word, from a choice of three, that started with the same initial phoneme as the target word. For example, the computer showed the child a picture of a Seal “This is my friend Seal. Seal starts with a /s/ sound. What word starts with a /s/ sound? bee, sun, tent?”. The test consisted of two practice items and ten test items. All words consisted of CV or CVC combinations.

Initial phoneme identification in Samoan.

This task was also modelled on the English task and the instructions were pre-recorded in Samoan. The test items are included in the Appendix. As shown in the Appendix, all words consisted of CVV or CVCV combinations (as there are no CVC combinations in Samoan). The items/words were considered to be easily recognisable by the children’s Samoan kindergarten teachers.

Story retelling and comprehension in English.

For this task, we used the story retelling and comprehension task *Ana Gets Lost* (Westerveld and Gillon 2010; Westerveld, Gillon, and Boyd 2012). In this task, children are asked to

listen twice to an audio-recording of a novel story (Ko au Na Galo; Swan 1992), while looking at the pictures of a story book on a computer screen. Following the first exposure to the story, children are asked comprehension questions, yielding a story comprehension score. After listening to the story a second time, the children are asked to retell and record the story, without the use of pictures, so that “*other children can listen to your story next time!*”²

Receptive and Expressive Vocabulary

This task was developed by Hemsley et al. (2010) and used with 4-year-old bilingual children in Australia. Permission was granted by the authors to use the task for the current study.

There are two subtests. The expressive task requires the child to label 72 colour pictures (using Microsoft ClipArt presented on individual slides in Microsoft PowerPoint©). The receptive task required the child to identify these 72 items (“Point to the watch”) out of a choice of four, again presented on individual slides in MS PowerPoint. See Hemsley et al. (2010) for a complete list of the task items. The only change in scoring for the present study pertained to the item “sultanas”; these are frequently called “raisins” in New Zealand and this answer was therefore considered correct.

The following scoring procedure was used. For the monolingual children, only correct responses were counted, yielding a receptive vocabulary (RVocab) and an expressive vocabulary (EVocab) score (max score for each is 72). For the bilingual children, similar procedures were used for the English tasks and the Samoan tasks, yielding RVocab and EVocab scores in English and RVocab and EVocab scores in Samoan. In addition, composite scores were obtained by calculating the number of correct items across languages. As explained by Hemsley et al. (2010), if a child scored an item correct in one language only, it

² For a full description of the task, please visit <http://www.griffith.edu.au/health/school-rehabilitation-sciences/staff/dr-marleen-westerveld/language-sampling-and-other-resources>.

was counted as correct and received one composite point; if the child scored an item correctly in both languages, it was counted as correct and also received just one composite point.

Maximum number of points for composite scoring is thus 72 and reported as EVocab and RVocab Composite.

Story retelling and comprehension in Samoan.

The Samoan translation of *Ana Gets Lost* (Swan, 1992) was obtained from Learning Media and recorded by a native Samoan speaker for the present study. The comprehension questions were translated from English into Samoan and asked following the first exposure to the story as per the procedures described above.

Transcription and Analysis

The digital sound files were transferred to a computer and transcribed using headphones, a foot pedal, and transcription software (Express Scribe Pro). The English story retelling samples were transcribed by undergraduate speech-language therapy students. The Samoan story retelling samples were transcribed by a postgraduate Samoan-speaking student studying Samoan and Linguistics. The first author checked all English story retelling samples. The Samoan story retelling samples were checked for accuracy of transcription by a Samoan-speaking bilingual teacher.

Story retelling and comprehension measures

Story comprehension (SC)

As explained above, the children were asked eight comprehension questions following the first exposure to the story (e.g., Who was the story about? Why did Ana have to stay home? Where did Ana go to find her parents? Why were Ana's parents happy to see her?). To ensure all children received the same information before listening to the story a second time, children were provided with the correct answer if they did not respond or if their answer was incorrect. A scoring guide was used to determine whether answers were correct or incorrect

and whether further prompts were allowed. Because the Samoan version of the story varied slightly from the English version, one question was discarded (Why did Ana get bored?) and a total of seven questions were used for analysis. Scores are reported as the number of questions answered correctly in English and/or in Samoan. In addition, a composite score was obtained for the bilingual children by calculating the number of correct responses across languages.

Story quality (SQ)

To determine the quality of the story, all stories were scored on the holistic coherence element of the story quality rubric³. Children were awarded a point for including the following critical events in the right order: 1) Ana is at home, 2) Parents have gone out, 3) Ana leaves the house to look for mum and dad, 4) She gets lost /or/ does not know what to do and cries, 5) A policeman finds her, 6) The policeman takes her home. Maximum number of points is 6.

Results

In general, the tasks were successful in engaging the children and obtaining analysable results in both languages. However, one bilingual child refused to participate in the English expressive vocabulary task. Although all children were happy to listen to the story and answer the comprehension questions, only seven bilingual children produced story retells in both languages. Four bilingual children failed to produce a story retell in either language. Five bilingual children produced in story retell in English only, and two of the bilingual children only produced a retell in Samoan. In the control group of monolingual children, three children did not produce a story retell.

Performance of the bilingual children

³ Please contact the author for a copy of the original rubric.

To answer the first research question, the bilingual children's performance was analysed on all emergent literacy measures in English, Samoan, and on composite performance (when applicable). Table 2 shows the results.

Wilcoxon Signed Ranks Tests were used to compare performance in English to that in Samoan. There were significant differences in performance on the receptive vocabulary (RVocab) task ($Z = -2.913, p = .004$) and on the letter name knowledge task ($Z = -2.428, p = .015$) with the children showing better performance in Samoan. There were no significant differences between English and Samoan on any of the other measures. For story comprehension Wilcoxon Signed Rank Test showed $Z = -1.812, p = .07$.

Next, it was investigated whether composite scoring resulted in higher scores for the bilingual children. Friedman's Tests revealed significant overall differences between the composite scores and the English and/or Samoan language scores for RVocab $\chi^2 = 32.141, df = 2, p < .001$, EVocab $\chi^2 = 25.284, df = 2, p < .001$, story comprehension, $\chi^2 = 10.92, df = 2, p = .004$, and story quality, $\chi^2 = 12.05, df = 2, p = .002$. Post-hoc analyses using Wilcoxon Signed Rank Tests showed significant differences ($p < .05$) between children's composite scores and their English language scores as well as their Samoan language scores.

Insert Table 2 here

To further examine the relationship between emergent literacy skills in English and Samoan, bivariate correlations were calculated and presented in Table 3. As shown in Table 3, there were significant positive correlations between children's performance on the receptive and expressive vocabulary tasks in English and their performance on the story retelling and story comprehension task in English. In Samoan, however, children's performance on the expressive vocabulary task (but not the receptive vocabulary task) was significantly correlated to performance on the story retelling and story comprehension tasks in Samoan.

Phonological awareness (PA) skills in Samoan also showed significant correlations with the children's performance on the vocabulary tasks in Samoan.

When investigating cross-linguistic correlations, a significant correlation was found between receptive vocabulary in Samoan and English, but not between the expressive vocabulary scores. Children's vocabulary performance in one language was not related to their performance on the story comprehension or retelling tasks in the other language. In contrast, performance on the letter name knowledge task in English was significantly related to the children's performance on the Samoan language tasks, but not the English language tasks (except for PA).

Insert Table 3 here

Bilingual versus monolingual performance

To answer the second research question, we compared the emergent literacy performance of the group of bilingual children to the performance of the children in the monolingual control group 1) in English, and 2) on the composite scores. Table 4 shows the groups' performance.

Insert Table 4 here

Mann-Whitney U Tests were used to compare the two groups on English-only scores. It was found that the monolingual children significantly outperformed the Samoan bilingual children on EVocab in English ($U = 21.00, p < .001$), RVocab in English ($U = 15.00, p < .001$), story comprehension ($U = 65.5, p = .011$), and letter name knowledge ($U = 74.5, p = .027$). There were no group differences on measures of phonological awareness ($p = .086$), and story quality ($p = .229$).

When monolingual scores were compared to bilingual composite scores, Mann-Whitney U Tests revealed that the monolingual children still outperformed the bilingual children on EVocab ($U = 70.00, p = .030$). However, there were no longer any significant

group differences on story comprehension ($U = 84.00$, $p = .067$). Moreover, the bilingual children significantly outperformed the monolingual children on RVocab ($U = 60.00$, $p = .006$). There were no group differences on the story quality measure ($p = .642$).

Home literacy questionnaire results

Finally, we investigated whether there were differences in home literacy environment for the two groups of children, based on a parent questionnaire. In response to question 1, which asked how often the children were read to at home, it was found that 33.3% of the bilingual children were ‘often’ or ‘very often’ read to at bedtime; for the monolingual children this was 73.3%. Fifty percent of the bilingual children were read to ‘often or very often’ at other times of the day; 47% of the monolingual children. These results indicate the monolingual children are more likely to be read to at bedtime than the bilingual children ($p = .037$).

When asked how many children’s books were available in the home, 50% of the bilingual children’s parents answered ‘a few’ or ‘quite a few’; the remainder of the children’s parents reported they had ‘heaps of books’ or ‘more than they could count’. Fourteen of the monolingual parents answered this question and 100% indicated they had ‘heaps’ of books or ‘more than they could count’. This group difference is significant ($p = .002$).

Finally, we asked at what age the parents started reading picture books to their children. In the bilingual group, 33.3% started reading to their child before the age of 1 (71.4% in the monolingual group), 16.7% between the age of 1 and 2, 33.3% between 2 and 3, and 16.7% after the age of 3.

Discussion

This study investigated the emergent literacy skills of 18 four-year-old bilingual Samoan/English speaking children who attended Samoan language immersion kindergartens (known as Aoga Amatas) in New Zealand. The emergent literacy tasks were specifically designed for this age-group and measured letter name knowledge, phonological awareness

(initial phoneme identification), story comprehension, and story retelling performance. They were adapted for use with Samoan children and administered in both English and Samoan. In addition, receptive and expressive vocabulary skills were assessed using a task developed by Hemsley et al. (2010). A control group of 15 monolingual four-year-old English-speaking children was recruited from kindergartens in the same geographic areas as the Aoga Amatas.

Emergent literacy skills of the Samoan bilingual children

The first aim was to describe the performance of this group of children in a) English, b) Samoan, and c) across languages, using composite scoring where possible. Except for the story retelling task, the assessment tasks were generally successful in eliciting analysable responses from the children in both languages. Although all children listened to the story and attempted to answer the comprehension questions, 4 out of the 18 children failed to produce a story retell in either language (22.2%). This percentage was similar in the monolingual control group, with 3 out of 15 children (20%) failing to produce a story. This percentage is higher than we expected, based on our previous research. To illustrate, Westerveld, Gillon and Boyd (2012) found that 12% of the four-year-old participants either refused to retell the story or produced retells that were too short for analysis. The most plausible explanation to the lower than expected compliance rate of the participants thus pertains to the low socio-economic background of the participants (e.g., Crooks et al. 2009), rather than the fact that the children were bilingual.

When we compared the children's performance in Samoan to that in English, it was found that the children showed superior skills in Samoan on measures of receptive vocabulary and letter name knowledge. There were no significant differences between English and Samoan on any of the other measures. These findings clearly reflect the fact that the children, despite attending Samoan language immersion programmes, grow up in an English-speaking society. When taking children's performance across languages into

consideration, using composite scoring, it was found that composite scores were higher than performance in either language for measures of receptive vocabulary, expressive vocabulary, story comprehension, and story quality. These results indicate that the bilingual children's performance in one language (either English or Samoan) significantly underestimates their composite language performance and highlights the importance of developing appropriate assessment tasks for bilingual children to avoid under- or over-diagnosis of language impairment (Jordaan 2008). Future research should investigate the possibility of creating bilingual tasks tapping phonological awareness and letter name knowledge that allow for composite scoring.

To further investigate possible signs of cross-language transfer, correlational analyses were performed. Receptive vocabulary scores in Samoan showed a positive significant correlation with receptive vocabulary in English, indicating that proficiency in L1 may facilitate performance in L2 (Kroll, Sumutka, and Schwartz 2005). It was also found that children's performance on the expressive vocabulary scores in one language was significantly related to their performance on the story retelling and comprehension scores in that same language, but not across languages. These findings are consistent with those from Uccelli and Páez (2007) and reflect the expressive language requirements of the story comprehension task that was used in the current study (i.e., requiring the children to provide verbal answers to the story comprehension questions). In contrast to results from Uccelli and Páez's (2007) investigation, however, no cross-linguistic correlations were found for story quality ($r = .045$). Perhaps the different scoring methods account for this difference in findings. Uccelli and Páez scored the stories on measures of sequence and affect as well as the inclusion of story elements. The present study only evaluated the children's use of critical story elements.

It was interesting to note the relatively low ($r = -.31$), negative, non-significant correlation between children's expressive vocabulary scores in English and Samoan. This

finding confirms the notion that the young bilingual children build their expressive vocabulary across languages, rather than obtaining translation equivalents in both languages (see Hemsley et al. 2010, for a discussion). The fact that letter name knowledge in English was related to performance on Samoan language tasks could simply be a consequence of instruction. To help explain this correlation, the researcher approached the teachers at the Samoan immersion kindergartens and enquired about classroom practices. Two of the teachers commented that a regular classroom activity involved finding the first letter in names on the whiteboard and that this activity included English letter names and sounds if there were no translation equivalents in Samoan. This classroom practice may well explain the a highly significant correlation between letter name knowledge in English and Samoan ($r = .596$).

Performance of the bilingual children compared to their monolingual peers

Our second research question compared the performance of the bilingual children to the performance of a group of monolingual children, matched for age, type of preschool education, and geographic area. When considering English-only performance it was found that the monolingual children significantly outperformed the Samoan bilingual children on measures of expressive and receptive vocabulary, story comprehension, and letter name knowledge. There were no group differences in phonological awareness or story retelling quality (i.e., number of critical events included). When considering composite scoring, however, a different picture emerged. Although the monolingual children still outperformed the bilingual children on expressive vocabulary, the bilingual children demonstrated significantly better receptive vocabulary. Moreover, group differences in story comprehension were no longer significant. It is not clear why the Samoan children showed superior receptive vocabulary skills compared to their monolingual peers while expressive vocabulary remained significantly lower. One plausible explanation is that the Samoan

children did not practise their language skills enough to build expressive competence. Future studies should include in-class observations of teacher-child interactions to test this hypothesis.

The results from the current study contribute to the findings by Hemsley et al. (2010) in two ways. First, consistent with Hemsley et al., considering English-only performance on receptive vocabulary in Samoan bilingual children significantly underestimates these children's language performance, emphasising the importance of taking both languages into consideration. Second, the children in the current study (mean age 53 months) appeared to show better performance on the Samoan expressive vocabulary measure (average score 34.7) than the four-year-old participants in the Hemsley et al. study (mean age 57 months, score 12.2). This difference most likely relates to the different schooling systems used in the two countries. The children in the current study attended Samoan language immersion kindergartens, supporting their home language, whereas the Australian children in the Hemsley et al. study attended preschools in which English was the primary language of instruction (Kohnert et al. 2005).

The finding that there were no group differences on the English story quality measure was unexpected, considering that 12 of the 18 children grew up with Samoan spoken in the home from birth and that Samoan was the main language of instruction. Unfortunately the questionnaire did not ask the parents in which language they most often read to the children. It should also be noted that story retelling performance was generally poor for both groups, with the average number of critical events included between one and two (out of a maximum of six).

When comparing the two groups of children on print-related measures, we found no group differences in phonological awareness. These results were promising, because children from Pasifika families in general are known to perform more poorly academically (Crooks,

Smith, and Flockton 2008). As this task contains a chance element (10 items, choice of 3), we reviewed these results to determine how many children scored above chance (i.e., a score of 6 or more on the initial phoneme identification task). In the bilingual group, 22.2% (4 children) scored above chance on this task in English, and only one child (5.5%) scored above chance in Samoan. For the monolingual children, this percentage was 26.6%. These results are similar to the normative data we collected from children attending kindergarten in a range of socioeconomic areas in the Canterbury region (i.e., 22.8%; Westerveld et al. 2011). Taken together these results indicate that the bilingual Samoan children showed similar performance compared to their monolingual peers at this early age. Future longitudinal studies are required to more closely investigate phonological awareness development across languages and across educational settings. Although the monolingual children in the current study outperformed the bilingual children on letter name knowledge in English, the children's performance on the Samoan letter name knowledge task indicates this result is most likely caused by the language of education in the respective centres.

Home literacy environments

The final research question related to the home literacy environment of the participants. The results indicated that the parents of the monolingual children were more likely to start reading to their child before the age of one, to read to their children at bed-time, and to have a lot of children's books in the home. Although it has been well established that shared book reading facilitates vocabulary skills (e.g., Sénéchal et al. 2008), in the current study the monolingual children did not outperform the Samoan bilingual children on the vocabulary measures. The nature of the experimental vocabulary task, assessing familiar vocabulary that children are exposed to in everyday situations, may well explain this finding. Future research should extend work by previous researchers into Samoan cultural practices and beliefs around

sharing books and other literacy related activities with young children (e.g., see Dickie and McDonald 2011).

Limitations and future directions

One limitation of the present research is the fact that the same story was used twice for the Samoan children. Administration of the story task was counterbalanced for language, but there may have been a practice effect, providing the Samoan children with an advantage over the monolingual children. Although there were no significant correlations between the bilingual children's performance on this task across languages, future research should consider developing equivalent tasks in both languages. Another possible limitation refers to the ethnicity of the children in the control group. More than half of these children were from New Zealand European ethnic consent. To more closely investigate the differential effects of cultural practice and bilingualism on children's emergent literacy performance, future research should attempt to recruit a control group of monolingual English-speaking Samoan children.

Conclusions

As a group, children from Pasifika ethnic backgrounds are at increased risk of academic underachievement compared to their peers from non-Pasifika backgrounds, especially in the areas of reading and speaking (Crooks, Smith, and Flockton 2008). To shed light on the oral language and literacy skills these children possess prior to formal reading tuition, this study investigated the emergent literacy skills of a group of bilingual Samoan-English speaking children and compared these to the skills of their monolingual peers who attended kindergartens in the same geographic areas. It also enquired about the families' home literacy practices. The results clearly indicated that the Samoan children showed superior vocabulary skills compared to their monolingual peers when using composite scores. Apart from letter name knowledge in English, there were no differences in other emergent literacy skills

between the groups. Of some concern is the fact that the Samoan children seem to engage less frequently in shared book reading activities compared to their monolingual peers and future research should investigate more closely the cultural influences on these practices. Taken together, the results from this study support the importance of considering bilingual children's emergent literacy skills across languages.

Appendix

Initial Phoneme Identification items

PRACTICE			
lago	moli	liona	va'a
	fale	saga	lole
TEST			
malie	tui	va'a	mama
	motu	loi	polo
semu	tusi	suo	keke
	salu	tupe	fatu
pato	tusi	polo	lima
	pusa	saga	moli
taika	moli	lima	tama
	salu	talo	fāi
fe'e	fale	pasi	gutu
	tui	moa	fatu

References

- Ballard, E., and S. Farao. 2008. The phonological skills of Samoan speaking 4-year-olds. *International Journal of Speech-Language Pathology*, 10 (6): 379-391.
- Bialystok, E. 2007. Cognitive effects of bilingualism: How linguistic experience leads to cognitive change. *International Journal of Bilingual Education and Bilingualism* 10 (3):210-223.
- Bishop, D. V. M. 1997. *Uncommon understanding. Development and disorders of language comprehension in children*. East Sussex: Psychology Press.
- Bishop, D.V.M., and C. Adams. 1990. A prospective study of the relationship between specific language impairment, phonological disorders, and reading retardation. *Journal of Child Psychology and Psychiatry* 31:1027-1050.
- Boudreau, D. 2005. Use of a parent questionnaire in emergent and early literacy assessment of preschool children. *Language, Speech, and Hearing Services in Schools* 36:33-47.
- Cabell, S. Q., L. M. Justice, T. A. Zucker, and C. R. Kilday. 2009. Validity of teacher report for assessing the emergent literacy skills of at-risk preschoolers. *Language, Speech, and Hearing Services in Schools* 40 (2):161-173.
- Carson, K., G. Gillon, and T. Boustead. 2011. Computer-administrated versus paper-based assessment of school-entry phonological awareness ability. *Asia Pacific Journal of Speech, Language, and Hearing* 14 (2):85-101.
- Catts, H. W., M. E. Fey, X. Zhang, and J. B. Tomblin. 1999. Language basis of reading and reading disabilities: Evidence from a longitudinal investigation. *Scientific Studies of Reading* 3 (4):331-61.
- Clay, M. M. 1970. Language Skills - Comparison of Maori, Samoan and Pakeha Children Aged 5 to 7 Years. *New Zealand Journal of Educational Studies* 5 (2):153-162.

- Crooks, T., J. Smith, and L. Flockton. 2008. *National Education Monitoring Report 49: Reading and speaking assessment results*. Dunedin, New Zealand: Educational Assessment Research Unit.
- Dickie, J., and G. McDonald. 2011. Literacy in church and family sites through the eyes of Samoan children in New Zealand. *Literacy* 45 (1):25-31.
- Dickinson, D. K., A. McCabe, N. Clark-Chiarelli, and A. Wolf. 2004. Cross-language transfer of phonological awareness in low-income Spanish and English bilingual preschool children. *Applied Psycholinguistics* 25 (03):323-347.
- Flockton, L., and T. Crooks. 2005. *Reading and speaking: Assessment results 2004*. Wellington: Ministry of Education.
- Hamilton, E., and G. Gillon. 2006. The phonological awareness skills of school-aged children who are bilingual in Samoan and English. *Advances in Speech-Language Pathology* 8 (2):57-68.
- Hemsley, G., A. Holm, and B. Dodd. 2010. Patterns of diversity: Lexical learning in Samoan-English bilingual children. *International Journal of Speech-Language Pathology* 12 (4):362-374.
- Hess, G., B. Woll, and L. Boles. 2010. speech, language, and hearing risk for Samoan children K to 3. *Asia Pacific Journal of Speech, Language, and Hearing* 13 (1):21-40.
- Jordaan, H. 2008. Clinical intervention for bilingual children: An international survey. *Folia Phoniatrica Et Logopaedica* 60 (2):97-105.
- Justice, L. M., R. Bowles, K. Pence, and C. Gosse. 2010. A scalable tool for assessing children's language abilities within a narrative context: The NAP (Narrative Assessment Protocol). *Early Childhood Research Quarterly* 25:218-234.

- Justice, L. M., M. A. Invernizzi, and J. D. Meier. 2002. Designing and implementing an early literacy screening protocol: Suggestions for the speech-language pathologist. *Language, Speech, and Hearing Services in Schools* 33 (2):84-101.
- Kohnert, K., D. Yim, K. Nett, P. F. Kan, and L. Duran. 2005. Intervention with linguistically diverse preschool children: A focus on developing home language(s). *Language, Speech, and Hearing Services in Schools* 36 (3):251-263.
- Kroll, J. F., B. M. Sumutka, and A. I. Schwartz. 2005. A cognitive view of the bilingual lexicon: Reading and speaking words in two languages. *International Journal of Bilingualism* 9 (1):27-48.
- Milosky, L. M. 1987. Narratives in the classroom. *Seminars in Speech and Language* 8 (4):329-343.
- Ministry of Education. 1996. Te Whāriki. Early Childhood Curriculum. Wellington, NZ: Learning Media.
- Ministry of Education. 2009. Ta'iala mo le Gagana Sāmoa. The Gagana Sāmoa Guidelines. Wellington, NZ: Learning Media.
- NICHHD. 2005. Pathways to reading: The role of oral language in the transition to reading. *Developmental Psychology* 41 (2):428-442.
- Pearson, B. Z., S. C. Fernández, and D. Kimbrough Oller. 1993. Lexical development in bilingual infants and toddlers: Comparison to monolingual norms. *Language Learning* 43 (1):93-120.
- Pratt, G. 1984. *A grammar and dictionary of the Samoan language, with English and Samoan vocabulary*. Papakura: McMillan.
- Schaerlaekens, A., I. Zink, and L. Verheyden. 1995. Comparative vocabulary development in kindergarten classes with a mixed population of monolinguals, simultaneous and

- successive bilinguals. *Journal of Multilingual and Multicultural Development* 16 (6):477-495.
- Sénéchal, M., S. Pagan, R. Lever, and G. P. Ouellette. 2008. Relations among the frequency of shared reading and 4-year-old children's vocabulary, morphological and syntax comprehension, and narrative skills. *Early Education & Development* 19 (1):27-44.
- Statistics New Zealand. 2007. Samoan people in New Zealand: 2006.
<http://www.stats.govt.nz/~media/Statistics/Census/2006-reports/Pacific%20Profiles/Samoan-Profile-updated-May2008.pdf>
- Swan, E. 1992. *Ko au na galo (Ana gets lost)*. Wellington, NZ: Learning Media, Ministry of Education.
- Tagoilelagi-Leota, F. , S. McNaughton, S. MacDonald, and S. Farry. 2005. Bilingual and biliteracy development over the transition to school. *International Journal of Bilingual Education and Bilingualism* 8 (5):455-479.
- Thordardottir, E., A. Rothenberg, M. Rivard, and R. Naves. 2006. Bilingual assessment: Can overall proficiency be estimated from separate measurement of two languages? *Journal of Multilingual Communication Disorders* 4 (1):1-21.
- Tolosa, M., S. McNaughton, and M. Lai. 2009. Biliteracy and language development in Samoan bilingual classrooms: the effects of increasing English reading comprehension. *International Journal of Bilingual Education and Bilingualism* 12 (5):513-531.
- Uccelli, P., and M. M. Pérez. 2007. Narrative and vocabulary development of bilingual children from kindergarten to first grade: Developmental changes and associations among English and Spanish skills. *Language, Speech, and Hearing Services in Schools* 38 (3):225-236.

- Westerveld, M. F., and G. T. Gillon. 2010. Profiling oral narrative ability in young school-aged children. *International Journal of Speech-Language Pathology* 12 (3):178 - 189.
- Westerveld, M., A. van Bysterveldt, G. Gillon, and L. Boyd. 2011. Describing the emergent literacy skills of 4-year-old children who receive free kindergarten early childhood education in New Zealand. Paper presented at the *Speech Pathology Australia annual conference: Diversity & Development*. Darwin, NT, Australia: Speech Pathology Australia.
- Westerveld, M. F., G. T. Gillon, and L. Boyd. 2012. Evaluating the clinical utility of the Profile of Oral Narrative Ability in 4-year-old children. *International Journal of Speech-Language Pathology* 14 (2):130-140.

Table 1. Language use at home – Parent questionnaire results of the bilingual Samoan children (n = 18).

Question	Answers		
	English	Samoan	Samoan/English
What language/s do you speak with your child at home – most of the time?	6 (33%)	12 (67%)	
What language/s do you speak with your child at home – sometimes?*	6 (33.3%)	7 (38.9%)	1 (5.6%)
What language/s does your child speak at home with you?	3 (16.7%)	5 (27.8%)	10 (55.5%)
	Fluent/very good	Good/OK	Minimal
How would you rate your child's ability to speak Samoan?	8 (44.45%)	8 (44.45%)	2 (11.1%)
How would you rate your child's ability to speak English?	9 (50%)	8 (44.4%)	1 (5.6%)

Note: * 4 parents did not answer this question or answered 'not applicable'

Table 2. Mean scores (SD) and range for the bilingual children in English, Samoan, and across languages

	English	Samoan	Composite
Measures			
Receptive Vocab*	51.4 (8.7)	58.1 (7.2)	67.4 (4.1)#
	33 - 64	46 - 70	57 - 72
Expressive Vocab	41.6 (10.8)	34.7 (9.7)	52.9 (7.0)#
	24 - 60	11 - 57	41 - 64
Initial Phoneme ID	4 (1.7)	3.5 (1.5)	NA
	2 - 8	0 - 6	
Letter Name Knowledge*	3.8 (3.6)	6.1 (4.7)	NA
	0-18	0 - 18	
Story Comprehension	2.4 (1.9)	1.2 (1.4)	2.9 (1.8)#
	0 - 6	0 - 5	0 - 6
Story Quality~	1.3 (1.2)	.6 (1.0)	1.7 (1.4)#
	0 - 4	0 - 3	0 - 4

Note: * Significant difference between performance in English and Samoan ($p < .05$)

composite scores significantly higher ($p < .05$) than the English and Samoan language scores

~ Children who did not produce a story retell obtained a score of 0 (max score is 6).

Table 3. Bivariate correlations among performance on the emergent literacy tasks in English and Samoan

Measures	RVEng	RVSam	EVEng	EVSam	SCEng	SCSam	SQEng	SQSam	LNKEng	LNKSam	PAEng	PASam
RVEng	-	.526*	.664**	-.066	.540*	-.086	.559*	-.07	.239	.274	-.031	.231
RVSam		-	.211	.595**	.233	.366	.297	.324	.487*	.419	.452	.567*
EVEng			-	-.308	.662**	.062	.829**	-.104	.131	.113	.066	.037
EVSam				-	-.439	.656**	-.182	.710**	.502*	.545*	.289	.543*
SCEng					-	-.381	.445	-.252	.018	-.139	.138	.127
SCSam						-	.202	.740**	.560*	.468*	.265	.437
SQEng							-	.045	.011	-.188	-.055	-.047
SQSam								-	.566*	.535*	.239	.380
LNKEng									-	.596**	.514*	.577*
LNKSam										-	.267	.348
PAEng											-	.261
PASam												-

Note: EV = Expressive Vocabulary; RV = Expressive Vocabulary; SC = Story Comprehension; SQ = Story Quality; LNK = Letter Name Knowledge; PA = Phonological Awareness.

* $p < .05$; ** $p < .001$.

Table 4. Mean scores (SD) and range for the two groups of children in English and on composite bilingual scores.

	Monolingual	Samoan bilingual	
	control group	children	
Measures	English	English	Composite
Receptive Vocab (RV)	63.8 (2.7)	51.4 (8.7)	67.4 (4.1)
	59 - 68	33 - 64	57 - 72
Expressive Vocab (EV)	58.5 (5.9)	41.6 (10.8)	52.9 (7.0)
	48 - 67	24 - 60	41 - 64
Phonological Awareness	5.1 (1.8)	4 (1.7)	NA
	3 - 10	2 - 8	
Letter Name Knowl (LNK)	7.9 (5.9)	3.8 (3.6)	NA
	2 - 17	0-18	
Story Comprehension	4.2 (1.7)	2.4 (1.9)	2.9 (1.8)
	1 – 7	0 - 6	0 - 6
Story Quality~	1.9 (1.5)	1.3 (1.22)	1.7 (1.4)
	0 - 5	0 - 4	0 - 4

Note: ~ Children who did not produce a story retell obtained a score of 0 (max score is 6).