

## Clinician survey of language sampling practices in Australia

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RUNNING HEAD: LANGUAGE SAMPLING PRACTICES IN AUSTRALIA

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## **Abstract**

A national online survey was used to investigate spontaneous language sampling and analysis practices by speech-language pathologists working with children and adolescents. A total of 257 responses were received from clinicians around Australia. Results indicated that spontaneous language samples are collected on a routine basis in elicitation contexts deemed appropriate to the clients' age or developmental stage. However, language samples were generally short, often not recorded, and analysed informally. Consistent with previous research into language sampling practices, the main barrier to more detailed language sample analysis appears to be the time needed for transcription. Despite rapid technological advances in the last two decades, only 12.5% of the respondents reported using computer-assisted transcription and analysis procedures. Suggestions are made on how to promote change in clinical practice to ensure spontaneous language samples are transcribed and analysed in more detail. By transcribing the samples, detailed analysis of children's language performance can be undertaken, allowing for effective goal setting and assisting in objective progress measuring during and following intervention.

## **Introduction**

Spontaneous language sampling provides paediatric speech pathologists with important information about a client's use of oral language in a naturalistic communication environment and is considered the cornerstone of clinical practice (Miller, 1996). For the purpose of this paper, language sampling comprises not only the elicitation of a spontaneous language sample, it also involves transcription and/or analysis of the sample. Information derived from language sample analysis (LSA) may be used to confirm and complement standardised test results and provides a basis for assessment, intervention planning, and measurement of therapy outcomes (see Westerveld, 2011). While the value of LSA is widely acknowledged in the literature, it is difficult to estimate how widely it is used by clinicians. Although surveys into language sampling practices have been conducted overseas (e.g., Hux, Morris-Friehe, & Sanger, 1993; Kemp & Klee, 1997), there is no information specific to the Australian context. Furthermore, these surveys were conducted more than a decade ago, and it seems likely that clinical practices may have changed, particularly considering the technological advances we have seen during that period (e.g., see Heilmann & Westerveld, 2013). To obtain a picture of language sampling practices in Australia, a nation-wide survey was conducted. The aim was to investigate clinicians' LSA practices and opinions related to the following four factors: a) purpose of eliciting a language sample, b) elicitation methods, c) transcription, and d) analysis. Results from this survey will provide direction regarding professional development and resourcing requirements, and inform future research into spontaneous language sampling and analysis in an Australian context.

### *Purpose of eliciting a language sample*

It is widely acknowledged that LSA should be part of the speech-language pathologist's regular assessment protocol (American Speech-Language-Hearing Association, 2004; Gillon, Moriarty, & Schwarz, 2006). LSA may be used for a range of purposes, including screening,

diagnosis, setting goals for intervention, and progress monitoring. For example, spontaneous language samples may be collected for screening purposes when clinicians wish to obtain an initial impression of a child's intelligibility, fluency, or grammatical ability. A language sample may also be collected to measure generalisation of therapy goals at the end of a period of therapy.

In general, broad-spectrum norm-referenced standardised language tests are administered to determine whether children show significant language difficulties (compared to their age-matched peers) and are useful for resource allocation and referral to specialist services. However standardised measures have a more limited role in the formulation of therapy goals and in the measurement of progress following intervention. LSA not only has a valuable role in confirming these standardised test results in a more naturalistic environment (Dunn, Flax, Sliwinski, & Aram, 1996; Miller, 1996), it also provides the clinician with detailed information regarding a child's spoken language skills that are important for academic success (Barako Arndt & Schuele, 2013; Hewitt, Hammer, Yont, & Tomblin, 2005). To illustrate, Barako et al. (2013) provide a convincing argument of the importance of investigating a child's proficiency in complex syntax using spontaneous language sample analysis. These results may then be used to set detailed goals for intervention and assist the clinician in measuring progress during and following intervention.

Use of LSA on a routine basis may be mandated by employers. For example, in Queensland, SLPs working for Education Queensland often use LSA results to complement standardised test results when applying for verification (i.e., obtaining official confirmation that the child has a language impairment, which will affect service delivery). In Western Australia, although not mandated, many speech-language pathologists use LSA as part of an initial language screen or to assist in the development of therapy goals. To the authors'

knowledge, there are no standard guidelines across Australia. Results from the current survey will help determine if this assumption is correct.

### *Elicitation methods and tasks*

When collecting a sample of spontaneous language, clinicians may choose one or more of the following options: standardised tests, screening packages (with or without norms), existing protocols, or use of informal procedures. The use of LSA may be influenced by the nature of the paediatric clients we service. For example, formal LSA may not be appropriate for clients who are very young (i.e., below the age of 18 months) or nonverbal, or who have been referred for concerns regarding swallowing, voice, or articulation (lisps). Depending on the client's age and general language ability, spontaneous language samples may be elicited in different contexts, including free play, conversation, narrative, and expository discourse. In summary, for very young children, spontaneous language may be collected in a free-play situation, whereas from 4;6 years eliciting language in conversation (the 'unplanned' interactional exchange between two or more conversational partners) has been used successfully (Westerveld, Gillon, & Miller, 2004). Narrative is a more difficult genre and typically consists of a temporally sequenced account of experiences or events by one speaker (e.g., personal narratives, fictional stories). Expository discourse refers to a monologue providing a factual description or an explanation of an event, and is considered cognitively and linguistically challenging. Although it goes beyond the scope of this paper to provide a full overview of existing elicitation contexts and conditions (Klein, Moses, & Jean-Baptiste, 2010, see also Westerveld, 2011, for a review), we were interested to determine which elicitation procedures clinicians preferred and whether clinicians varied their elicitation procedures depending on their clients' age.

### *Transcription and analysis*

As part of the language sampling process clinicians face the choice of transcribing the sample or not. A written transcript of the child's language provides the clinician with an objective measure of the child's performance which may be used in reporting back to parents or other professionals (Klee, Mebrino, & May, 1991). It also allows for more detailed analysis of the child's performance. Transcription may be done in real-time (while the child is talking), or off-line (if the sample has been audio- or videorecorded). Because transcription is time-consuming (e.g., see Long, 2001), past research has investigated several options to speed up this process (Klee et al., 1991). For example Klee et al. (1991) investigated the possibility of transcribing preschool children's conversation in real-time, using a computer and a standard transcription format. Language samples were elicited in a conversation format from 22 children, aged between 2;4 and 5;1, with an average MLU ranging from 1.8 to 3.35. Although the results showed high correlations between the two methods of transcription on measures of MLU and intelligibility, the use of highly experienced transcribers who were present during the elicitation process did not seem to reflect clinical reality. In a more recent study, Hoffman (2013) compared real-time judgments of pre-school age children's grammatical accuracy to data obtained through more traditional transcription. Results revealed clinicians' ability to make real-time judgments about the accuracy of children's utterances produced during a 1-minute conversation. However, the author admits that limitations included the rather crude nature of the real-time analysis and the fact that no permanent record of the child's language sample was kept (for reliability or program planning purposes). Taken together, there is no clear picture about the reliability of real-time transcription.

Another factor affecting the adoption of routine LSA may include access to technology, such as availability of audio- and/or video recorders, transcription equipment (e.g., earphones, foot pedals, transcription software), and language sample analysis software. It has been well established that the use of computerised technology may not only

significantly reduce the time required to transcribe and analyse language samples, it may also improve the accuracy of the analysis (Long, 2001). Several computerised transcription programs are available, such as CLAN (available from <http://chilides.psy.cmu.edu/clang/>) and Systematic Analysis of Language Transcripts (SALT; <http://www.saltsoftware.com/>). These programs differ in cost (the first program is available at no cost) and in the option of containing databases of transcripts from typically developing children, which is one of the SALT program's main features. Apart from the purchase costs associated with technology, professional development and practice may be required to assist SLPs in using these tools effectively and efficiently in clinical practice.

One potential barrier to using LSA in Australia is the limited availability of local norms for comparison of their clients' language samples (see Westerveld, 2011). Most readily available databases of spontaneous language samples are from the US, Canada, or New Zealand (see [www.saltsoftware.com](http://www.saltsoftware.com)). The current study investigated this hypothesis.

#### *The current study*

To obtain information about language sampling practices in Australia, we conducted a nation-wide electronic survey. The following research questions were asked:

1. What are the current language sampling practices of clinicians in Australia as they relate to purpose, elicitation, transcription, and analysis?
2. What enablers or barriers do clinicians identify to utilising LSA on a routine basis?

The results from this survey may provide direction regarding training, professional development, and resourcing requirements associated with LSA in Australia and inform future research into spontaneous language sampling and analysis in an Australian context.

#### **Method**

Ethical approval to carry out this research was obtained from both Curtin University and Griffith University. Survey items were included based on the research questions, a review of

the literature, and consultation with clinical speech-language pathology colleagues who work with paediatric clients. To allow for comparison of the results with those from previous studies and hence investigate possible trends over time, some of the questions were based on surveys designed by Hux et al. (1993) and Kemp and Klee (1997). The survey was piloted with three paediatric speech-language pathologists. They reported that the survey took between 15 and 20 minutes to complete and that all questions were clear and relevant. Based on this feedback only minor changes were made. Please contact the authors for a copy of the full version of the 29-question survey. The survey comprised four sections. Section 1 elicited demographic information from the participants, including place of work, nature of caseload, and length of time employed as a speech-language pathologist. Sections 2, 3, and 4 covered the following topics, respectively: assessment measures, spontaneous language sampling, and language sample analysis. Different response types were utilized, including scales and multiple choice questions. Participants were allowed to skip questions and to leave the survey at any point. Although no open-ended questions were included, on many occasions respondents could select the “other” response category, and provide additional information.

The survey was hosted online using Survey Monkey®. All members of Speech Pathology Australia (SPA), who worked with children, aged 0 – 18, were invited to participate through an Association email (followed up by a reminder Association email four weeks later). In an attempt to recruit speech-language pathologists who were not members of Speech Pathology Australia, a message was posted on the phonological therapy listserv (<http://speech-language-therapy.com/>). In addition, the authors, and colleagues from each state personally emailed clinicians to make them aware of the survey and to encourage them to pass the invitation on to potential participants. These methods were used in an attempt to reach as many practising speech-language pathologists as possible. The survey was available for approximately two months (August – September 2012).



### *Data analysis*

After the closing date for the survey all responses were downloaded and imported into SPSS Version 20. All responses to closed questions were coded for analysis. The data were analysed using descriptive statistics to calculate frequency responses for the demographic data and to calculate frequency responses within descriptive categories (e.g., types of language sample analyses used). In addition, cross-tabulation was used when investigating patterns of responses across different states / territories, workplace variables, or analysis tools. For the questions that allowed participants to include comments, the following method was used. For example, the number of times a particular test or reasons for using a particular analysis method were counted and ranked from most often to least reported. In addition, the answers were grouped into categories where possible. The categories were generated from the data in an attempt to describe practice patterns of the participants.

## **Results**

### *Responses*

Responses were received from 257 speech-language pathologists from around Australia. The majority of respondents were from Western Australia (25.3%) and Queensland (23.3%), the home states of the authors. In addition, there were 46 occasions where the survey was commenced but not completed. No further information is available about these, and they have not been included in the analysis. Table 1 contains a breakdown of respondents by state or territory; 210 of the 257 respondents (80.8%) were members of Speech Pathology Australia. The number of Speech Pathology Australia members in each state or territory has been included to provide an indication of the relative number of speech-language pathologists in each state or territory. Unfortunately, there is no National register of practising speech-language pathologists in Australia, nor is it known how many members of Speech Pathology Australia work with clients under the age of 18.

Insert table 1 here

### *Demographics of respondents*

There was a wide spread in terms of years of employment as a speech-language pathologist of the respondents. Almost 70% of the respondents indicated they had been employed as a speech-language pathologist for more than 5 years; 23% reported 1 – 5 years' employment, and almost 7% of the respondents said they had been employed less than a year. In response to question five, 165 respondents (64%) indicated they worked full-time. When asked about their employment setting, the majority of respondents selected either private practice (32.3%) or the public health sector (31.5%). Just over 25% of the respondents worked in the public education sector and 15% in community health services. Smaller numbers were reported for private education service (3.5%), private health service (2.3%) and specialist health service (3.1%). Finally, 9.7% responded with "Other". Although most respondents (60%) reported that their caseload consisted of clients aged 0-4, there was a spread in this measure with 71% reporting working with 4-6 year-olds, 63% 6-11, and 34% worked with clients aged 11+. The most common paediatric populations managed by respondents were articulation/phonology (93.1%); specific language impairment (87.7%); childhood apraxia of speech (76.5%); autism spectrum disorder (75%); and learning disability (63.8%).

### *Assessment methods and tasks*

The second section of the survey investigated the respondents' clinical practices related to assessment. Most respondents (97.3%) reported using standardised assessments when assessing children with suspected language impairment. Similarly, the majority of respondents (90.8%) collected spontaneous language samples from their clients. Language samples were elicited for a range of purposes, including screening (68.8%), diagnosis (78.8%), remediation (61.5%), and post-intervention (54.6%). In addition, nine respondents mentioned funding purposes/applications as a reason for collecting language samples. Only

21 respondents (8.2%) reported they did not collect language samples from their clients.

Time constraints, lack of training, and lack of computer hardware/software were reported as the main reasons for not collecting language samples.

When asked how clinicians typically collected a sample of spontaneous language (question 15, Appendix), it was found that most respondents used an informal procedure, using pictures or objects (223; 87%). Standardised tests were also used by a high percentage of the clinicians (159; 62%). The most commonly used test was the Bus Story (138; 54%) (Renfrew, 1995), followed by the Test of Narrative Language [TNL] (Gillam & Pearson, 2004) (37; 14%) and the Expression, Reception, and Recall of Narrative Instrument [ERRNI] (Bishop, 2004) (27, 10.5%). Far fewer respondents reported using a screening package (38; 14.7%) or an existing protocol (84; 32.7%). When asked if clinicians had developed their own procedures for eliciting spontaneous language, 35 responded affirmative (13.6%). Some of these procedures included using a standard set of toys, picture or book descriptions, adaptations of adult language tests, and structured/unstructured play activities.

When asked what context was used to elicit a spontaneous language sample (not using a standardised test), clinicians indicated a range of contexts, dependent on the age of the client. As illustrated in figure 1, free play was the predominant context selected for children younger than four, whereas use of expository contexts increased for school aged clients, and personal narrative was the most common context for eliciting spontaneous language from high school clients. Some clinicians reported using other contexts, including peer social interaction, asking the parent to collect a language sample, and the use of picture books and recounts.

Insert figure 1

Decisions regarding the language sampling contexts depended on a range of additional factors (other than age, as seen in figure 1). These variables included time constraints,

availability of resources, and employer/departmental guidelines, as displayed in figure 2. Respondents also mentioned other factors, such as the estimated cognitive ability of the child, the child's cultural and/or linguistic background, and the child's ability to participate in formal testing.

Insert figure 2

To further explore the use of standardised tests around Australia, cross-tabulation was used. As shown in table 2, use of standardised tests to assess spontaneous language varied significantly across Australia ( $\chi^2 = 30.614$ ,  $df = 7$ ,  $p < .001$ ). Results also indicated that the use of the *Bus Story* (Renfrew, 1995) as a standardised measure of spontaneous language sampling tool varied across Australia. In some states i.e., Victoria and Western Australia, the *Bus Story* was by far the most common standardised measure used.

Insert table 2

### *Transcription and Analysis*

Just over half of the respondents (144; 56%) indicated that they record the language samples they collect; 49% reported transcribing the sample in real-time (i.e., while the child is talking). Cross-tabulation revealed that 41% of the respondents working with 0 – 4 year-olds transcribe the samples in real-time; 41% of respondents working with 4- 6 year-olds; 32% working with 6-11 year-olds; and only 14% of the respondents who work with 11-years and over transcribe the language samples in real-time. A total of 38 respondents reported using video equipment for recording the language sample. Several clinicians indicated that transcription habits depended on the length of the sample or the age of the child. When asked what the typical length in utterances of the collected language samples was, respondents reported conversational samples ranging between 0 and 500 utterances (mean 37, median 20, and SD 70). For narratives, the length of the samples ranged between 0 and 500, mean 31, median 15 (SD 70). Closer inspection of these results revealed seven outliers for the

conversational samples and eight outliers for the narrative samples (sharing the same five outliers). When removing these outliers from the analysis, the mean length of a conversational samples was 23.26 (range 0 – 100, SD 21.87), and the narrative samples 16.58 (range 0 – 50, SD 13.33).

Just over 53% (137) of the respondents mentioned they either ‘always’ or ‘often’ listen to the language samples they had collected, whereas 29 respondents (11%) said they never or rarely listen to the language samples. When asked about transcription, 152 respondents (74%) indicated they always or often transcribe samples, while only 22 clinicians (11%) never or rarely transcribe their samples. Cross-tabulation revealed that of the respondents who record the sample, 87% would often or always listen to it, and 73% said they would often or always transcribe the sample.

Most of the respondents to the survey reported they generally analyse the language samples themselves (224; 87%), however some rely on speech-language pathology students to assist with this. More than half of the respondents (147; 57%) agreed they would be likely to make use of a transcription and analysis service if this were available; however some respondents expressed concern over cost and turnaround time. A number of respondents reported on the value of completing the analysis themselves. The purpose of analysing the language samples was reportedly for screening (151), diagnosis (186), goal-setting (200), and/or evaluation of progress (174).

The majority of respondents (200; 89%), indicated they always or often undertake an informal analysis of the samples they collect. A total of 81 respondents (37%) reported that they often or always undertake a detailed analysis of samples, 90 indicated they sometimes undertake a detailed analysis (41%), while 43 (20%) of the respondents never or rarely undertake detailed analysis. Finally, 113 respondents (51%) always or often refer to norms, whereas 43 respondents (19%) said they never or rarely do. In response to question 29, ‘have

you collected language samples from groups of children in an attempt to create norms of typical development”, 14 clinicians indicated they had. Six respondents provided further information and four of these reported collecting norms for kindergarten / prep / Foundation year screening purposes.

Finally, when asked how respondents analysed their language samples, it was found that the most commonly used method involved assigning structural stages (Brown’s morphemes) as reported by 143 respondents (56%). Other methods included BLADES (Bristol Language Development Scales; Gutfreund, Harrison, & Wells, 1989) (62; 24%), LARSP (Language Assessment, Remediation and Screening Procedure; Crystal, Fletcher, & Garman, 1989) (81; 32%), and SALT (Systematic Analysis of Language Transcripts; Miller, Gillon, & Westerveld, 2012) (31; 12%). Respondents also mentioned: semantic and pragmatic analysis, morphological error pattern analysis, and narrative stages analysis. LARSP and BLADES were most commonly used in Western Australia.

## **Discussion**

This study used an on-line clinician survey to investigate the clinical use of language sampling and analysis in Australia. Speech-language pathologists (SPs) working with children aged 0 - 18 were recruited via Speech Pathology Australia and through personal and professional networks of the authors. A total of 257 responses were received from around Australia, of which 80% were current members of Speech Pathology Australia. Although there was an overrepresentation of SPs from Queensland and Western Australia, the home-states of the authors (see table 1), and a slight underrepresentation of New South Wales and Victoria, the respondents worked in a range of settings and showed variety in years of experience. In addition, there was an even distribution in the age-ranges of the clients the clinicians served and the respondents represented both full-time and part-time employees.

The first research question sought to describe current language sampling practices of clinicians as they relate to purpose, elicitation, transcription, and analysis. It was found that a clear majority of respondents (91%) reported collecting samples of spontaneous language from their clients with (suspected) language impairment. The sample may potentially be biased towards LSA, due to the nature of the recruitment procedures (i.e., by open invitation), so perhaps only clinicians with an interest in LSA decided to participate. As participants were recruited electronically, and the survey was completed online, it may have attracted only speech-language pathologists who are more familiar with technology. Nonetheless, these results are consistent with previous overseas research (Kemp & Klee, 1997), and confirm that clinicians in general value the importance of collecting a sample of spontaneous language.

The results clearly show that the majority of the respondents use informal procedures (87%) or standardised tests (62%) to collect language samples. When considering standardised tests, a majority of respondents (54%) used the *Bus Story* (Renfrew, 1995) for purposes of screening, diagnosis, goal-setting, and evaluation of progress. Unfortunately, the survey did not ask the reason for using this particular test (e.g., cost, duration, ease of scoring, value of the results). Although the *Bus Story* has been used for a significant number of years, it has not been normed on an Australian population. Furthermore, sensitivity of this test to detect language impairment is weak (Pankratz, Plante, Vance, & Insalaco, 2007), with recent research conducted in the US suggesting this test may result in overidentification of language impairment in children with typical development. While the *Bus Story* yields standardised information and grammar scores, which provide information about the child's ability to include relevant events and length and complexity of their longest utterances, the survey did not capture how clinicians used the information obtained from the *Bus Story*.

When asked about the elicitation context used for language sampling purposes, clinicians generally tended to use developmentally appropriate contexts (see Westerveld,

2011), and clearly varied their elicitation procedures depending on their clients' age (see figure 2). It was surprising to note that the most frequently used context for eliciting spontaneous language in high school-aged clients were personal narratives. During the high school years, students are typically exposed to expository materials, including informative texts about a wide range of specialised topics (Australian Curriculum Assessment and Reporting Authority [ACARA], 2012; Nippold & Scott, 2010). Eliciting expository samples would not only conform more closely to the school curriculum, it would also yield more complex language samples that are more likely to reveal a students' strength and weaknesses in linguistic performance. Unfortunately, the survey did not ask the SPs to provide a rationale for their choice of elicitation context.

The survey results indicated that the typical length of an elicited language sample was between 16 and 23 utterances. This is shorter than the length of samples reported by Kemp and Klee (1997) and deemed too short for detailed analysis of particular language features, such as use of grammatical morphemes and evidence of semantic categories, or discourse features such as mazing behaviour (Heilmann, Nockerts, & Miller, 2010). For these types of analyses, samples of at least 50 utterances are recommended (Miller, 1996). However, as Heilmann et al. (2010) explain, shorter samples may be appropriate as part of a comprehensive assessment battery of children's oral language skills, or as a progress measuring tool.

It was interesting to discover that only half of the clinicians tended to record their samples; once recorded, clinicians were more likely to listen to the sample afterwards and/or transcribe it. Furthermore, nearly 50% of the respondents reported transcribing the samples in real-time. Further analysis showed that these trends were similar across the clients' age ranges from 0 to 11 years old, suggesting the decision to record and/or transcribe the sample



is not related to the child's spoken language output. Rather, this decision may be influenced by time pressure or simply be habitual practice for about half of the clinicians surveyed.

The majority of SPs reported undertaking an informal analysis of the language sample and only one third of the clinicians said they performed detailed analysis. It was surprising to find that, despite a rapid change in technology over the last two decades, only 12.5% of the respondents used computer-assisted language sample analysis (such as SALT or CLAN), which seems a small increase compared to Kemp and Klee's 8% back in 1997. When asked if respondents would use a transcription and analysis service, 57% reported they would, which supports the hypothesis that possible reasons for the reportedly low use of computer-assisted language sample analysis by clinicians may be time requirements or lack of training / professional development.

### *Limitations*

There are several limitations to the current study. First, the survey was hosted online, which means that perhaps more computer literate people responded. In addition, the survey used a snowball sampling technique, where SPs were allowed to invite colleagues to complete the survey. Although this method seemed appropriate considering there is currently no national register of practising speech-language pathologists (to allow for random sampling), it is not clear if the results from this survey reflect the practices of the general speech-language pathology population. Finally, we did not seek information on the use of language sample analysis with clients from culturally and linguistically diverse populations, which would have been very relevant to the Australian context (Williams & McLeod, 2012).

### *Conclusion and future directions*

The results from this survey clearly show that language sampling is frequently used by clinicians in Australia. However, we need to reiterate Kemp and Klee's (1997) conclusion that despite the fact that clinicians find language sampling useful, clinical practice needs to

change to ensure these samples are recorded and transcribed, and analysed in more detail. Only by transcribing the samples can detailed analysis of children's language performance be undertaken which will not only allow for effective goal setting, it will also enable objective progress monitoring following intervention.

To improve the clinical use of LSA, several options should be explored. These include training of our current speech-language pathology students, offering professional development to practising clinicians, establishing transcription labs, and the creation of local norms of language performance. While many university courses provide training in language sample analysis early in their programs, this may not be utilised in clinical practice once students graduate. Future research may seek to survey current speech-language pathology students and university lecturers across Australia to determine whether LSA is taught in these programs, what LSA tools are used, and whether students believe they will continue to utilise these tools when they enter the workforce. In addition, regular professional development courses in LSA could be organised across Australia, perhaps through Speech Pathology Australia. These workshops could utilise face-to-face training or be conducted online. The Systematic Analysis of Language Transcripts (SALT) website has free online training modules available, which could potentially be used for 'independent study' under the Speech Pathology Association's Professional Self Regulation program. Another way to increase the use of transcription and detailed analysis of language samples may be to establish a transcription laboratory. Although this service is currently available overseas, an Australian-based laboratory employing student clinicians may be a feasible local option, where samples could be transcribed and analysed by the laboratory and sent back to clinicians for interpretation and use in clinical goal setting and outcome measurement. Finally, perhaps the creation of Australian norms of typical language performance may encourage clinicians to transcribe and analyse their language samples in more detail, rather than rely on standard

scores from broad-spectrum language tests that are frequently normed on overseas populations.

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Table 1. Number of respondents by state / territory of Australia

State / Territory	No of		No of SPA
	respondents	% of total	members (%)
Queensland	60	23.3	877 (18)
Victoria	40	15.6	1412 (29)
Northern Territory	5	1.9	40 (1)
Western Australia	65	25.3	556 (11)
New South Wales	48	18.7	1492 (31)
Tasmania	16	6.2	98 (2)
Australian Capital Territory	10	3.9	50 (10)
South Australia	13	5.1	359 (7)
<b>Total</b>	<b>257</b>	<b>100</b>	<b>4,884</b>

*Note.* SPA, Speech Pathology Australia

Table 2. Use of standardised measures to elicit language sample (including the *Bus Story*) by state or territory

<b>State/Territory</b>	<b>Total No of respondents</b>	<b>Respondents who use standardised measures (% of total)</b>	<b>Respondents who use the <i>Bus Story</i> (% of using standardised measures)</b>
Queensland	60	48 (80%)	34 (71%)
Victoria	40	16 (40%)	13 (81%)
Northern Territory	5	3 (60%)	1 (33%)
Western Australia	65	47 (72%)	46 (98%)
New South Wales	48	27 (56%)	3 (14%)
Tasmania	16	9 (56%)	5 (56%)
Australian Capital Territory	10	4 (40%)	3 (75%)
South Australia	13	4 (31%)	2 (50%)

*Note.* Bus Story (Renfrew, 1995)



Figure captions

Figure 1. Context used for eliciting spontaneous language by age of client

Figure 2. Factors influencing the choice of language sample elicitation context



