



*Assessing the Language of Aboriginal Canadian Children:
Towards a More Culturally Valid Approach*



*L'évaluation du langage des enfants autochtones canadiens :
vers une approche plus culturellement valide*

KEY WORDS

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Abstract

This article discusses questions and issues to be considered when conducting language assessments with Canadian Aboriginal children. Commonly used assessment practices that range from standardized testing to child-centered approaches, along with their strengths and limitations and evidence that might support or call into question their continued use with Aboriginal children are presented. Suggestions for the development of promising assessment practices and approaches for these children are proposed that might better represent the communication abilities and capture the existing needs of Canadian Aboriginal children.

Abrégé

Cet article discute des questions et des problèmes à prendre en compte quand on fait des évaluations du langage auprès d'enfants autochtones canadiens. On présente les pratiques d'évaluation communément utilisées, qui vont des tests standardisés aux approches centrées sur l'enfant, ainsi que leurs forces et leurs limites, et la preuve qui pourrait soutenir ou mettre en doute leur utilisation avec des enfants autochtones. On propose des suggestions pour le développement de pratiques et d'approches d'évaluation prometteuses pour ces enfants, qui pourraient être plus représentatives des habiletés de communication et capter les besoins actuels des enfants autochtones canadiens.

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The Language Assessment of Aboriginal Children

Many questions and issues surrounding the valid and unbiased language assessment of Aboriginal children are unresolved. No test administration principles or procedures deemed to be appropriate to the assessment of First Nations, Métis, or Inuit children, who have been referred for potential language difficulties and who present with a variety of communication and behavioral characteristics, have been agreed upon in order to ensure that these children receive an appropriate and culturally valid assessment. This situation is compounded by a lack of culturally adapted test tools, the lack of accessible services in speech-language pathology (especially from culturally competent clinicians), and the diversity of the cultural, linguistic, and geographic environments represented by Aboriginal communities; all of which complicate the situation surrounding the appropriate and accurate assessment of Canadian First Nations, Métis, and Inuit children (Speech-Language & Audiology Canada (SAC), 2010). The development of a more culturally valid approach to the assessment of Aboriginal children is therefore urgently needed and requires careful deliberation and discussion.

Reasons for conducting communication assessments include screening for potential speech and language problems, establishing a baseline level of functioning, establishing goals for intervention, and measuring changes resulting from intervention (Hegde & Maul, 2006; Hegde & Pomaville, 2013; Owens, 2010; Paul & Norbury, 2011). Areas typically considered for assessment by the speech-language pathologist (S-LP) include production and comprehension in the domains of the content, form, and use of language (Bloom & Lahey, 1978; Hegde & Maul, 2006; Owens, 2010; Paul & Norbury, 2011). The assessment of language ability and communicative functioning may be carried out in a number of different ways and in a variety of combinations. The most common approaches to assessment used in speech-language pathology are standardized testing, questionnaires and rating scales, criterion referenced procedures, language sampling, and dynamic assessment. These approaches might be perceived as falling along a continuum of what Hedge and Maul (2006) refer to as 'standardized' to 'child-centered' or 'traditional' to 'alternative' or 'informal' approaches. All of these approaches have a potential role in the assessment process and have certain advantages; however, if not given proper consideration and examination they also entail certain inherent limitations when used with Aboriginal children. While the evidence base to support their effective use with this population of children is sorely lacking, these approaches and procedures are nevertheless currently

being widely used in assessing Canadian Aboriginal children. Many of these approaches and procedures are open to various forms of assessment bias that have the potential to result in incorrect interpretations of performance and misdiagnoses that may impact the perceived need for services and subsequent placement decisions (Hilton & Mumma, 1991; Peña & Quinn, 1997; Stockman, 2000). Questions for consideration in assessing Aboriginal children include issues surrounding the appropriate use and scoring of existing standardized tests, the potential utility of developing new assessment tools that might be more applicable to the population, and the desirability of adopting alternative perspectives on assessment for these children that may be more likely to ensure they receive a culturally valid appraisal, all of which will be discussed in more detail in the sections that follow.

The Aboriginal Context

Much has been written about the social, political, educational, and health issues faced by the Aboriginal peoples of Canada at the present time. The geographic diversity in which Aboriginal children currently reside, which includes both urban and remote on and off-reserve settings, has an important impact on current issues faced by Aboriginal Canadians. Recent statistics show that approximately 50% of Aboriginal Canadians live in urban areas, and the remaining 50% live on reserves and in rural non-reserve areas (Statistics Canada, 2007). Issues faced by Aboriginal communities include high unemployment rates and reduced levels of income, poor housing conditions, complex health challenges, and a higher incidence of disabilities and acute illnesses than individuals in the general Canadian population (Assembly of First Nations, 2008; SAC, 2010; Guider, 1991; Health Canada, 2003; Mendelsen, 2006; Statistics Canada, 2006). These problems are particularly acute for individuals living on reserves. This is significant as it has been demonstrated that economically disadvantaged individuals are at greater risk for disabilities and that the etiologies of these disabilities often overlap with poverty (Thomas-Presswood & Presswood, 2008; Roseberry-McKibbin, 2008). Aboriginal peoples are also more likely to experience poorer mental and social health than the general Canadian population, the effects of which can create complex challenges for Aboriginal children and their families (Assembly of First Nations, 2008; SAC, 2010; Health Canada, 2003). Aboriginal children in general, and particularly those residing in remote and isolated communities in Canada, are also reported to have substantially reduced educational outcomes, in terms of the numbers of students attaining a high-school education as well as enrollment in post-secondary

academic institutions, when compared to their non-Aboriginal peers (SAC, 2010; Canadian Language and Literacy Research Network, 2007; Mendelsen, 2006; Ontario Ministry of Education, 2006; Statistics Canada, 2006).

At the present time we have little research that has examined the etiology of communication difficulties, their type and severity, or the existing need for S-LP services in Canadian Aboriginal communities (SAC, 2010). However, the incidence of children and youth with speech and language difficulties in Aboriginal communities is reportedly quite high (SAC, 2010; Findlay & Kohen, 2013). Speech and language skills are crucial components of academic, vocational, and social success, all of which constitute important determinants of health (SAC, 2010; Paul & Norbury, 2011; World Health Organization, 2007). Deficits in speech and language propagate throughout a child's lifetime, with increasingly negative consequences for learning, employment, and social and personal adaptation. One source of potential assistance to enhance the educational outcomes of Aboriginal children lies in the provision of culturally appropriate speech and language assessment and intervention services to support language development and learning, beginning at an early age. Early identification and intervention services for children with speech and language difficulties have been shown to result in long-term improvement in communication development and educational achievement (Law, Garrett, & Nye, 2004; Paul & Norbury, 2011). Such benefits should be extended to all children residing in Canada, including those living in Aboriginal communities. Unfortunately, many Aboriginal community members have limited access to all types of health and child care services, preschools, and daycares and may experience serious obstacles to obtaining access to appropriate S-LP assessment and intervention services in particular (Ball, 2009; SAC, 2010; Eriks-Brophy, Quittenbaum, Anderson, & Nelson, 2008; Trumper, 2004).

More than 50 Aboriginal languages are spoken in Canada, and in some communities the traditional language is used as the primary mode of communication and of education (Cook & Flynn, 2008; McIvor, 2009; Norris, 2008). In these communities, children arrive at school fluent in their home language and with limited exposure and ability to speak in either English or French (Ayukawa, this volume; SAC, 2010; Norris, 2008). Linguists and S-LPs working in Aboriginal communities in Canada have also identified aspects of dialect use involving phonological, semantic, and syntactic variants from mainstream Canadian English that are often referred to as First Nations English Dialect (FNED) (Ball, Bernhardt, & Deby, 2006; Kay-Raining Bird, 2011; Peltier, 2011, this volume). Differences between standard English and

local dialect use would be expected to have an important impact on assessment results and their interpretation in the areas of speech and language. Many communities are implementing language revitalization strategies with the goal to revive and preserve their local languages so they will thrive and flourish for future generations (Aboriginal Language Initiative, 2011; McIvor, 2009; Statistics Canada, 2004). These revitalization strategies include educational programs where pre-school and school age children are taught all or a portion of their daily education in the Aboriginal language beginning as early as the daycare years, with the goal to foster bilingualism and biculturalism (McIvor, 2009; Norris, 2008; Statistics Canada, 2006). The diversity of Canadian Aboriginal communities is described in greater detail by Kay-Raining Bird (2011).

Cultural Considerations in Language Assessment

In light of the wide range of linguistic, cultural, and living contexts in Aboriginal communities across the country and the current lack of evidence regarding best practices in assessment, it is necessary to make inferences from research with other populations including unilingual Euro-Western children representing the dominant culture, as well as non-Aboriginal bilingual children and/or minority language/culture children. Conducting an appropriate assessment also involves an awareness of the language socialization practices, the preferred learning styles of Aboriginal children, and the sources of potential bias inherent to many components of the assessment process in speech-language pathology, including in particular the use of standardized assessment instruments and procedures, which have the potential to misidentify and misdiagnose Aboriginal children (Ball, 2009; SAC, 2010).

A large body of existing research has documented considerations related to the assessment and interpretation of the communicative performance of bilingual and culturally and linguistically diverse (BLCD) children. Best practices with respect to the assessment of BCLD children provide highly relevant insights that should be taken into consideration in the assessment of Aboriginal children. Considerations regarding the non-discriminatory assessment of bilingual Aboriginal children parallel many of those principles and suggestions contained in the literature for the appropriate assessment of BCLD children in general. These principles involve issues regarding the specific nature of the assessment tools to be used as well as the manner in which these assessments should be administered. General descriptions of culturally valid assessment in speech-language pathology highlight several well-known guiding principles that are summarized in SAC's position paper on

speech-language pathology and audiology assessment and intervention in multicultural and multilingual contexts (Crago & Westernoff, 1997).

A primary clinical decision to be determined through the communication assessment of BCLD children is whether the child's observed language and learning difficulties are to be attributed primarily to language differences or if they instead constitute a disorder (Hedge & Maul, 2006; Kohnert, 2008; Paradis, Genesee & Crago, 2011; Paul & Norbury, 2011; Roseberry-McKibbin, 2007). A determination of language disorder can only be made with reference to the language-learning context of the child, and must be based on evidence that the disorder is present in all languages used by the bilingual/multilingual child (Brice, 2002; Kayser, 2002; Kohnert, 2008; Paradis et al., 2011). Arriving at an appropriate clinical judgment about the presence or absence of a possible communication disorder involves the examination of numerous factors related to both children and their parents (Crago & Cole, 1991; Rhodes, Ochoa, & Ortiz, 2005; Roseberry-McKibbin, 2008). *Child factors* to be taken into consideration include, among others, the family constellation, the home language environment, the amount and extent of the child's exposure to the second language, the child's language dominance and fluency in the languages of interest, and the child's educational history and patterns of school attendance. Relevant *parental variables* include their own educational histories and educational levels, their degree of proficiency and literacy in the languages of interest, their employment schedules and responsibilities, their ability and opportunity to assist the child with learning tasks, and the language input and exposure they provide to their children in the home.

The high incidence of fluctuating or permanent hearing loss in Aboriginal children is another primary consideration when conducting a communication assessment. While the statistics related to hearing loss in children vary across Aboriginal groups, some children experience significant episodes of auditory deprivation associated with acute or chronic otitis media, with Inuit children being highly susceptible (Ayukawa, this volume; Ayukawa, Belanger & Rochette, 2008; Ayukawa, LeJeune & Proulx, 2004; SAC, 2010; Langan, Sockalingham, Caissie, & Corsten, 2007). The child's hearing status has the potential to have a negative effect on performance that may be incorrectly interpreted as a lack of communicative competence. Verifying a child's hearing status is an important consideration when initiating any form of assessment.

An awareness of the language socialization practices in operation in the child's family and community is

another important consideration in determining whether an Aboriginal child presents with a language disorder or a language difference. These practices vary across Aboriginal contexts and communities, and it is therefore essential that the clinician become familiar with local practices and beliefs surrounding children as communicators and take these into consideration when organizing a language assessment. Such detailed knowledge of community-based speech and language characteristics and practices is needed to reduce the possibility of over-diagnosis of communication difficulties in Aboriginal children. An extensive body of literature conducted primarily in the 1970s and 1980s has shown that Aboriginal groups may differ from the North American mainstream model in their ways of viewing the roles of children within their society and, correspondingly, in the ways that children are socialized to use language in communicative interactions. This literature has documented how cultural values including the avoidance of competition, a focus on group orientation versus individualism, the organization of turn-taking, the role of silence, and the maintenance of appropriate interactional hierarchies influence the organization of communicative behavior between adults and children in many Aboriginal communities (Au & Jordan, 1981; Crago, 1988; Erickson & Mohatt, 1982; Eriks-Brophy, 1998; Eriks-Brophy & Crago, 1994; 2004; Jonk & Enns, 2009; Philips, 1983; Scollon & Scollon, 1981). Other conversational elements including politeness forms, the appropriateness of conversational topics, and the use of praise and reinforcement are also open to cultural assumptions and misinterpretations that might lead to potential bias when conducting a communication assessment of an Aboriginal child (Crago, 1988; Erickson & Mohatt, 1982; Eriks-Brophy, 1992, 1998; Eriks-Brophy & Crago, 1994; 2004; Lipka, 1991; Philips, 1983; Scollon & Scollon, 1981).

Cultural variation has also been found to exist in the use of nonverbal communicative behaviors such as eye gaze, personal space, touching, and back channel signalling (Eriks-Brophy, 1998; Erickson & Mohatt, 1982; Eriks-Brophy & Crago, 1994; Lipka, 1991; Philips, 1983). A child's use of nonverbal communicative behaviors, and particularly the use of eye gaze, are typically observed and recorded as part of a communication assessment (Hedge & Maul, 2006; Paul & Norbury, 2011). For example, cultural differences in the appropriateness of direct eye contact between a child and an adult in particular have the potential to lead to serious misinterpretations of a child's performance during a communicative interaction, regardless of the assessment approach used.

Research findings related to the language socialization of various groups of Aboriginal children in Canada in

particular emphasize the potential of various forms of questioning to have a significant impact on performance in communication assessments. One-on-one conversations with adults, speaking alone as opposed to in a group, and an emphasis on individual oral performance are dimensions of the testing situation that may be unfamiliar to children from some Aboriginal communities, and particularly to Inuit children of Nunavik (Crago, 1988; Crago, Eriks-Brophy, Pesco & McAlpine, 1997; Eriks-Brophy & Crago, 1994; 2004). Other competencies of particular importance to the assessment of communicative abilities with Aboriginal children include experience in producing a narrative and responding to known-answer questions, both of which would have significant effects on children's performance on any type of language assessment. For example, Inuit children in Nunavik may not have received extensive practice in these abilities outside of the school context or prior to school entry (Crago, 1988; Eriks-Brophy, 1992; 1998).

Finally, Aboriginal children may display different cognitive learning styles or learning preferences when compared to those of non-Aboriginal children (for a review, see Rasmussen, Baydala & Sherman, 2004.) Learning styles reflect how individuals approach different learning tasks (Smith & Shade, 1997) while learning preferences represent different ways of perceiving, processing, and organizing information (Appleton, 1983; Pepper & Henry, 1986; Ryan, 1992; Simmons & Barrieau, 1994). A number of studies have demonstrated that cultural differences exist in how individuals 'come to understand the world' (Appleton, 1983). These differences are described as being a direct consequence of the communicative and interactional norms and values that are emphasized within a cultural community (Rasmussen, Baydala & Sherman, 2004). Aboriginal children have been reported to demonstrate strengths in visual-spatial abilities and to show preference for cooperative, collaborative, group oriented learning and hands-on educational activities as opposed to individual or competitive tasks and approaches (Kleinfeld, 1971; Nuby & Oxford, 1998; MacArthur, 1975; Simmons and Barrieau, 1994; Smith & Shade, 1997). Aboriginal children have also been described as being holistic learners, perceiving and learning about the world from whole to part, as opposed to building knowledge through assembling discrete parts into a whole. Respecting elements of these preferred learning tasks and styles in teaching is suggested to contribute to more successful outcomes among Aboriginal students. These elements also have implications for adapted communication assessment and intervention practices that might contribute to optimal descriptions of children's competence and abilities (Rasmussen, Baydala & Sherman, 2004).

It should be noted that some of the literature reviewed above is relatively dated and may be perceived as promoting stereotypes regarding Aboriginal children's preferences and thought processes. More recent research into these domains is required in order to determine the extent to which language socialization practices and learning strengths and differences currently exist in various Aboriginal groups and how these differences might impact the assessment process in speech-language pathology. It is also important that the practitioner recognize that the Aboriginal population in Canada is widely variable in language and culture, and that within each cultural group there exists a great deal of variability and diversity. This diversity makes it impossible to identify a set of normal learning and communicative behaviors or a preferred learning style that would characterize all Aboriginal children, or any other heterogeneous cultural grouping. To suggest that an individual's cognitive attributes are fixed or predetermined by their cultural and linguistic background and that learning strategies must always be matched to individual preferences does not assist students to learn alternative approaches to acquiring new knowledge, limits their life chances, and is an essentially discriminatory perspective. Individuals representing any cultural group do not necessarily have only one learning style, and students can be expected to thrive from being exposed to and proficient in using a variety of learning strategies.

Nevertheless, there is the potential for miscommunication and misinterpretation to occur when the clinician's communication and cognitive styles differ from those of the child being assessed (Crago & Cole, 1991; Cummins, 1989; Erickson, 1987; Eriks-Brophy, 1998). Awareness and sensitivity to such issues on the part of the clinician may allow for the organization of an assessment protocol that reduces or prevents opportunities for such negative consequences to arise. This has particular relevance for the child-centered assessment approaches that are described in more detail below, where the child's ability to respond to the structure, organization, and social interaction surrounding the teaching of the task and the strategies applied to the learning of the task form the basis of the evaluation of the child's communicative abilities.

Assessment Bias

An article by Taylor and Payne originally published in 1983 remains an excellent source for the description of potential forms of bias in the S-LP assessment of BCLD children that are highly relevant to the assessment of the communication abilities of Aboriginal children. Taylor and Payne (1983) describe biases related to the referral source, the examiner,

and the measures and procedures used, all of which have an important impact on the interpretation of assessment results. *Referral source bias* suggests that the individual referring a child for assessment has differing perceptions and understandings regarding what might be considered 'normal' as opposed to 'disordered' abilities in a particular domain that contrast with those in operation in the child's community of origin. *Examiner bias* involves the (usually unconscious) projection of the examiner's cultural beliefs, assumptions, attitudes, and values onto individuals of other cultures, assuming that all individuals share their world view. *Bias in test procedures and materials* has been described in detail in a variety of sources (Hilton & Mumma, 1991; Peña & Quinn, 1997; Stockman, 2000), and consists of situational bias, value bias, and linguistic bias. *Situational bias* refers to the testee's unfamiliarity with the framework of assessment procedures and the communicative and interactional routines implicit to the assessment process. *Value bias* refers to unfamiliarity with situations in the assessment that imply a certain preference or a value judgment, to which the child is expected to respond. *Linguistic bias* refers to a lack of familiarity with the language or dialect in which the assessment is being conducted. While dialectal features are not considered to be a form of disordered speech, S-LPs may have unconscious prejudices regarding dialect use or lack information about local dialects. Without knowledge of the local dialect, many dialectal responses would be scored as incorrect based on information contained in the examiner's manuals of most speech-language pathology assessment tools.

Reports of the potential for bias in test procedures and materials to negatively influence the assessment performance of Aboriginal children in general, and northern Aboriginal children in particular, have been primarily anecdotal. Since Northern Aboriginal children often have more limited exposure to aspects of the dominant Canadian culture, this would have the potential to influence their assessment performance. Examples of test bias specifically related to the use of standardized tests with children from three remote First Nations communities in Northern Ontario were collected as part of an investigation of the applicability of the use of videoconferencing for assessing speech and language abilities in these communities (Eriks-Brophy et al., 2008). Ten children who ranged in age from 8 to 14 and who had no suspected or identified speech, language, hearing, or learning difficulties were asked to provide answers to selected test items taken from the *Peabody Picture Vocabulary Test*, third edition (PPVT-3) (Dunn & Dunn, 1997), the *Preschool Language Scale*, fourth edition (PLS-4) (Zimmerman, Steiner & Pond, 2002), the *Clinical Evaluation of Language Fundamentals*,

fourth edition (CELF-4) (Semel, Wiig & Secord, 2003), the *Expressive One Word Picture Vocabulary Test* (EOWPVT) (Brownell, 2000) and the *Structured Photographic Articulation Test* (SPAT-D) (Dawson & Tattersall, 2001).

Bias in test materials was found to be associated with several of the above mentioned standardized tests. On the *PPVT-3*, the majority of children were unable to identify items such as hydrant, exercise, calculator, and signal. On the *CELF-4*, 5/10 children had difficulty formulating sentences based on pictures contained in the test that depicted unfamiliar events, including children crossing the street at a traffic signal, a policeman directing traffic, a blind man with a seeing-eye dog, and students observing a lesson in a chemistry lab. The children also had difficulty explaining how zoo, farm, and sea animals were related. On the *EOWPVT*, many of the children had difficulty identifying test items that were unfamiliar to their experience including aquarium, pineapple, cactus, stadium, greenhouse, and hurdle. On the *SPAT-D*, the way in which the test stimuli were presented, using a dog to elicit the desired vocabulary, distracted the children from the purpose of the task. Rather than producing the target words, 8 of the 10 participating children instead spontaneously commented that many of the stimuli were "weird" because the dog in the pictures was being treated as a person or had been placed in situations they found silly, unusual, or even "creepy". The children made comments such as "dogs don't wear people clothes or sleep in beds", and found it strange and unsettling that "that dog is living like he's a kid".

Several items on the *PLS-4* were found to contain value bias. These items involved instances where children were shown a picture of a situation and were asked to comment on what the child in the situation 'should do'. For the item in which the child is expected to ask her father's permission to play outside with her friend, the children typically provided responses such as "She can just go", "I can go" or "I will go", as asking permission for such activities is not part of the daily experience of children living in many remote communities who are given a substantial amount of individual freedom.

Approaches to Language Assessment

Typical language assessment paradigms used in speech-language pathology can be described as falling along a continuum ranging from standardized or formal testing to child-centered approaches that include criterion referenced procedures, questionnaires and rating scales, language sampling and narrative assessment, and dynamic assessment. Some of these approaches have reportedly

been used effectively in assessing BCLD children, however little evidence supporting their appropriate and effective use with Aboriginal children currently exists. The strengths and limitations of these commonly-used assessment approaches along with evidence that might support or call into question their continued use with Aboriginal children are presented in the sections that follow.

Standardized Assessment Measures

Standardized testing is the most common approach used to diagnose communication difficulties in both children and adults, and is often described as the 'gold standard' for this purpose (De Lamo White & Jin, 2011; Hegde & Maul, 2006; Paul & Norbury, 2011; Roseberry-McKibbin, 2007). Advantages of this approach include its perceived objectivity, the availability of standard, age-equivalent and other derived scores that can be used to compare an individual's performance to that of a representative sample of peers as exemplified by the normative sample, and its relative ease and convenience of administration, as stimuli and instructions are pre-determined and are contained in the administration manual and materials. Performance scores on standardized measures are typically used to determine an individual's degree of communication deficit and may be required by administrators to permit access to S-LP services (Hedge & Maul, 2006; Kohnert, 2008; Paul & Norbury, 2011).

In spite of these proposed advantages, problems with the use of standardized tests in speech-language pathology have been widely discussed in the literature. One major criticism revolves around the use of normative samples to interpret the performance of children from diverse cultural or language backgrounds (Hedge & Maul, 2006; Hedge & Pomaville, 2013; Kohnert, 2008; Roseberry-McKibbin, 2007). Standardized measures have potentially serious limitations when used with Aboriginal children in particular as a result of unrepresentative normative samples and Western (most often US) perspectives. Even when the normative sample includes children of Aboriginal descent, the numbers are typically small and the normative data are therefore likely to be unrepresentative. Additional difficulties in using standardized language tests with Aboriginal children include the multiple areas in which assessment bias may interfere with the accurate interpretation of test performance as described above, including in particular the scoring of test items that are deemed to be culturally insensitive or potentially affected by dialect differences.

Information obtained from standardized testing has been criticized for not providing a complete and detailed

picture of an individual's communicative competence and/or linguistic skill across a variety of contexts and language modalities, for not being reflective of communication abilities in real-life interactions, and for not providing sufficient and relevant information for the establishment of intervention goals (Losardo & Syverson, 2011; Roseberry-McKibbin, 2007). Since the primary purpose of standardized tests is the diagnosis of a potential language disorder, these may not be limitations of standardized tests per se; nevertheless clinicians often attempt to extract such information from the results of standardized assessments, resulting in a limited interpretation of a child's communicative abilities. A summary of potential advantages and disadvantages of the application of standardized testing in the assessment of Aboriginal children is provided in Appendix A.

Existing Practices Used to Minimize Standardized Test Bias.

In an attempt to reduce the impact of cultural, value, and/or linguistic biases of standardized tests, one common practice being used by some S-LPs working with Aboriginal children is to score certain items in a different manner from that stipulated by the test, either giving credit for failed items based on known information about the child or the community or to accommodate characteristics of the local dialect. This practice was reported as being relatively widely used during a discussion about assessment practices held at the 2009 SAC Convention Special Interest Group of S-LPs and audiologists serving First Nations, Métis, and Inuit communities, as well as during discussions at a seminar about assessment and intervention practices for Aboriginal children presented at SAC in 2011 by Eriks-Brophy and Pesco. Hedge and Maul (2006) point out that, while this may well be a temporary and well-intentioned solution to the inapplicability of standardized assessment tools for some populations, this practice invalidates the scoring of the test and makes the results difficult to interpret and to apply.

While modifying or adapting standardized measures is therefore not recommended due to the lack of normative criteria or existing research to guide the scoring and interpretation of the adapted measure (Hedge & Maul, 2006; Kohnert, 2008), this approach may nevertheless provide useful information in certain assessment situations that do not include the evaluation of performance for purposes of eligibility for service, where standardized test scores are often required. Knowledge of local language and cultural practices may be used when evaluating children's performance on standardized tests, even when the prescribed procedures are applied. For example, some clinicians track the performance of children on their caseload on test items that are perceived to be

biased and compare their responses to those of children without identified speech and language disorders from the same population base. A clinician knowledgeable about dialect issues may derive a normative score for the child's performance based on the prescribed scoring procedures and then outline in their report any clinical observations that might explain and contextualize the interpretation of that score with respect to the communication standards used in the community. This would require an in-depth understanding of the cultural norms, values, and practices underlying dialect use in a particular community.

A second reportedly common approach to circumvent the difficulties experienced with many standardized measures for use with Aboriginal children is to administer only certain subtests of a more comprehensive test tool, or to administer a series of subtests designed for assessing various sub-domains of communication from a variety of standardized tests rather than a single entire test battery (Peltier, 2011). Although not without potential sources of bias, certain tests and subtests have been recognized through personal experience as being relatively more appropriate for use with Aboriginal children than others. Peltier (personal communication, February 12, 2014) emphasized the importance of interpreting test results in view of the local community dialect as well as aspects of the child's Aboriginal worldview. As an example, Peltier points out that test items that ask a student to compare and contrast vocabulary items typically show that the First Nations students with whom she works are better at explaining similarities rather than differences between concepts. In light of this, Peltier might consider the Relational Vocabulary Subtest of the *Test of Language Development-Primary-fourth edition (TOLD: P-4)* (Newcomer & Hammill, 2008) a preferred task since it asks for how two stimulus items are alike rather than different. Peltier also mentions the utility of the Expressive Vocabulary and Word Definitions subtests of the *CELF-4* (Semel, Wiig & Secord, 2003) and the *TOLD: P-4 Oral Vocabulary* subtest in revealing insights into First Nations students' world views in communities where she has worked. She notes in particular that First Nations students with whom she has worked often do not perform well on pragmatic profiles such as those contained in the *CELF-4*, the *Pragmatic Language Skills Inventory* (Gilliam & Miller, 2006), or the *Social Language Development Test* (Bowers, Huisingsh, & LoGiudice, 2008) due to differences in discourse organization and cultural norms surrounding communication and social interaction in those First Nations communities.

A potential solution to the problem of normative samples of standardized tests not including Aboriginal

children is to develop local norms to be applied in scoring test performance. The general process and procedures for the development of local norms are described by Brassard and Boehm (2007) and include: 1) the gathering of an appropriate team for the task at hand, 2) the determination of which test(s) will be normed, 3) an informed consensus on the items of the test to be modified and the acceptable responses to all test items in light of local considerations, 4) pilot testing to assess the validity of the acceptable responses, 5) the collection of demographic and normative data related to the respondents and their communities, and 6) the maintaining of detailed records regarding the effectiveness of the local norms in discriminating between children in need/not in need of service, as well as the outcomes of intervention provided to eligible children.

While the development of local norms for a particular test is a potentially viable solution to dealing with issues of bias in standardized assessment, a relatively large sample of children is required in order that the norms might be considered valid. Brassard and Boehm (2007) suggest that a minimum of 100 children per age level is required to develop local norms that can be considered to be stable. Achieving this sample size may not be feasible for most clinicians working on their own in small Aboriginal communities, where there may not be sufficient numbers of children to meet these stringent requirements. Combining information across communities may be an acceptable solution if it is determined that children in the communities are equivalent in their language use. This would need to be decided through extensive consultation, collaboration, and research with community members and professionals in order to ensure reliable results. At the least, the development of local norms is a lengthy and time consuming process that has limited geographical applicability. The resulting norms may be applicable to only a small group of children and may therefore not represent the most desirable solution.

Translating existing tests into the language(s) used by the community is another option potentially open to the S-LP. It must be recognized, however, that the direct translation of an existing test into another language does not take into account the linguistic properties and developmental sequence of the target language and as such is not appropriate to assess the child's home language proficiency (Kohnert, 2008). The simple act of testing a child using their home language does not in and of itself ensure that testing approaches, tasks, and content are unbiased. The vocabulary and sentence structures contained in English tests may not be applicable to the child's home language, and translated test items may vary in meaning and difficulty

from those contained in the original test. The direct translation of tests also has the potential to contain items that are culturally biased, in spite of these being presented to the child in their home language. Finally, since the administration of the test would have changed, application of the existing norms would not be appropriate (Hedge & Maul, 2006). Local norms could be collected, but the difficulties associated with the collection and development of local norms to the translated test would be equivalent to those previously described, making this approach potentially unsuitable and ineffective in dealing with the inherent problems of test bias.

A better approach, although complex, labor intensive, and demanding as well, would be to develop an original test, which is linguistically and developmentally appropriate for the language of the community. Normative data for the test would need to be collected and used to compare the child's performance to community age-level expectations related to language content, form, and use. An example of this approach is the bilingual Inuktitut and English language screening tool developed through a partnership between the Qikiqtani School Operations of Nunavut and researchers at Dalhousie University, as described by Dench, Cleave, Tagak, and Beddard (2011).

In light of all of the issues described above, the ultimate role of standardized testing in the assessment and diagnosis of potential language difficulties in Aboriginal children remains an unresolved question. The degree to which specific tests might accurately reflect the communication abilities of children who have not been represented in the normative population of a test, the inherent biases contained in the content of many commonly-used standardized assessment measures in speech-language pathology, and the impact of such considerations on the evaluation and interpretation of communicative performance of minority culture children as a whole and of Aboriginal children in particular should continue to prompt substantial discussion and deliberation in the field of speech-language pathology.

Published Questionnaires and Rating Scales. Published questionnaires and rating scales are often used to collect case history information and/or perceptions of a child's development, behaviors, abilities, and levels of functioning in various domains from individuals familiar with the child; including family members, day care providers and educational professionals (Hedge & Pomaville, 2013; Paul & Norbury, 2011). The information obtained from these individuals has been found to be reliable, informative, and generally well correlated with clinician-measured data

(Boudreau, 2005; Dale, 1991; Hedge & Pomaville, 2013). Rating scales and questionnaires that have been reported as being used by S-LPs who work with Canadian Aboriginal children in *Healthy Babies Healthy Children*, Head Start, and neonatal hearing screening programs include the *Nipissing District Developmental Screen (2000)*, the *Ages and Stages Questionnaire-3* (Squires & Bricker, 2009), the *Denver Developmental Screening Test (DDST-II)* (Frankenburg & Dobbs, 1992), and the *Early Development Instrument (EDI)* (Offord & Janus, 2007). Nevertheless, the reliability and validity of these and other screening tools and developmental questionnaires for Aboriginal children remain to be determined. Most existing measures have been developed for use with majority culture families and many of them contain normative samples, making them susceptible to similar sources of bias in their application and scoring as those previously discussed for standardized tests, even when used for screening purposes (Baydala et al., 2009; Choi & Pak, 2005). For example, child development questionnaires often contain items related to child care arrangements such as sleeping and feeding, as well as communication and play development. These items tend to be based on North American assumptions about how children should be raised and expectations of what they should be able to do at certain ages. Such skills and constructs may not translate well into other cultures, and may be particularly inappropriate for Aboriginal children. For example, a common question on such questionnaires is whether or not the child sleeps in his/her own bed. The underlying purpose of the question is to establish aspects of a child's independence. For many Aboriginal children, however, this is an inappropriate and culturally loaded construct leading to the potential for misinterpretation of the child's living environment and level of functioning. Again, clinicians working with Aboriginal children must be aware of the language socialization and parenting practices, the lived reality and the developmental expectations of the children they serve and should carefully examine questionnaires and rating scales for elements containing potential bias in light of this information.

Since many questionnaires and rating scales are not scored using normative information, these may be more easily modifiable for use in a specific Aboriginal context or community. Such adaptations nevertheless require knowledge, familiarity, and insight into home and community ways of raising and interacting with children. Input from parents, interpreters, and cultural informants is critical to the accurate interpretation of information obtained from questionnaires and rating scales. Without such input, information obtained from these sources may be more accurately interpreted as a reflection of a

child's or family's degree of acculturation rather than as a measure of performance, skill, or level of functioning. Taking an ethnographic approach to the judicious selection of questions that might be relevant to the specific situation and context of the child as suggested by Crago and Cole (1991) may provide more insightful information than the administration of questions contained in a pre-conceived questionnaire.

Child-centered Assessment Approaches

'Child-specific', 'child-centered', 'non-traditional', or 'informal' assessment approaches involve procedures that are specifically tailored to examine the potential strengths, weaknesses, and needs of an individual child (Hedge & Maul, 2006). Such approaches focus on determining the child's unique communicative abilities and challenges. They are not usually intended to be used to compare the child's performance to normative data or to specified mastery criteria, but rather to assist in making informed clinical decisions by interpreting the data in light of developmental expectations. For example, parental, family, and teacher interviews may be used to obtain information regarding the child's cultural and linguistic background as well as the child's skills in speech and language production and comprehension in diverse contexts. Using selected stimulus items that are familiar to the child and are culturally adapted, observing the child in a variety of communicative contexts and obtaining representative language samples provides information on how the child achieves various communicative outcomes. These strategies may afford the child greater opportunities to display acquired language abilities and to demonstrate success.

While child-centered approaches to assessment are often perceived as being less open to the types of assessment bias described above, they nevertheless rely on an in-depth understanding and correct interpretation of verbal and non-verbal communicative behaviors and learning styles demonstrated by children in various contexts. As such, they are equally open to biased interpretation when used by a clinician unfamiliar with Aboriginal communities and their communicative values and practices. Practitioners wanting to utilize child-centered approaches to language assessment with Aboriginal children must be familiar with the language socialization practices, the communicative norms and values, and the learning styles predominant in the cultural community of the individual child. Various child-centered approaches to language assessment are described in the sections below. A general summary of potential advantages and disadvantages of the application of child-centered

approaches to the assessment of Aboriginal children is provided in Appendix B.

Criterion Referenced Assessment. Hedge and Maul (2006) refer to criterion-referenced assessment as a middle ground between standardized testing and child-specific measures of language performance. Criterion referenced assessment refers to the practice of interpreting a child's performance in relation to a performance standard rather than in relation to a set of specified test norms. Essentially, this approach attempts to determine at what level the child is performing and whether or not this level is developmentally appropriate for the child (Hedge & Maul, 2006). For example, a clinician may examine the child's use of specifically identified skills and compare these to a pre-set mastery criterion in order to determine whether these are adequate for functional use in an environment such as a daycare or classroom. Skills that do not meet the level of mastery predetermined by the clinician are then targeted for intervention.

There is some existing evidence that criterion referenced approaches are appropriate for and have been used successfully with bilingual children (Hedge & Maul, 2006), however no published evidence related to the use of this approach with Aboriginal children was located in the literature. Nevertheless, the approach has interesting implications for the unbiased assessment of Aboriginal children. The approach requires that multiple opportunities be provided for the child to produce the desired behavior in order that an accurate response level can be calculated. This level of performance can then be used as a baseline in determining later treatment progress. Furthermore, the clinician may select stimulus items that are of particular relevance to the child's cultural background, thus possibly enhancing the child's potential to perform well on the task. In this approach, the clinician may adopt a performance standard based on the communication styles and practices of the local community, thus avoiding one of the major pitfalls of the standardized testing approach. Criterion-referenced assessment also allows for an in-depth examination of specific language skills, which most standardized tests are not intended to do.

On the other hand, the criterion-referenced approach often requires a significant amount of preparation and may involve extensive time for observation and analysis. An understanding of the developmental progression of language acquisition of children in the target community would be required in order to establish an appropriate mastery level for a targeted language skill and determine whether or not the child's performance is at an age-

appropriate level. This in turn may require the application of developmental norms, a practice that entails some of the same potential dangers as the application of standardized test norms as described above when used with Aboriginal children. Clinicians would need to be well versed in the linguistic and cultural background of the community in order to apply this approach without bias. The determination of an acceptable mastery criterion level may also pose challenges to the effective implementation of criterion-referenced assessment practices. Tasks must be carefully selected to ensure they are appropriate, relevant, and applicable for use with the Aboriginal child and to ensure that any potential for cultural conflicts in learning strategies, patterns, and preferences are eliminated.

Language Sampling is often used in conjunction with other assessment procedures as one type of criterion referenced approach, but may also be used independently as a means to examine an individual's communicative abilities as a function of context, interlocutor, or specific communicative skills in a relatively naturalistic environment (Hegde & Maul, 2006; Hegde & Pomaville, 2013; Owens, 2010; Paul & Norbury, 2011). In most cases, the sample is transcribed and analyzed at either a micro- or macro-structural level. Microstructure analyses include measures of expressive language including vocabulary, semantic relationships, syntactic structure, morphology, pragmatics, speech sound production, and fluency (Paul & Norbury, 2011). Typical language measures derived from language sampling techniques include mean length of utterance (MLU), type-token ratios (TTR), and frequency of various sentence types, as well as the percentage of correct productions for various grammatical morphemes in obligatory contexts or various phonemes (Hegde & Maul, 2006; Owens, 2010; Paul & Norbury, 2011). These can then be compared to existing findings regarding typical development in order to make an informed judgment regarding the presence of a language disorder. In some cases, a criterion level of performance falling 1.5 standard deviations below the mean for a specific language measure can be applied in diagnosing a language disorder and justifying eligibility for service (Hegde & Maul, 2006). The Systematic Analysis of Language Transcripts (SALT) system (Miller, Andriacchi, & Nockerts, 2011) can be used with a transcribed language sample to automatically compute analyses of lexical, syntactic, semantic, pragmatic, rate, fluency, and error categories that can be compared to the system's language sample reference databases for developmental comparisons.

While language sampling appears to be a relatively less biased and more child-centered approach to the

assessment of language abilities, it is nevertheless not immune to criticisms of potential bias in several key areas. The context used to elicit the sample may contain situational or content bias if it is unfamiliar to the child or involves communicative tasks, culturally biased materials, or culturally inappropriate communicative partners. MLU and TTR appear to be relatively objective measures of expressive language, yet the norms for these indices have been derived based primarily on majority culture English speaking children from middle class socio-economic backgrounds whose communication levels may not be representative of all children (Paradis et al., 2011; Roseberry-McKibbin, 2007). Few norms for these measures exist for languages other than English, and the direct application of English norms to children speaking other languages or dialects is inappropriate. Dialect differences can also come into play in the analysis of speech production and morphological correctness, and cultural differences in discourse organization and pragmatics may continue to predispose the culturally-uninformed clinician towards a deficit interpretation of an individual child's performance.

On the other hand, the collection of local norms related to MLU and TTR for various age groups may be a realistic and feasible solution to enhancing the applicability of the language sampling approach for Aboriginal children. Collecting examples of the systematic characteristics of morphological, semantic, and phonological productions and language use related to particular Aboriginal community dialects, in a similar way as has been done for African American English for example, would potentially contribute to the unbiased interpretation of language samples obtained from Aboriginal children. The SALT system (Miller, Andriacchi, & Nockerts, 2011) has the capacity to develop a comparison database using locally collected language samples which could provide a very useful tool against which the individual performance of a child from that community might be compared in a relatively unbiased manner.

Narratives are a form of discourse that are often included in language sampling analyses, thus also falling under the criterion referenced perspective on language assessment. Various approaches to micro- and macro-structural analysis are then typically used to examine and evaluate the linguistic complexity and discourse structure of children's stories. In terms of macrostructure, a considerable body of research has documented the cultural variation that exists in the ways in which narratives are constructed and organized, and consequently in how these narratives should be viewed and analyzed (Berman & Slobin, 1994; Gutierrez-Clennen & Quinn, 1993; Heath, 1986; Kay-

Raining Bird & Vetter, 1994; Michaels, 1981; McCabe & Bliss, 2004–2005; Peltier, this volume; Peña et al., 2006; Pesco, 1994; Roseberry-McKibbin, 2007). Some bilingual children and Aboriginal children in particular may arrive at school with limited ability to formulate an episodically structured narrative and little familiarity with the components of narratives valued by educators in mainstream classrooms (Khan & Paddick, this volume; Peltier, this volume; Peña et al., 2006). In particular, researchers including Cronin (1982), Kay-Raining Bird and Vetter (1994) and Pesco (1994), have described how attempting to apply traditional story grammar and high point analysis approaches to narratives produced by school-aged Aboriginal children in various United States and Canadian contexts provides only mixed results. They argue that the traditional story grammar analysis may not be the most appropriate model against which an Aboriginal child's narrative may be most usefully compared as it does not allow for the proper recognition of the cultural and linguistic richness, traditional narrative structures, and community-valued topics that define good narratives from an Aboriginal perspective. In her article in this volume, Peltier describes her research examining Aboriginal storytelling and demonstrates how alternative approaches and perspectives that are grounded in an Aboriginal worldview might provide greater insights into the narrative abilities of Aboriginal children.

Dynamic Assessment. Dynamic assessment is also considered to fall into the category of child-centered assessment approaches. Dynamic assessment examines the child's use of learning strategies, responsiveness to instruction, modifiability, and ability to generalize newly learned skills to novel situations rather than measuring discrete language abilities (Miller, Gillam & Peña, 2001; Gillam, Peña & Miller, 1999; Owens, 2010; Roseberry-McKibbin, 2007). The child's performance on a series of tasks presented in a test-teach-retest format is compared to that of typically developing peers who have the same linguistic and cultural background. Performance is evaluated on the basis of learning speed, learning difficulty, the child's need for structure, scaffolding and individual attention, and the need for modification of instructional strategies as compared to their peers. Dynamic assessment is considered to present a process rather than a static, product level approach to the interpretation of performance on a specific set of tasks which are chosen with reference to a given child's specific needs. Since the purpose of dynamic assessment is to examine an individual child's learning potential, it has been described as representing a less biased solution to the concerns associated with standardized tests in assessing children's language development and ability.

Dynamic assessment procedures have been proposed to be particularly applicable in differentiating a language disorder and a language difference with BCLD children in general (Roseberry-McKibbin, 2007; Thomas-Presswood & Presswood, 2008), and there is evidence for their effective use with Aboriginal children. Ukrainetz, Harpell, Walsh and Coyle (2000) used dynamic assessment methods to assess the language learning abilities of two groups of Native American children, the preferred term used in the United States to refer to these children. Kramer, Mallett, Schneider and Hayward (2009) investigated the ability of the dynamic assessment and intervention tool developed by Miller, Gillam and Peña (2001) to discriminate between a group of Canadian First Nations children with normal language abilities and those with possible language learning difficulties as determined by teacher report. Both studies suggest that dynamic assessment may represent a promising approach to conducting culturally valid and less biased assessments of Aboriginal children and for reliably identifying children with potential language disorders.

Holistic Approaches to Assessing Aboriginal Children's Language: Curriculum-, Portfolio-, and Routines-based Assessments

A number of less common assessment approaches including curriculum-based, portfolio-based, and routines-based methods have been shown to be effective alternatives in assessing the language of BCLD children and may therefore have promising applications for the assessment of Aboriginal children (Hegde & Maul, 2006; Hegde & Pomaville, 2013; Roseberry-McKibbin, 2007; Losardo & Syverson, 2011; McWilliam, 2010; Paul & Norbury, 2011). As these are relatively new to the field of speech-language pathology, they require some brief elaboration.

In *curriculum-based assessment*, the supports and degree of scaffolding required by the child to attain mastery of the language demands of the curriculum are determined to identify gaps between the child's linguistic abilities and competence and those required for successful performance in a particular linguistic context (Hegde & Maul, 2006; Nelson & Van Meter, 2002; Norris & Hoffman, 1993). Curriculum-based assessment may involve identifying specific vocabulary and language elements of the curriculum and determining the child's typical responses to these linguistic demands. This approach may include elements of dynamic and criterion-based assessment approaches in determining the child's responsivity to adult dialogue and ability to process information within the context of the school curriculum (Paul & Norbury, 2011). Classroom observations to identify

the student's learning strategies, participation, and processing abilities form the basis of this approach. Areas in which the child is found to be experiencing difficulty are identified, and strategies, scaffolds, and supports to enhance language processing and subsequent learning that would permit the child to function more effectively in the specified language environment are elaborated as the focus of intervention (Nelson & Van Meter, 2002; Norris & Hoffman, 1993; Paul & Norbury, 2011). Advantages of this approach that might be particularly applicable for use with Aboriginal children include the direct link between assessment information and the setting of intervention goals, and the applicability of the approach to children representing diverse language, cultural, and developmental profiles. Since the strategies, curriculum modifications, and desired outcomes are based on the performance of the individual child, they are less open to the intrusion of various sources of cultural bias. It must nevertheless be determined in interpreting the results that the curriculum presented in the classroom and the strategies used in the instruction of the curriculum are appropriate for the child and are themselves free of bias (Rhodes, Ochoa & Ortiz, 2005; Sparks, 2000).

In *portfolio-based assessment*, diverse examples of products and work samples produced by the child are collected and are combined with observations and descriptions of behavior and performance in various linguistic contexts (Losardo & Syverson, 2011; Paul & Norbury, 2011; Roseberry-McKibbin, 2007). This combined information is then used to determine the child's performance levels and to develop a profile of individual areas of strength and weakness. Information collected may consist of any combination of work produced in class, teacher-made tests, criterion referenced testing, and standardized testing. Evaluation of the portfolio is conducted using clear criteria that reflect the demands of the curriculum, the child's individual goals and objectives, and the child's progress with identified learning tasks. Evaluation may be either numeric (through use of a rating scale), or may take a more qualitative, narrative format. The approach typically relies on a collaborative review of the combined portfolio information by professionals, parents, and the children themselves when appropriate (Losardo & Syverson, 2011; Roseberry-McKibbin, 2007). Advantages of the portfolio approach for Aboriginal children include the direct links to curriculum-based classroom skills and abilities, the involvement and participation of the child and the family, the opportunities for collaboration among professionals, and the flexibility of the approach to address a variety of contexts and language environments. Since much of the gathered data includes samples of work

produced by the child, portfolio assessment can be more sensitive to subtle changes and progress that occur over time than more traditional assessment approaches. The approach is nevertheless reliant on the extent to which the collected materials are representative of the child's abilities and actual level of performance.

Routines-based assessment relies on an in-depth understanding of the social environment of the family and of family functioning, every day routines, activities and experiences, and family-based priorities in the identification of the skills and supports a child might require to function effectively in daily life (Bernheimer & Weisner, 2007; McWilliam, 2010; Peterson, Luze, Eshbaugh, Jeon, & Kantz, 2007). The approach is based on the premise that children learn best through experiences and interactions based on daily routines in familiar contexts and with familiar people. Individual family strengths, needs, and interests are identified through a detailed semi-structured interview and are used as supports and resources in assisting family members to enhance learning opportunities for children based on existing activities and learning opportunities (Campbell, Milbourne & Wilcox, 2008; Crais, 2011; McWilliam, 2010). The focus of intervention is to support family members in identifying and adapting naturally occurring everyday activities to support their children's language, learning, and overall development. The emphasis on family perspectives, the understandings of their involvement in intervention, and the ongoing communication and collaboration among all participants suggests that there would be less room for cultural biases to be introduced by the collaborating professionals. In addition, this approach may provide important insights into Aboriginal family and community-based practices regarding language socialization and the roles of children as communicators. This family-centered approach is particularly useful with young children and their families, however adopting a similar perspective for use with older children has similar advantages. On the other hand, the potential for the S-LP to continue to apply their own cultural lens in observing and interpreting may still result in the misinterpretation of the child's behavior and performance.

Holistic approaches are reliant to a greater or lesser extent on transdisciplinary perspectives in identifying the strengths, needs, and weaknesses to be addressed through intervention that may enhance functional outcomes for the child and the family (Linder, 2008; McWilliam, 2010; Myers, McBride & Petersen, 1996). Transdisciplinary approaches involve regular communication and collaboration among a range of professionals and family members, with professionals providing consultation to the family and to

each other in supporting the goals and priorities identified for the child and family, and their associated decisions to arrive at desired outcomes (Losardo & Syverson, 2011; McWilliam, 2010). Advantages of transdisciplinary perspectives for Aboriginal children in particular include the coherence and contextualization of the intervention plan, the active role of the family in decision making and in implementing these decisions, the holistic and individualized portrait of the child, and the potential for enhanced communication and developmental outcomes through collaboration. In addition to the advantages listed in Appendix B, such integrated approaches preclude the potential biases and viewpoints of any one professional to dominate assessment findings and intervention decisions, and empower the family to take a leading role in decision making related to their child.

Suggestions to Promote the Development of Best Practices in Assessing Canadian Aboriginal Children's Language

In light of the information presented above, a number of suggestions for promoting a model of best practice in the unbiased assessment of Aboriginal children may be put forward. This model would require confirmation and approval from experienced S-LPs currently providing service to Aboriginal children in the diverse social, linguistic, and geographic contexts in which they live. Considerations in the development of such a model include an elaboration of the necessary steps in the planning and conducting of an assessment, the ways in which existing tests and approaches might be successfully adapted or modified to better examine and represent the communicative abilities of Aboriginal children, the ways in which the obtained assessment information might best be presented, the involvement of family members and local personnel in the assessment process, and the need for additional evidence to enhance communication assessment practices currently being used with these children.

In planning the assessment, the S-LP should consider its ultimate purpose, the kind(s) of information that is sought, and how this information will be used. These considerations will have an important impact on decisions regarding the approach to assessment to be adopted and the type of information to be collected. An awareness of the potential sources of bias that might be implicit in the selected approach, along with possible steps toward avoiding or minimizing these biases, are likely to enhance the assessment performance of the Aboriginal child. In particular, no single measure should be used in isolation in assessing children's communication abilities, and S-LPs

should be particularly wary of using standardized tests as stand-alone indicators of communicative competence. Information obtained from these tests should be combined with other sources of information, particularly from child-centered approaches, in order to contextualize the obtained information.

If test items or procedures associated with any standardized test are adapted in order to obtain more culturally valid information, it is recommended that the test be first administered following the procedures stipulated by the test manual. This allows conclusions to be drawn regarding the child's performance on the actual and the adapted tests that can be extremely useful in developing appropriate and individually focused goals and objectives, as well as in understanding specific aspects of community variation in language use from the expected test responses. S-LPs are advised to use systematic procedures in collecting such data in order to allow them to interpret these in an unbiased manner and to share this information in order to allow commonalities across communities to be drawn. Changes in the scoring of test items reflective of dialect or cultural differences should be explicitly outlined in the assessment report, and both the standard and the adapted scores should be reported for purposes of test validity. Attempts to collect local normative information, to adapt an existing assessment tool for use in a local community, or to create a new assessment tool would require extensive collaboration with community members and input from other S-LPs who are knowledgeable about working with Aboriginal children. These may nevertheless never be directly applicable to other Aboriginal communities.

Community, family, and developmental information should be taken into account in planning the assessment and in interpreting the assessment data collected. These considerations permit a holistic and contextualized perspective on the child's abilities and need to be elaborated. Family factors to consider include the language(s) used in the community, the exposure of the family to these languages, the family's language use, and, if bilingual or multilingual, relative language strengths, socio-economic status, and academic histories. The child's educational history and history of school attendance, the manner in which the curriculum is presented to the child, the degree of correspondence with the child's individual learning strengths and preferences, the child's interests, and the child's communication abilities across settings and interlocutors as well as developmental information that is informed by the mores and expectations regarding childrearing and language socialization in the community

and the family should form part of this basic contextual information. In order to integrate these variables into their current assessment practices, S-LPs working with Aboriginal children should be encouraged to learn about the communities in which they are working with respect to the local community structure, context, history, previous contact with medical personnel, and local and regional access to services. Such knowledge and awareness increases the professional's ability to relate to local issues and to provide the community with the best possible services. The wealth and breadth of knowledge that can be gained through collaboration and relationship-building with Aboriginal communities are well described by Zeidler (2011).

Involving local personnel as part of the assessment process is likely to contribute to a more accurate interpretation of the collected information. This is particularly true for children who speak a language in which the S-LP is not fluent. On the other hand, simply asking local personnel to communicate the assessment questions in the student's first language is no guarantee of an unbiased assessment. Unexamined assessment practices and their inherent biases can be easily replicated, even when questions are presented in the first language of the child. Providing local personnel with training in the tasks they are being asked to assist with, collecting their insights and interpretations, and using their knowledge and experience as a rich source of information can enhance the S-LP's understanding of community dialect and language use that will serve them well in interpreting children's language performance. The S-LP's awareness of both the verbal and non-verbal communication patterns and dialect norms in operation in any community may be greatly enhanced through the direct involvement of local personnel. Questions to be considered in involving local personnel in assessment situations include the types of training that would be required in order for local community members to effectively assist and inform the language assessment process; the ways in which this training might be recognized; the incorporation of Aboriginal perspectives into existing S-LP and Communication Disorders Assistant (CDA) programs to respond more adequately to community demands; and the potential development of CDA programs specifically designed for the training of Aboriginal personnel. Ayukawa (this volume) presents a highly successful training model for Inuit hearing professionals that has been used effectively over many years in Nunavik. Similar methods and perspectives might be used to inform the training of local Aboriginal supportive personnel in speech-language pathology.

The importance of considering the whole child, their activities, environments, supports, and participation in a thorough assessment of language abilities is an underlying principle in the development of recommended assessment approaches for Aboriginal children. The International Classification of Functioning, Disability and Health of the World Health Organization (WHO, 2001) provides an existing framework and perspective that may have particular relevance for the assessment of Aboriginal children. This perspective has had a profound impact on approaches and practices related to assessment due to its shift in focus away from medically-based factors and onto the multitude of variables in the physical and social environment of the individual that might represent barriers or facilitators to their successful participation in everyday life (Gal, Schreur, & Engel-Yeger, 2010; WHO, 2001). This shift in focus allows individuals to be seen as acting within physical and social contexts that are themselves open to intervention and remediation. The philosophy stands in sharp contrast to the traditional, medical perspective of disability being inherent to the individual, and the associated belief that appropriate intervention should focus primarily on the remediation of an individual's presumed deficiencies.

While translations of the WHO perspective into clinically applicable approaches to S-LP assessment and intervention have been relatively limited, a number of researchers including McLeod (2006), McLeod and Threats (2008), Thomas-Stonell, Oddson, Robertson, & Rosenbaum (2009), and Washington (2007) have attempted to apply this comprehensive perspective to the assessment of children with communication disorders. In particular, the work of Thomas-Stonell et al. (2009) in developing the FOCUS (Focus on the Outcomes of Communication Under Six), an assessment tool for preschool children, merits attention as it provides an attempt to measure change using an outcome measure whose goal is to capture communication and participation abilities before and after speech and language intervention (Thomas-Stonell et al. 2009; Thomas-Stonell, Oddson, Robertson, & Rosenbaum, 2010). The ICF approach still requires substantial additional translation in order to become a workable framework for use with children with communication disorders in general and for BCLD and Aboriginal children in particular, however the inherent perspective shows great promise in its ability to provide a holistic and unbiased view of an individual's communication abilities that is contextualized within their everyday environments upon which functional assessment and intervention goals and strategies might be based.

Additional evidence to confirm or dispute the applicability and usefulness of existing assessment

approaches and procedures must be collected in order to arrive at more evidence-based decisions regarding administration principles and procedures deemed to be appropriate to the assessment of First Nations, Métis, or Inuit children who have been referred for potential language difficulties. At the present time, decisions related to the appropriateness of various approaches to language assessment for Aboriginal children cannot be based on the strongest forms of research evidence, as very little evidence was located in the existing literature. Collecting such information would entail the documentation and sharing of approaches and procedures that have been found to be effective in determining whether or not an Aboriginal child presents with a language disorder. Both researchers and clinicians working with these children should be involved in gathering the necessary evidence base, with particular emphasis placed on the knowledge and experiences of the few Aboriginal S-LPs practicing in Canada.

The suggestions listed above as potential areas of action for the development of best practices in the language assessment of Aboriginal children stem primarily from extrapolations from the literature, interactions with experienced clinicians, and individual personal experiences. Clearly a great deal of work remains to be done to address the unresolved questions associated with the provision of culturally appropriate S-LP assessments as well other rehabilitation services for Canadian Aboriginal children residing in both urban and remote communities. Advancing the field and arriving at a consensus on best practices will require careful consideration and informed collaborations between multiple stakeholders including local community members and local Aboriginal and non-Aboriginal rehabilitation, educational, and psychological professionals. Additional data regarding the prevalence and etiology of communication disorders in Aboriginal communities must be collected, as well as additional evidence to support the need for modifications and adaptations to current assessment practices in S-LP. A discipline-wide forum of clinicians and researchers who are experienced in working with Aboriginal communities would provide an important first step in arriving at informed decisions regarding the most promising practices in S-LP to be adopted or adapted for use in the language assessment of Aboriginal children. The development of such culturally informed perspectives and approaches has the potential to contribute to improved assessment, intervention, language, and overall educational outcomes for Aboriginal children across Canada.

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End Notes

¹Throughout this paper, the term 'Aboriginal' will be used to refer inclusively to First Nations, Métis, and Inuit people, unless otherwise specified.

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Appendix A. Advantages and Disadvantages of Standardized Testing for Aboriginal Children

Advantages of standardized testing for Aboriginal children

- perceived objectivity
- well-established normative properties
- ability to derive standard and age-equivalent scores and percentile ranks that can be used to compare an individual's performance to that of a proposed representative sample of peers contained in the normative sample
- high test-re-test reliability
- relative ease and convenience of administration as stimuli and instructions are pre-determined and are contained in the administration manual
- requires little time for preparation
- time required for scoring is usually not extensive
- many standardized tests can be scored automatically using purchased software
- demands on the clinician are relatively easy

Disadvantages of standardized testing for Aboriginal children

- use of the normative sample for Indigenous children who are rarely represented in the normative sample may lead to misdiagnosis
- open to extensive criticisms of potential cultural bias when used with children who are not represented in the normative sample
- findings may be irrelevant to the assessment of interactive behavior
- findings may not easily reflect a child's communicative competence during real-life interactions
- information obtained from standardized testing does not provide a complete or consistent picture of the child's communicative competence and/or linguistic skills across language modalities
- few opportunities for examining specific language structures
- testing situation may be unfamiliar
- task demands may be unfamiliar
- elicit little information about pragmatic competencies
- test directions may be relatively inflexible regarding repetition or time permitted to respond
- difficult to adapt test administration and scoring procedures as this invalidates the application of the test norms
- difficult to discriminate between language difference and language disorders due to rigid scoring practices that are insensitive to dialect and community language differences
- collected information may not translate well into the setting of relevant goals

Appendix B. Advantages and Disadvantages of Child-Centered Assessment Approaches for Aboriginal Children

Advantages of child-centered assessment approaches for Aboriginal children

- practical
- functional
- flexible
- collaborative
- easily adapted to focus on an individual child
- provides information for setting relevant goals
- may involve families and other professionals
- focus is on the familiar, the known
- reduces barriers
- possible to link to standardized assessment data
- provides opportunities for coaching, modeling, scaffolding
- provides opportunities for professional development
- provides opportunities for skill development for family members
- allows assessment and intervention to be more closely aligned
- can be adapted to incorporate dialect or bilingual considerations
- can use familiar contexts, communicative partners, tasks
- can incorporate Aboriginal content, values, dialect, stories
- may provide indicators of growth
- provides big picture/macro information
- provides qualitative information
- captures spontaneous language use
- provides multilayered information
- may see the unexpected
- may be adapted to individual learning styles
- may provide information on the role of context and how this affects performance
- may allow observations of small gains and successes for children whose progress is not easily measurable

Disadvantages of child-centered assessment approaches for Aboriginal children

- potential for bias is still present
- requires a skilled and knowledgeable clinician
- time for planning and analysis of the assessment is increased
- pressure for the clinician regarding clinical knowledge, cultural knowledge, family knowledge is increased
- may be costly in terms of time investment
- coordination of the assessment may be complicated
- determining the criteria for assessment may be difficult as there is no fixed measurement
- assessment fatigue may be a problem
- the purpose of the assessment and the specific parameters to be assessed must be clearly articulated in advance to avoid loss of focus
- information may be difficult to summarize
- translation of information to report writing may not be easy
- transitions to new professionals may be complicated: what will other people get from the assessment information?
- information obtained may not be readily translated into bureaucratic decision making
- family members may require training in order to be appropriately involved