Issues in the Assessment of Reading Disabilities in L2 Children—Beliefs and Research Evidence†

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In bilingual and multilingual settings one is constantly challenged by the difficulty of teasing apart phenomena associated with normal second language (L2) reading acquisition from authentic warning signs of reading failure. The bulk of this paper focuses on a critical discussion of a cluster of beliefs that pertain to the issues concerning the diagnosis of reading disability in multilingual and bilingual settings among school children. Findings from available research on reading acquisition among bilingual children and research focusing specifically on the assessment of English-as-a-second language (ESL) children who might be at risk for reading disability are used to evaluate the validity of these beliefs. While some beliefs are supported by research, others are not. In particular, the research suggests that reliable diagnosis of dyslexia among ESL children can be achieved by examining within-language differences on various indices of basic reading skills such as phonological processing, and by noting a significant gap between oral and reading comprehension. Copyright © 2000 John Wiley & Sons, Ltd.

Keywords: reading disabilities; bilinguals; ESL; assessment issues; diagnosis

INTRODUCTION

Western, industrialized countries are becoming increasingly heterogeneous as a result of international migration, and most immigrants are attracted to metropolitan centres. For example, about 42% of the total non-white population in Canada live in Toronto. Relatedly,

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† This paper is based on a keynote address presented at the First Conference on Multilingualism, Bilingualism and Dyslexia, Manchester, UK, June 1999.
by 1996, while a mother tongue other than English or French was reported by 17% of the general population in Canada (Statistics Canada Census, 1996), in metropolitan areas such as Toronto, which is considered to be the most ethnically diverse city in the world, it has reached 42%.

Similar statistics apply in other large metropolitan areas in other Western countries. Given such demographic trends, it is no wonder that there is a growing awareness and concern over the ability of educational, social and mental welfare systems to meet the needs of an increasingly diverse clientele (Cole, 1996; Snow, Brows and Griffin, 1998; Geva, Barsky and Westernoff, 2000). These statistics have far-reaching implications for educational planning. They also have far reaching implications for addressing the needs of immigrant children who may have a reading disability. This paper deals with issues concerning the latter point.

Not too long ago, immigrant children and children from certain ethnic backgrounds were much more likely to be identified as learning-disabled (LD) and placed in special education classes (Cummins, 1984). Theoreticians such as Ogbu (1978) and Cummins (1989) cautioned that in Western countries psychological assessments were (mis)used to legitimate the ‘educational disabling’ of these children. Critics of these practices warned that children with limited English proficiency were over-represented in programmes designed for learning-disabled or language-handicapped children (Benavides, 1989; Ortiz and Yates, 1989).

Researchers and clinicians pointed out that professionals often have little understanding of issues related to limited second language (L2) proficiency, leading to misinterpretation of data gathered as part of the referral and evaluation process and to erroneous decisions made using these data. Social critics argued that placement in special education was often related to socioeconomic, linguistic and cultural factors rather than psychoeducational factors. The appreciation that educational difficulties may reflect normal linguistic and acculturation processes has percolated to educational and clinical practice in North America. In response to such criticisms and a genuine concern over the social risks associated with biased practices, there has been an emergence of alternative, culturally sensitive assessment procedures (Feuerstein et al., 1981; Gavilan-Torres, 1983; Campione, 1989; Duran, 1989; Figueroa, 1989; Oller and Damico, 1990; Dao, 1991; Schiff-Myers, 1992). These changes led to changes in professional training (Lewis, 1989; Ortiz and Yates, 1989; Oller and Damico, 1990; Cole, 1996) and to a set of concomitant powerful beliefs that guide practice and professional training. These beliefs pertain to how children learn to communicate in L2 and how they acquire literacy skills in L2; they also pertain to beliefs about sources of learning difficulties in L2 learners and to ways to minimize biased assessment of oral and written language skills in children.

The bulk of this paper focuses on a critical discussion of a cluster of beliefs concerning the diagnosis of reading disability in multilingual and bilingual settings among school children. In this paper the term reading disability refers to difficulty in developing word recognition skills. It is argued that while some of these beliefs are supported by research, others have not been examined within a rigorous research framework. It should be noted that there is a dearth of research on these issues. Where relevant, I will
summarize findings from my research programme concerned with the identification of English-as-a-second-language (ESL) at-risk children. The discussion of these beliefs is preceded by a brief description of the methodology and objectives of the research on ESL at-risk children.

THE ESL AT-RISK RESEARCH PROGRAMME—METHODOLOGY AND DESIGN

This research programme is concerned with the development of better-informed approaches and benchmarks for the early identification of ESL learners who might be at risk of being reading-disabled. In order to gain a better understanding of the correlates and precursors of normal and delayed reading ESL development in the primary grades, the development of the following skill clusters is being tracked: (a) components of ESL literacy skills such as word recognition, pseudoword decoding, spelling, reading comprehension and reading efficiency; (b) ESL oral proficiency indices such as listening comprehension, receptive and expressive vocabulary and grammatical knowledge; and (c) development of prerequisite skills such as phonological processing and awareness, verbal memory and speed of naming. Non-verbal intelligence is also assessed periodically.

A cross-sequential, longitudinal design is used in the ESL at-risk project, involving three cohorts (total n = 331) in four low-to-middle SES areas of metropolitan Toronto. Mindful of the potential effects of first language (L1) on ESL development, primary-level children from specific language groups were targeted (e.g. Punjabi, Cantonese, Tamil, Portuguese) because they reflect current demographic trends and represent different languages. This allows us to examine universal and language-specific trends in the development of reading and language skills in primary-level ESL children. Only children who speak their L1 at home and who at the onset of the study have been in Canada for at least 6 months are included. By including children from two to four schools in each of the areas, school effects are minimized.

Data collection is not complete yet, and results referred to here pertain to the first cohort of 35 English-as-L1 (EL1) children and 69 Punjabi-as-L1 children who come from the same four schools, and 35 children with Cantonese as L1, who come from four schools in a different area. The Cantonese children come from middle-class backgrounds. The EL1 and Punjabi children come from a low-to-lower middle-class background. All the linguistic and reading tasks are presented in English. Children are being tested twice a year, in the fall and spring, and all testing is done on an individual basis.

Children of the first cohort, who are now in Grade 3, have been followed since Grade 1 (mean age 6 years 3 months at Time 1, i.e. fall of Grade 1). It should be pointed out that all instruction in the schools takes place in English, though some children may attend heritage language classes, where they are exposed to literacy instruction in their L1 on weekends or after school. Information about children’s language status (ESL/L1) is noted when children first register at a school. Subsequently it was confirmed by interviews with classroom teachers and by our testing. At the time of testing,
many of the ESL children were attending, on a withdrawal basis, special ESL classes offered by the respective schools. These 30–40 minute classes are offered a number of times each week. Where standardized measures are involved, published test norms are not employed, since the norms were not developed for ESL children. In data analyses raw scores or standard scores and percentiles, calculated within language groups, are used. This procedure is essential to minimize bias and confounding with oral language proficiency in defining at-risk status among ESL children.

BELIEFS ABOUT BILINGUALISM AND READING DISABILITY IN YOUNG CHILDREN

Belief: Children Experience Difficulties in Reading in Their L2 Because Their Oral Language Proficiency Is Not Adequate—Yet

According to a global, L2 proficiency based explanatory framework, it would be reasonable to expect to find a gap between children’s performance on parallel L1 and L2 reading tasks. Poorer text reading in L2 may be the result of the cumulative effects of slow and inefficient decoding, of slow and inefficient activation of the existing lexicon, as well as of incomplete, slow and inefficient activation of morphosyntactic knowledge. A rather widespread belief among educators and some L2 researchers concerns the notion that in order to learn to read it is necessary to ensure adequate levels of language proficiency in L2. Language proficiency and reading skill develop gradually (Chall, 1996). For L2 school children, language proficiency does not precede reading development the way it does when children learn to read in their L1 (Chall, 1989). Instead, for the child learning to read in L2, language and reading are developing in tandem. It is not surprising therefore that educators and researchers who often focus on the development of reading comprehension in ESL learners tend to attribute reading difficulties among L2 learners to poor language proficiency and to downplay the role of word recognition processes.

Oral language proficiency in school children has been examined in terms of global conversational and academic linguistic indices (Cummins, 1984; Dickinson and Snow, 1987; Snow et al., 1989; Ricard and Snow, 1990). Others discuss L2 oral proficiency as involving phonological, lexical, morphological and syntactic skills (Geva and Ryan, 1993; Johnson and Newport, 1989). Only a limited amount of direct research exists, however, on the relationship between language proficiency and L2 children’s developing reading skills.

To address the research pertaining to the belief that L2 reading is enhanced with better developed linguistic proficiency, it is useful to consider three bodies of research, one pertaining to reading comprehension processes, another pertaining to word recognition processes, and the third relating to the relationships between word recognition and reading comprehension.

L1-based research supports the existence of a positive relationship between language and reading comprehension in elementary school children (e.g. Chall, 1989; Dale, Crab-Thoreson and Robinson, 1995; Carver, 1997; Rupley and Willson, 1998). The available research on L2 also supports the
belief that comprehension-based aspects of reading, including reading fluency, are facilitated by increasing levels of L2 oral proficiency. Several studies have shown that various aspects of L2 language proficiency play a significant role in reading comprehension. This appears to be true when children come from middle-class backgrounds and are studying to read in their L2 in frameworks which value bilingual literacy development (e.g. Chitiri et al., 1992; Geva and Clifton, 1993; Geva and Ryan, 1993; Geva, Wade-Woolley and Shany, 1997). It also appears to be true when children come from less privileged, immigrant backgrounds (e.g. Verhoeven, 1990; Durgunoglu, Nagy and Hancin-Bhatt, 1993; Schuster and Geva, 1999). For example, in a recent paper based on the ESL at-risk project, Geva and Petrilius-Wright (2000) used vocabulary and syntactic judgement as indices of oral language proficiency. They report that the L1 children outperformed the Punjabi-as-L1 children on these English oral language proficiency indices and on reading comprehension. In both groups vocabulary and syntactic knowledge were good predictors of reading comprehension. In another study based on the ESL at-risk project, Schuster and Geva (1999) report no L1–L2 differences on indices of reading efficiency; by the time they were in Grade 2, both L1 and ESL children did not differ on accurate and fast reading of simple narratives.

When one examines the research pertaining to word-based processes in children learning to read in their L2, evidence for the importance of oral language proficiency is somewhat less compelling. In recent years a growing body of research has accumulated which shows that word-based reading processes in children are less closely related to oral language proficiency. For example, Durgunoglu, Nagy and Hancin-Bhatt (1993) found that oral language proficiency in L2 (English) did not predict basic reading skills (i.e. word recognition, pseudoword reading) in Latino children, while phonological processing skills did. Other studies involving young school children and various writing systems being learned as L2 (e.g. French, Hebrew, Farsi) have found only weak relationships between L2 proficiency and performance on measures of word recognition and pseudoword decoding skills in L2 (Geva and Clifton, 1993; Geva, Wade-Woolley and Shany, 1997; Geva and Siegel, 2000; Gholamain and Geva, 1999). In fact, Geva and colleagues found in a series of studies that children were able to decode words with more accuracy in Hebrew, L2, than in English, their L1. These counterintuitive results were attributed to the fact that Hebrew has a less complex (‘shallow’) orthography than English (see Geva, Wade-Woolley and Shany, 1993; Geva and Wade-Woolley, 1998; Geva and Siegel, 2000). In these studies oral language proficiency contributed only 3%–7% to the explained variance. Verhoeven (1990), however, reports a positive significant relationship between Dutch oral language proficiency and Dutch word recognition skills for Turkish-as-L1 primary-level children being instructed in Dutch (L2).

In the ESL at-risk project, Geva, Yaghoubzadeh and Schuster (1999) found that ESL children’s performance did not differ from that of the EL1 children on basic reading skills such as word recognition and decoding skills. At the same time, statistical analysis indicated that the EL1 children were more proficient in English and performed significantly better than the two L2 groups on all the language proficiency measures (though the children with
Cantonese as L1 performed somewhat better than the Punjabi children). In particular, L1 children performed significantly better than the ESL children on listening comprehension. Contrary to the pattern noted on the oral language measures, the Punjabi and EL1 groups did not differ from each other on reading measures (though the Cantonese group means were higher than those noted in the Punjabi group).

Conclusion

The belief that individual differences in L2 reading comprehension are related to L2 oral language proficiency is supported by research. Nonetheless, the research does not support a strong version of this belief when it comes to word-based reading skills. Instead, it appears that, provided that children have been exposed to appropriate literacy instruction, there is no reason why they should not be able to decode words even when their L2 language proficiency continues to develop. In fact, depending on the complexity of the L2 writing system (i.e. whether it is ‘deep’ or ‘shallow’) children may sometimes be able to decode words in L2 with more accuracy than in their L1. Oral language proficiency plays only a marginal role in explaining why some young L2 learners continue to experience difficulties in reading words and pseudowords in spite of adequate instruction. For some children the difficulties reside in word-based component processes and not in limited vocabulary or incomplete command of the grammar.

Belief: The Relationship Between Word Processes and Reading Comprehension is Different in L1 and L2

Hoover and Gough (1990) argued that there is an affinity between word recognition and reading comprehension skills. Carver (1993, 1997) and Rupley and Willson (1998) have shown with L1 learners that slower rates of word recognition affect comprehension and that word recognition continues to play an important role in reading comprehension through Grade 6. To what extent can findings pertaining to the relationships between word and text processes in children learning to read in their L1 apply to children learning to read in L2? In a study of young English–Hebrew bilingual children, Geva, Wade-Woolley and Shany (1997) found that despite differences in language familiarity, accuracy and speed rates of isolated word reading in English, L1, and Hebrew, L2, were highly similar. At the same time, in L1, children were able to rely on their linguistic knowledge and were therefore more efficient in reading narratives than isolated words. This pattern was not observed in Hebrew, L2, presumably because children’s command of L2 was below some unspecified L2 proficiency threshold.

One of the outcomes of the ESL at-risk research project is the finding that efficient word recognition plays a significant role in facilitating the comprehension of simple narratives by young ESL learners. Schuster and Geva (1999) found that while vocabulary knowledge, a measure of oral language proficiency, did not predict significantly text reading efficiency of L1 or ESL children, accurate word recognition did for both L1 and ESL children. Merbaum and Geva (1998) report that listening comprehension, a discourse-based measure of oral language proficiency, explained 22% of the variance...
on the performance of ESL children on a reading comprehension task involving simple narratives. However, with the addition of word-based measures (pseudoword decoding, phonological processing and rapid naming), 82% of the variance in L2 reading comprehension was accounted for. In other words ESL children who have a better command of English are more likely to comprehend simple narratives. However, by considering also word based measures, it was possible to understand with much more accuracy individual differences in reading comprehension.

Conclusion
A better picture of what drives reading comprehension in young ESL (and L1) learners can be achieved by considering, along with oral language indices, factors associated with efficient word recognition skills. These results suggest that, as is the case in L1, some ESL children may not be able to comprehend text not only because their oral language is not fully developed, or because they do not use comprehension strategies efficiently, but also because their word recognition skills are poor. Such results suggest that it is beneficial to develop and track concurrently oral language proficiency as well as word recognition and reading comprehension skills. This is especially important because of the mutually enhancing role that exists between reading and vocabulary growth.

Belief: Poor Phonological Processing Skills May Contribute to Poor Word Recognition in L1 Children, but Are Less Informative When Oral Language Proficiency is Still Developing

In L1-based research, phonological processing has been linked to the successful development of word recognition skills (Share et al., 1984; Wagner and Torgeson, 1987; Schneider and Naslund, 1993; Vandervelden and Siegel, 1995). Phonological processing is assessed by measuring children’s ability to conceptualize and manipulate sublexical elements. This is often done by asking children to delete, count or segment phonemes. The research indicates that the development of phonological processing skills follows a developmental path, with awareness of syllables developing before awareness of onset and rhyme, which in turn develop before awareness of phonemes. The ability to reflect on and manipulate phonemes increases the chances that young children will develop good decoding skills, leading to success at reading from the early grades. Research has also shown that children who experience reading difficulty are those who have limited ability to perform sublexical manipulation tasks (Adams, 1990; Rack, Snowling and Olson, 1992; Stanovich, 1992; Siegel, 1993), and that these deficits persist until adulthood (Bruck, 1990; Pennington et al., 1990).

The relation between reading difficulty and poor phonological processing skills is not restricted to English. Phonological awareness has been shown to play an important role in the development of reading skills in other Latin-based and non-Latin based orthographies, including Danish, French, German, Hebrew, Italian, Portuguese, Spanish, Turkish and Swedish (Alegria, Pignot and Morais, 1982; Cossu et al., 1988; Wimmer and Hummer, 1990; Naslund and Schneider, 1991; Caravolas and Bruck, 1993; Ben-Dror, Frost
and Bentin, 1995; Oney and Durgunoglu, 1997; Elbro, Borstrom and Petersen, 1998). Phonological processing skills appear to play a role in logographic languages such as Chinese as well (Hu and Catts, 1998).

Of particular relevance to this paper is the rather consistent finding in a handful of cross-linguistic studies that phonological processing skills in one language are predictive of word recognition skills within and cross-linguistically. Again, this finding seems to be universal, as it occurs across different language combinations such as English–French, English–Hebrew, English–Spanish and English–Farsi (e.g., Durgunoglu, Nagy and Hancin-Bhatt, 1993; Cisero and Royer, 1995; Geva and Siegel, 2000; Gholamain and Geva, 1999). The notion that aspects of phonological processing (as well as related processes such as naming speed and phonological memory) are linguistically interdependent appears to be substantiated by these studies. Wade-Woolley and Geva (2000) found evidence for this L1–L2 linguistic interdependence in a study focusing on children’s performance on an English (L1) phoneme deletion task. They report that children’s performance on this task was correlated with a number of Hebrew (L2) tasks, including word reading, sentence comprehension, phoneme identification and skills in recognizing orthographic patterns. In a longitudinal study of young school children learning to read in French within a French immersion setting, Comeau et al. (1999) also found evidence for such transfer. Owing to this linguistic interdependence, performance on phonological awareness skills predicted word recognition cross-linguistically.

**Conclusion**

The ability to reflect on and conceptualize the sounds of one’s native language is clearly related to the ability to read words and understand the L2 oral language. The cross-linguistic research reviewed here provides support for a universalist transfer notion. According to this notion, the same set of linguistic and cognitive predictors underlies the development of reading skills in L1 and L2 (even when different alphabetic writing systems are involved). Across different writing systems individual differences in phonological processing skills are related to individual differences in word recognition skills. That phonological processing skills in one language, be it the learner’s L1 or L2, can explain significant amounts of variance on word recognition skills in another language (L1 or L2) is especially important in the context of assessing word recognition skills in multilingual contexts such as that of the ESL at-risk children. This emerging pattern suggests that it is possible to assess reading disability cross-linguistically even when linguistic proficiency is not fully developed yet. This point is the focus of the next two subsections.

**Belief: Processes Driving Reading Development in L1 and L2 Differ**

The ESL at-risk research programme was designed to develop a better understanding of what should be considered normal ESL literacy development, what are some of the early linguistic and cognitive warning signs of reading disability among ESL learners, and whether these warning signs are common to L1 and ESL children. Geva *et al.* (1999) examined whether
cognitive and linguistic correlates used to identify at-risk L1 learners are equally reliable for identifying at-risk ESL learners. Using a longitudinal perspective, stepwise regression analyses were performed with Grade 1 measures used to predict performance on various reading indices measured in Grade 2.

In the first analysis, pseudoword reading—the Word Attack subtest of the Woodcock Reading Mastery Test (Woodcock, 1987)—was the dependent variable. In these analyses the oral language proficiency measures, (consisting of various oral language proficiencies) explained 12% of the variance in the L1 group and 7% in the L2 group. The phonological processing factor (consisting of three phonological processing measures) explained a substantial proportion of the variance in both language groups: 50% in the L1, and 41% in the L2 group. Rapid automatized naming (RAN) was another factor that was significant in both language groups. It explained an additional 8% in the L1, and 5% in the ESL group. In other words, oral language proficiency was a much less important predictor of pseudoword decoding than phonological processing and rapid automatized naming.

This pattern repeated itself when word recognition—the Reading subtest of the Wide Range Achievement Test—Revised, (WRAT) (Jastak and Jastak, 1984)—was the dependent measure. Once again, the oral language factor, entered first, explained 12% of the variance in the L1 group and 8% in the L2 group. An additional 38% of the variance in the L1 group was explained by the phonological processing factor, and 44% in the L2 group.

As might be expected, when reading comprehension was the dependent variable the pattern of results was different. The oral language factor explained 28% of the variance in L1 and 13% in L2. The phonological factor, which was considered next, did not explain additional variance in either group. However, word recognition skills (measured with the WRAT) explained an additional 13% of the variance in L1 and 13% in L2. That is both oral language proficiency and accurate with word recognition are important in understanding individual differences in reading at the end of Grade 2 comprehension regardless of language background.

Conclusion

Among L1 and ESL children alike, better-developed phonological processing skills in the spring of Grade 1 were associated with more accurate decoding and word recognition skills in English a year later. In turn, word recognition skills predicted reading comprehension of narratives in both groups. Regardless of oral language proficiency, individual differences in phonological awareness and rapid letter naming exert their influence on word recognition among children learning to read in their L1 or in their L2. Individual differences on such prerequisite skills can be indicative of smooth or problematic acquisition of ESL reading skills in later years. Again, we can conclude that developing good reading comprehension among ESL children entails a combination of good word recognition skills and L2 proficiency.
Belief: It Is Difficult to Diagnose Accurately Reading Disability in L2 Until Oral Language Proficiency is Well Established

One of the outcomes of the growing awareness that children from ethnic and linguistic minorities were over-represented in programmes for slow learners or for the learning-disabled has been the emergence of a trend whereby professionals and school officials avoid diagnosing ESL learners as learning disabled for a number of years in order to minimize practices believed to be insensitive or biased. Cummins (1984) suggested that it may take 5–7 years to achieve such oral language proficiency. The logic underlying this practice has been a concern that the validity of psychoeducational assessments may be confounded with oral language proficiency. According to this position, as long as the learner has not had a chance to develop full oral language proficiency in L2, reliable and valid L2-based assessment of learning problems cannot be achieved.

The common practice of delaying assessment and remediation for several years is well intentioned. Yet, it may lead to under-identification and cumulative deprivation. This is a phenomenon I and my colleagues experience often in Toronto. One outcome of the ESL at-risk research is the finding that elementary classroom teachers tend to be more hesitant and less reliable in nominating as potentially at-risk ESL than L1 children (Limbos and Geva, 1999). This is related to the fact that they attribute poor reading skills to L2 status and assume that until children’s English is well developed, deficits related to reading disabilities cannot be identified.

To identify ‘at-risk’ children, scores were converted to standard scores. These calculations were based on the means and standard deviations within each language group. Children were defined as ‘at risk’ in comparison to their reference group. This was done to distinguish children who are reading disabled from ‘garden variety’ poor readers. A child was classified as ‘at risk’ if at the end of Grade 2 they performed at least one standard deviation below the mean on the WRAT and, in addition, their oral proficiency indices were at least in the average range.

Figures 1 and 2 present the profiles of two children showing a typical profile of reading disability, the first with English as L1 and the second with Punjabi as L1, respectively. The profiles are based on within-group standard scores and should be examined in relation to their peer group. Three clusters of selected measures are included. Moving from left to right, each profile shows first cognitive-linguistic skills such as non-verbal ability (Matrix Analogies Test, Naglieri, 1989), measured at the end of Grade 1 (Time 2) and then again at the end of Grade 2 (Time 4); rapid automatized naming of letters (RAN), measured in the fall of Grade 1 (Time 1) and at Time 4; and phonological processing skills (phoneme segmentation-deletion) measured at Time 1 and Time 4. The oral language profile appearing in the centre includes Time 1 and Time 4 measures of receptive vocabulary (PPVT-R; Dunn and Dunn, 1981), grammatical knowledge, measured with a sentence repetition task, and listening comprehension of simple narratives measured at Time 2 and Time 4. The reading profile cluster, appearing on the right, includes reading comprehension of simple narratives measured at Time 2 and Time 4. (Note that reading comprehension was not measured at the
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Figure 1. Cognitive, linguistic and reading profile of an 'at-risk' English-as-L1 child (group mean = 0.00).

beginning of Grade 1 as this would be too challenging to many.) The profile also includes, at the far right, Time 1 and Time 4 word recognition (WRAT) and pseudoword decoding (Woodcock, 1987).

As can be seen, the EL1 child and the Punjabi child whose performance is described in the two profiles were slower than their respective peer groups in naming letters rapidly and had difficulties in performing the phonemic segmentation-deletion task. In comparison to their peers, their performance

Figure 2. Cognitive, linguistic and reading profile of an 'at-risk' Punjabi-as-L1 child (group mean = 0.00).

was worse at Time 4 than at Time 1. In other words, while their peers’ performance improved, their performance did not. In fact, the oral language skills of both children was higher than the respective mean in their peer groups. In each case their ability to comprehend stories read to them was also not impaired, and indeed both performed above their group means. However, both children performed below their comparison group on all reading measures. There was a gap of at least two standard deviations between their listening and reading comprehension scores, and their word recognition and pseudoword reading scores were likewise very low.

These are typical profiles of children with dyslexia. Notably, 6% of the children in the EL1 group, 7% of the children in the Punjabi group and 5.5% of the children in the Cantonese group showed such profiles. In other words, the prevalence of reading disability in each of the language groups is very similar. This pattern suggests that the procedure used minimized over-identification and under-identification in each group.

CONCLUSIONS

It appears that it is not necessary to wait until oral language proficiency is fully developed to note and assess reading disability. Conclusions drawn from this and related research challenge simplistic notions concerning the emergence of normal and problematic ESL reading skills. Performance on oral language proficiency indices is not a good predictor of basic reading skills in L2. Regardless of L1–L2 status it is erroneous to rely heavily on oral language proficiency when adequate reading skills development is at issue. Instead, it appears that two sets of complementary procedures, which are useful in L1, are useful in identifying reading disability in bilingual or ESL children as well. The first involves the assessment of phonological processing skills and rapid basic reading skills. The second procedure involves checking whether there is a gap between reading and listening comprehension. For normally achieving children, who receive consistent instruction at school this gap should be rather small. A striking gap between listening and reading comprehension, with listening comprehension being much higher than reading comprehension, is an important clue. It indicates that the difficulty the child is experiencing is not with processing and comprehending verbal information, but with processing print.

In bilingual and multilingual settings one is constantly challenged by the difficulty of teasing apart phenomena associated with normal L2 reading acquisition from authentic warning signs of reading failure. The research suggests that assessment can and should proceed separately for oral and written language indices and that the assessment of reading disability may proceed in spite of inadequate oral language proficiency in L2. In fact, relying heavily on oral language proficiency as a clue may be misleading and costly to the child. Refraining from an assessment until a child who has serious difficulty in developing word recognition skills has developed oral language skills could be damaging. In addition to the need to develop oral language communication skills, this child requires intensive instruction focusing on the development of word recognition skills and of compensatory
strategies. Our research suggests that rather than waiting until oral language proficiency is fully developed, it is possible to employ by Grade 2 the same set of tasks to chart, within EL1 and ESL groups alike, profiles of children who fail to learn to read in spite of instruction and adequate oral language proficiency.

ACKNOWLEDGEMENTS

The ESL at-risk research was partially funded by research grants from the Social Sciences and Humanities Research Council of Canada and the Ontario Ministry of Education to the author.

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