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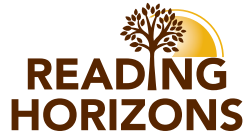


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A Socio-Psycholinguistic Perspective on Biliteracy: The Use of Miscue Analysis as a Culturally Relevant Assessment Tool

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Abstract

Through the presentation of two bilingual reader profiles, this article will illustrate how miscue analysis can act as a culturally relevant assessment tool as it allows for the study of reading across different spoken and written languages. The research presented in this article integrates a socio-psycholinguistic perspective to reading and a translanguaging perspective to language use to highlight how differences in language and writing systems did not lead to difficulties or barriers in orally reading or comprehending texts. Contrarily, the use of miscue analysis was a culturally relevant assessment that provided a multidimensional perspective into the ways in which the readers constructed meaning. The article concludes with the benefits and the challenges of using miscue analysis with bilingual readers, and the implications of incorporating miscue analysis as a reading assessment tool in classrooms.

KEYWORDS: biliteracy, bilingual reading, translanguaging, miscue analysis

Researchers and educators place the assessment of bilingual readers under a microscope. The overidentification and the mislabeling of bilingual students to special education and other remedial services call for more culturally and pedagogically relevant assessments from the research and educational communities (Everatt, Reid, & Elbeheri, 2014; Geva, 2000; Rueda & Windmueller, 2006). Some researchers have uncovered how large-scale, standardized tests contain cultural biases resulting in bilingual students performing poorly (Artiles, Harry, Reschly, & Chinn, 2002; Everatt et al., 2014). The difficulties that educators face in not having the wherewithal to assess children's reading in a culturally and linguistically relevant manner have raised a call for alternative forms of culturally relevant assessments.

The argument for culturally relevant assessments is based on the concept of culturally responsive teaching (CRT; Gay, 2000). Gay (2000) elaborated by describing how culturally relevant teaching involves the "cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning more relevant to and effective [for students]" (p. 29). Therefore, culturally relevant assessments

are tools for evaluating students as they draw from their range of linguistic knowledge and language resources to communicate what they know. Culturally relevant assessments, like teaching practices, incorporate the cultural knowledge, prior experiences, and performance styles of bilingual students. They are vital for determining the academic achievement of linguistically diverse students in classrooms.

Crossing interdisciplinary perspectives to the assessment of bilingual children in educational settings, this article will examine how the use of miscue analysis can act as a culturally relevant assessment tool in evaluating the oral reading performances and behaviors of two bilingual readers across different spoken and written languages. Long accepted as a classroom tool to evaluate the reading behaviors of readers, miscue analysis is a set of procedures that allows researchers and educators to investigate readers' miscues, or observed responses that differ from an expected response. Miscue analysis is built on the works of Goodman (1996) and Goodman, Watson, and Burke (2005), who draw from socio-psycholinguistic perspectives to elucidate how reading is a transactive process in which readers integrate language cues and psycholinguistic strategies to construct meaning. Socio-psycholinguistic perspectives to reading place meaning at the core of the reading process. Although a growing number of studies have incorporated miscue analysis with bilingual readers, there is little discussion about using miscue analysis with bilingual readers to assess their developing biliteracy, especially in assessing not only how they read English texts but also texts written in other languages and in other writing systems.

After discussing the theoretical framework that positions the reading process as transcending language boundaries, I will present two bilingual reader profiles: one on Jenny, a Spanish- and English-speaking student, and the other on Mai, a Japanese- and English-speaking student. After exploring miscue analysis as a culturally relevant assessment tool in understanding bilingual reading behaviors, I will conclude with the benefits and the challenges of using miscue analysis with bilingual readers, and the implications of incorporating miscue analysis as a reading assessment tool in classrooms.

Theoretical Perspectives on Reading Across Languages

Socio-psycholinguistic perspectives on reading position it as a language process during which readers construct meaning as they read (Goodman, 1996). As such, this perspective allows researchers to examine reading through the ways in which readers make sense as they read through the study of miscues. Readers' miscues are windows into the reading process composed of the language cueing systems and psycholinguistic strategies (Goodman, 1996). The language cueing systems (also described as the linguistic cueing systems) are defined as the syntactic (or grammatical), the semantic (or meaning), and the graphophonic (or visual). Psycholinguistic strategies, which are also referred to as reading strategies, are (a) initiate, sample, and select—the strategy that describes how readers focus on and select from information in the text (i.e., graphophonic, grammar, meaning, or picture); (b) predict and infer—the strategy that describes how readers predict upcoming text and ideas; (c) confirm, disconfirm, and correct—the strategy that describes how readers confirm or disconfirm their predictions and correct based on whether their predictions make sense; (d) integrate—the strategy by which readers integrate predicted knowledge into their current schema; and (e) terminate—the strategy by which readers select when and where to stop reading.

The majority of standardized assessments used to evaluate oral reading behaviors and comprehension, such as the Woodcock-Johnson IV Tests of Achievement, Bateria III Woodcock-Muñoz, and the Clinical Evaluation of Language Fundamentals (CELF-

4 and CELF-4 Spanish), draw from an automaticity model of reading, which contends that reading comprehension is the result of automatic and accurate oral reading behaviors. Socio-psycholinguistic perspectives on reading challenge the automaticity and accuracy approach to reading. Instead, a socio-psycholinguistic perspective places meaning at the core of the reading process. Standardized reading measures consider reading responses as either right or wrong; miscue analysis, though, provides quantitative and qualitative examinations of reading behaviors. Marking and studying readers' miscues and their patterns of miscues as they read across different texts and languages provides insight into the knowledge that they bring to and construct with the texts. As Smith (2012) contends, miscues are part of the surface structure of texts, which are the observable features that make up a written language system, such as orthography, phonological elements, and syntactical and semantic structures. On the other hand, the deep structure, which is the area where readers construct meaning with texts, cannot be observed. The implication of this notion is that, while the miscues that bilingual readers make are observable, the meanings that they construct when reading texts are not.

There is a growing interest in studying the miscues of bilingual readers. Miramontes (1990), for instance, used miscue analysis to study the oral reading miscues, retellings, and reading patterns of Spanish and English bilingual readers, with varying proficiencies in each respective language, when reading English texts. Using miscue analysis, Miramontes provided an alternative reading profile of bilingual students who, although categorized as "poor" readers by their teachers, performed similarly in comprehension strategies and story recall as those who were considered "good" readers. More recently, Croce (2010) examined the miscue patterns of Spanish- and English-speaking students to investigate how they made sense of English informational texts. To challenge a word accuracy view of reading, Croce's findings illustrate that bilingual readers' oral reading miscues did not always correspond to how they understood informational texts. Similar to Miramontes (1990), there was little difference in how bilingual readers with varying Spanish and English abilities performed on their comprehension scores.

Other researchers have pioneered the use of miscue analysis with languages other than English to describe the reading process as a process of constructing meaning (Ebe, 2008; Goodman, Wang, Iventosch, & Goodman, 2012; Hudelson, 1981). Applying miscue analysis to Polish texts, Romatowski (1981) analyzed and compared the oral reading miscues and retellings of bilingual Polish and English readers. Romatowski found that when bilingual readers read a Polish story, students who produced the fewest number of miscues had the lowest retelling scores, and vice versa, suggesting the nonlinear, complex relationships between oral reading miscues and comprehension. Barrera's (1981) research on readers of both Spanish and English reading texts written in Spanish supports these findings. Barrera discussed how reading in Spanish involves more than attending to graphophonic cues because it also involves readers' language experiences.

The aforementioned studies incorporated written language systems that are alphabetically based. In one of the few published studies that focused on the miscues of bilingual readers who read in nonalphabetic languages, Kabuto (2005) used miscue analysis to investigate how a young bilingual Japanese and English reader negotiated the directionality of a text written in Japanese from top to bottom and right to left. Through miscue analysis, Kabuto illustrated how the directionality of the text did not interfere with the reader's ability to monitor for meaning and self-correct miscues that did not make sense. Ferguson, Kato, and Nagahiro (2012) provided a more extensive discussion of reading Japanese texts and the types of miscues that Japanese readers tend to produce. Studying

other nonalphabetic languages, Wang (2012) used miscue analysis to construct a taxonomy of Chinese oral reading miscues. Building on the discussion of reading Chinese texts, Xu (2012) used error analysis to argue that effective and efficient reading is not dependent on accurately recognizing words.

These studies have laid an important foundation for using miscue analysis to create alternative profiles for bilingual readers; however, they have done little to break down the borders between written and oral language. The research presented here illustrates that miscue analysis can be an even more effective tool in generating bilingual reader profiles when readers are allowed to draw spontaneously from their linguistic resources when reading and retelling texts.

Bilingual Reading as a Unified Process

Recent research on translanguaging adds another dimension to the concept of linguistic resources of bilingual readers. The work on translanguaging presents an alternative concept of language that contends that languages, in the formal sense of the word (i.e., Spanish, English, Greek, and Japanese), are not necessarily separate, bounded systems. Garcia and Wei (2014) explained this point by writing that a translanguaging lens describes how bilinguals have a single linguistic repertoire, which challenges the additive approach to bilingualism that posits that bilinguals are balancing two separate linguistic systems. Just as reading is about communicating and constructing meaning through language processes, translanguaging is about language production and communication. Connecting this view of language to a socio-psycholinguistic perspective to the study of bilingual reading behaviors highlights how reading is a universal process, or a unified language process. Goodman (1996) wrote about the universality of reading, “In spite of the diversity within, reading is a universal process, a single way of making sense of written language” (p. 9). In other words, regardless of the syntactic and semantic features and graphic forms that make up written language systems, bilingual readers draw upon a range of linguistic features within a language or across languages to demonstrate their understandings of written text.

Therefore, bilingual reading is more than the interaction and influence of one language on another as purported by an additive approach to bilingualism (Garcia & Wei, 2014). This argument challenges long-held cognitive theories in investigating bilingual reading behaviors, which have dominated the development of reading assessments of bilingual students (Block, 2003). Following this perspective, studies have examined the development and interrelationships of language and reading development, particularly focusing on how an awareness of sounds in one language at the phoneme level, or phonological knowledge, predicts future reading development in another language (Sparks, Patton, Ganschow, & Humbach, 2009), and crosslinguistic transfer between languages through vocabulary and syntactic awareness (Bialystok, Luk, & Kwan, 2005; Sparks et al., 2009).

Yet, these studies focus on what bilingual readers *have* (i.e., phonological awareness and vocabulary) rather than on what they *do* with language, also a focus from a translanguaging viewpoint. The juxtaposition of socio-psycholinguistic perspectives to reading with the concept of translanguaging addresses language-in-use, or what bilingual readers do when they engage in reading as a language process. In addition, this theoretical frame forefronts readers reading natural, cohesive texts, rather than engaging in decontextualized linguistic components of language or controlled texts, both of which dominate within standardized assessment instruments.

Two Case Studies of Bilingual Readers

Jenny and Mai were two participants in a larger longitudinal empirical study, “*Revaluing Readers and Families*” (Kabuto, 2015). The larger study investigated how families defended and challenged school-based labels, such as *learning disabled*, *dyslexic*, *English Language Learner*, and *dual language learner*, each of which described and interpreted their children’s reading abilities and literate identities. Jenny, Mai, and their families participated in the larger study, which required families, composed of at least one parent and one focal child, to participate in a minimum of 10 weekly sessions, which ran from one to one-and-a-half hours. During the 10-week period, all family members orally read a variety of written texts aloud and engaged in reflective discussions about their oral readings. I also interviewed and observed the families in their home and community settings, and their interactions with each other around reading. Jenny’s and Mai’s families were two out of three bilingual families who participated in the study. For the bilingual families, I took a particular interest in how parents interpreted and described their children’s bilingual oral reading performances to socially construct, define, and defend their children’s bilingual reading abilities. For purposes of this article, I will focus only on Jenny’s and Mai’s bilingual reader profiles as defined by their oral reading performances and retellings in English, Spanish, and Japanese. I selected Jenny and Mai for two reasons. First, Jenny and Mai were both second-grade students and exhibited similar types of translanguaging behaviors that provided alternative views of them as bilingual readers. Second, their profiles suggest that regardless of reading in an alphabetic language (Spanish) or a nonalphabetic language (Japanese), reading is a nonlinear process of meaning construction.

Participants’ Backgrounds

Jenny is a bilingual second-grade student who speaks Spanish and English. She was born in the United States and has attended a dual-language school since kindergarten in a large city. Jenny’s mother, Maria, immigrated to the United States from Ecuador and married her husband after arriving in the United States. Jenny has a brother, Thomas, who was also born in the United States and is seven years older than Jenny. Jenny’s family is of low socioeconomic status and lives in an area with high crime and with a large number of low-income housing options. Because Jenny and Thomas’s district school is not highly rated, Maria searched out a dual-language school. Maria sent her two children to the dual-language school with the assistance of her friend and travels one hour each way on public transportation in order for her children to develop their bilingualism and biliteracy in a dual-language school setting.

Mai is a second-grade student in a public school outside of the same large urban city. The language mode of Mai’s school is English, and she receives English as a second language (ESL) classes five days a week. Mai is the only participant in the study who was not born in the United States and whose family did not intend to stay in the country. Mai was born in Tokyo, Japan, and moved to the United States when she was four years old, at which time she enrolled in preschool. Mai attends a Saturday Japanese school that is housed in the school district’s middle school. In Japanese school, Mai studies Japanese history, math, and language arts. Mai’s family is of middle–high socioeconomic status and speaks, reads, and writes Japanese in the home. Her father works for a large Japanese company that sent him to the United States to work for five years. Mai’s mother is a stay-at-home mother.

Oral Reading and Retelling Data

As part of the study, I collected oral reading and retelling data on Jenny and Mai.

This data consisted of the Qualitative Reading Inventory-4 (QRI-4; Leslie & Caldwell, 2006) and oral readings and retellings for the Reading Miscue Inventory (RMI). All data collection sessions were audiotaped for analysis.

Qualitative reading inventory. At the beginning of the study, I assessed the readers using the QRI-4, which is an informal reading inventory, composed of word lists and comprehension passages, used to determine frustration, instruction, and independent reading levels. The QRI-4 results, along with participants' reading interests, assisted me in selecting English reading materials for the readers. Two bilingual graduate research assistants worked with me during the study and assisted in selecting reading materials in Spanish and Japanese.

Reading miscue inventory. RMI is the collection of oral readings and retellings and the analysis of oral reading miscues (Goodman et al., 2005). I collected RMI data from the English books, and my research assistants collected the oral readings and retellings in Spanish for Jenny and in Japanese for Mai. We followed standard miscue procedures when collecting the RMI data (Goodman et al., 2005). Jenny and Mai read whole stories and confirmed they had not previously read the texts. Based on miscue analysis procedures, Jenny and Mai read texts that were at least one grade level above their QRI-4 instructional level. Goodman et al. (2005) wrote that miscue analysis research has shown that "the majority of standardized and grade-level reading test scores underrepresent students' abilities to handle authentic reading material" (p. 46). The goal was for Jenny and Mai to read materials that were challenging but not unduly challenging, which would inhibit them from reading independently. Jenny and Mai read the texts aloud without interruption or assistance. If they came to something they did not know, they were instructed to do whatever they would do as if they were reading by themselves. After Jenny and Mai completed the oral readings, they provided an unprompted retelling. Afterward, we assisted them in providing an aided retelling, during which we asked follow-up questions to their unprompted retelling to clarify and probe further into their ideas.

Jenny read one English book, *Alexander and the Wind-Up Mouse*, and one Spanish story, *Jack y los frijoles mágicos*, an adaptation of *Jack and the Bean Stalk* (2012). Based on Jenny's QRI results, she read at a level three as her instructional level. According to the Fry Readability Scale, *Alexander and the Wind-Up Mouse* is a fourth-grade-level picture book that tells the story of a real mouse, Alexander, who befriends a wind-up mouse, Willy. The Fry Readability Scale determines text grade level through the average number of syllables and sentences per 100 words. Readability of *Jack y los frijoles mágicos* was determined through the Fernández Huerta Reading Test, which is an adaptation of the Fleisch Reading Ease score that is also based on the number of syllables and the number of sentences within 100 words. According to the Fernández Huerta Reading Test, *Jack y los frijoles mágicos* is at a fifth-grade level.

Mai read one English story, "Spring," from the book *Frog and Toad are Friends* (Lobel, 2011), and one Japanese book, *Ahiru no Tamago* [The Duck's Egg] (Sato, 1995). Based on Mai's QRI results, her instructional reading level in English was at the primer level (kindergarten level). "Spring" is a short story about Frog convincing Toad to wake up from his deep sleep because it is spring. According to the Fry Readability Scale, "Spring" is at the first-grade level. It is written with short sentence structures, some repetitive language, and some picture support. *Ahiru no Tamago* is a picture book about a grandmother who helps to hatch a duck's eggs. Because of a lack of diverse readability scales for Japanese texts, the readability was not calculated. *Ahiru no Tamago* is written in hiragana, one of

three script forms used in the Japanese writing system, which sometimes borrows Roman letters. Hiragana is considered the cursivelike form of the kana script. While Japanese also incorporates *katakana*, Chinese *kanji*, and the Roman alphabet, these scripts are not present in the book. When compared to English and Spanish, which has a subject-verb-object order, the internal structure or the grammatical organization of the Japanese language is subject-object-verb. Additionally, there are times in the Japanese language when the subject is inferred rather than explicitly written.

Because all the participants, including the graduate research assistants and myself, were bilingual and biliterate, language use in the research context was dynamic as it exemplified a translanguaging context. When collecting the RMI data, participants switched language modes, and the research assistants and I encouraged the readers to switch languages if they appeared to have a difficult time expressing their ideas in one language during the retellings. The reason for this supportive language dynamic was to allow the readers to use their linguistic resources in articulating their understandings of the texts.

Data Analysis

The oral readings were analyzed using the in-depth miscue analysis procedure, and the retellings were analyzed using an analytic rubric. Miscue analysis is a diagnostic instrument that provides both quantitative and qualitative data on readers' oral reading performances and retellings. Through the integration of both types of data, as Wilson, Martens, and Arya (2005) suggest, "The purpose of miscue analysis is to provide a 'video' of a child's reading in action" (p. 624).

In-depth miscue analysis procedure. The in-depth procedure allows for the extensive investigation of individual oral reading miscues in conjunction with other miscues at the sentence and text levels. I followed standard in-depth miscue analysis procedures as outlined by Goodman et al. (2005) and described below. After creating a typescript of the story, my research assistants and I marked the following miscues: (a) word-for-word or multiple word substitutions, (b) word omissions, (c) word insertions, and (d) self-corrections. After the miscues were marked, they were numbered and analyzed for syntactic and semantic acceptabilities, meaning change, corrections, graphic and sound similarity, meaning construction, and grammatical relations.

Syntactic acceptability. Syntactic acceptability refers to how the miscue affects the grammatical structure of the sentence. The miscue is marked as a (a) *Yes*, if the miscue is grammatically acceptable in the sentence and the story; (b) *Partial*, if the miscue is syntactically acceptable in either the first part or the last part of the sentence, or if the miscue is syntactically acceptable in the sentence but not within the entire text; or (c) *No*, if the miscue is not grammatically acceptable.

Semantic acceptability. After the miscue is coded for syntactic acceptability, it is then coded for semantic acceptability. Semantic acceptability refers to how the miscue affects the meaning of the sentence and the entire text. The miscue is marked as a (a) *Yes*, if the miscue makes sense in the sentence and in the entire text; (b) *Partial*, if the miscue is partially correct in the beginning part or the end part of the sentence, or if it makes sense in the sentence but not in the text; or (c) *No*, if the miscue does not occur in a meaningful structure.

Meaning change. If a miscue is coded a *Yes* for syntactic and semantic acceptabilities, it is then coded for meaning change. The miscue is coded for a (a) *No*, if the miscue does not change the meaning; (b) *Partial*, if the miscue changes a minor idea,

event, character, fact, or concept in the text; or (c) *Yes*, if the miscue changes a major idea, event, character, fact, or concept in the text.

Self-corrections. Self-corrections account for how readers monitor their reading. The miscue is coded as (a) *Yes*, if the miscue was corrected; or (b) *No*, if the miscue was not corrected.

Graphic similarity. Word-for-word substitutions were coded for their graphic similarity, i.e., the degree to which the produced word looks like the expected word. Word-for-word substitutions occur when readers read one identifiable word for another, such as reading *couldn't* for *cried*. They can also occur when a reader's attempt to sound out words results in mispronouncing words and creating nonword miscues. An example of a nonword miscue is reading page as *\$pag* (the \$ denotes that the reader mispronounced the word and generated a nonword). Substitutions were coded for high graphic similarity (e.g., reading way for *why*), some graphic similarity (e.g., reading *couldn't* for *cried*), or no graphic similarity (e.g., reading *in* for *out*).

Sound similarity. Word-for-word substitutions were coded for their sound similarity, or how much the word the reader read sounded like the expected word. Substitutions were coded for high sound similarity (e.g., reading way for *why*), some sound similarity (e.g., reading *couldn't* for *cried*), or no sound similarity (e.g., reading *in* for *out*).

Meaning construction. After coding the miscues for semantic acceptability, meaning change, and self-corrections, miscues were examined for how they affected the readers' construction of meaning. Meaning construction is evaluated through semantic acceptability, meaning change, and self-corrections. Meaning construction was coded as (a) *No loss in meaning*, if the miscue was coded as semantically acceptable with no meaning change, or if the miscue was corrected; (b) *Partial loss in meaning*, if the miscue was coded as semantically acceptable with partial meaning change, or if the miscue was coded as partially semantically acceptable; and (c) *Loss in meaning*, if the miscue was coded as semantically unacceptable with no self-correction.

Grammatical relations. After the miscues were coded for syntactic acceptability, semantic acceptability, and self-corrections, the miscues were examined for how they affected the grammatical structures of the sentences. Grammatical relations are evaluated through syntactic acceptability, semantic acceptability, and self-corrections. Grammatical relations were coded as (a) *Strength*, if the miscue was syntactically and semantically acceptable or self-corrected; (b) *Partial*, if the miscue was syntactically acceptable and partially semantically acceptable in the first or second half of the sentence; (c) *Overcorrection*, if the miscue is syntactically and semantically acceptable, but the reader corrects the sentence; and (d) *Weakness*, if the miscue was not syntactically or semantically acceptable and not corrected.

Retelling rubric. The aided and unaided retellings were transcribed and analyzed using an analytic rubric (see Appendix). The retellings were scored using the following five criteria, or story elements: (a) characters, (b) problem, (c) resolution, (d) events, and (e) details. The criteria used to evaluate the retellings is based on retelling analyses from previous miscue studies (Martens, Arya, Wilson, & Jin, 2007; Wilson et al., 2005). Each criterion is rated on a scale of 1–4, with 1 being the lowest and 4 being the highest. After rating each criterion, the criteria were averaged together to compute the overall retelling score.

Inter-rater agreement. In order to determine agreement among the aforementioned miscue codings and retelling scores, my graduate research assistants and I separately coded each oral reading and retelling. Both research assistants had extensive graduate-level training in miscue analysis coding procedures, including transcribing and scoring the unaided and aided retellings, before participating in the study. For Jenny’s oral readings and retellings, one research assistant, who is bilingual and biliterate in Spanish and English, and I coded *Alexander and the Wind-Up Mouse*. The same research assistant coded *Jack y los frijoles mágicos*. Because I am not a Spanish speaker, a bilingual outside reviewer, who spoke Spanish and English and also had miscue analysis training, independently reviewed the coded miscues and retellings for *Jack y los frijoles mágicos*. For Mai’s oral readings and retellings, the second research assistant, who is bilingual and biliterate in Japanese and English, and I coded “Spring” and *Ahiru no Tamago*.

After the oral readings were independently coded and the retellings scored, the coders and the reviewer came together to review each of the miscues and the miscue codings from the English, Spanish, and Japanese in-depth miscue analysis. If we found disagreements among the codes during the discussion, we reviewed and discussed the miscues until we found agreement in how to code the miscues. The miscue statistics presented in Table 1 reflect the final miscue codings.

The Development of Bilingual Reader Profiles

After all the data were analyzed, I created a reader profile for each case. The reader profile consisted of the books the readers read, the typescripts with marked miscues, the miscue statistics, the transcribed retellings, and the retelling rubrics that evaluated the retellings. The miscue statistics were composed of the following:

Meaning construction percentages, or miscues with (1) no or partial meaning loss and, (2) meaning loss.

Grammatical relationships, or miscues that demonstrated grammatical (1) strengths and partial strengths, and (2) weakness.

Sound similarity.

Graphic similarity.

As the final part of the reader profile, I formed a narrative of the readers, which highlighted the reading strategies that they employed when reading, the types of miscues that they generated, and the number of self-corrections, their comprehension, and how they used two languages when retelling the texts.

Table 1
In-depth Miscue Analysis Statistics and Retelling Scores for Jenny’s and Mai’s Reading Miscue Inventories

Reader	Text	Total Miscues *(MPHW)	Meaning Construction		Grammatical Relationships		Retelling Score
			No/Partial Loss Totals (%)	Loss Totals (%)	Strength/ Partial Strength Totals (%)	Weakness Totals (%)	
Jenny	Alexander and the Wind-Up Mouse	35 (5)	7 (20%)	28 (80%)	24 (69%)	11 (31%)	4

Table 1 continued

Reader	Text	Total Miscues *(MPHW)	Meaning Construction	Grammatical Relationships	Retelling Score	
Mai	<i>Jack y los frijoles mágicos</i>	5 (.07)	4 (80%)	1 (20%)	4 (80%)	1(20%) **4
	<i>Spring</i>	57 (13)	26 (46%)	31 (54%)	38 (67%)	19 (33%) **2.3/3.5
	<i>Ahiru no Tamago</i>	18 (5)	11 (61%)	7 (39%)	13 (72%)	5(28%) 3.5

* Miscues Per Hundred Words

** Jenny and Mai retold their stories using two languages. Jenny’s retelling for the Spanish text “*Jack y los frijoles mágicos*” was retold in English and Spanish. Jenny’s retelling score for the story is reflective of the bilingual retelling. Mai retold “*Spring*” in English and then in Japanese. Mai’s retelling score of a 2.3 is reflective of the English retelling, and her score of a 3.5 is reflective of the Japanese retelling.

After I created each reader profile, I compared the cases to find commonalities and differences. By comparing the case, I engaged in what Miles, Huberman, and Saldana (2013) term as a cross-case analysis, which allowed me to find similarities and differences across the cases, and thereby elucidate themes within case dynamics. At the same time, one of the limitations of this method is that findings and results are not generalizable across large populations of bilingual readers. Instead, comparing case studies allowed me to deepen my understandings of the use of miscue analysis as a culturally relevant assessment instrument for Jenny and Mai.

Jenny’s Bilingual Reader Profile

Jenny’s reading of *Alexander and the Wind-Up Mouse* exemplifies how her oral reading performance, as documented by her miscue statistics, was not indicative of the extensive knowledge and understanding that she had of the story (see Table 1). When reading *Alexander and the Wind-Up Mouse*, Jenny made a total of 35 miscues, or 5 miscues per hundred words (MPHW), and self-corrected two of these 35 miscues (Table 2). Out of the 35 miscues, 28 were substitutions. Jenny’s miscues in English tended to maintain the grammatical structure of the sentences over making sense (Table 1). Sixty-nine percent of her miscues were coded as a strength or partial strength in the area of grammatical relations. For instance, Jenny read the sentence, “The two friends spent many happy hours together” (Lionni, 1969, p. 10) as “The two friends spent many hours together.” Jenny omitted the word *happy*, but her omission did not negatively affect the grammar or the meaning of the sentence. The majority of Jenny’s miscues did not make sense, however, as 80% of her miscues resulted in meaning loss.

Table 2
Types of and Total Miscues Produced by Jenny and Mai during the Reading Miscue Inventory

Reader	Text	Self Corrections	Miscue Type				Totals
			Omissions	Insertions	Substitutions	Complex	
Jenny	<i>Alexander and the Wind-Up Mouse</i>	2	5	2	28	0	35
	<i>Jack y los frijoles mágicos</i>	1	2	0	3	0	5
Mai	<i>Spring</i>	8	4	1	51	1	57
	<i>Ahiru no Tamago</i>	5	2	3	13	0	18

The discrepancy between miscues that were syntactically (69%) and semantically (20%) acceptable was due to the larger number of nonword substitutions. Jenny read the sentence, “The leaves rustled and there stood the lizard” (Lionni, 1969, p. 21) as “The leaves \$rushled and there stood the lizard.” Jenny’s pronunciation of the word rustled as /rushled/ sounds like a verb and thus partially fits the grammatical place of the word (i.e., a verb for a verb or a noun for a noun) (Goodman et al., 2005). The substitution, however, resulted in meaning loss because her mispronunciation did not result in a meaningful word.

Jenny provided a comprehensive retelling and had an extensive understanding of the story. Jenny’s retelling score was a four. When asked to retell the story, Jenny said,

[It’s about] Alexander, a normal mouse, and then he met a new friend. But he wasn’t normal. He had a key and a wheel but Alexander had feet. So Alexander... there was a lizard. So the lizard said to Alexander [to] bring him a purple pebble. So Alexander did it but when the magic did it... when Alexander went to the box, it was empty. But he thought that the magic didn’t work. And then he went to his hole [and] he find Willy and that’s how the story ends.

In the retelling, Jenny identified the three major characters in the story and provided the overall problem and some major story events. When I probed further into Jenny’s understanding, she was able to discuss how Alexander originally went to the lizard so he could be a toy mouse like Willy but changed his mind in the end.

Despite the majority of her miscues resulting in meaning loss (80%), Jenny understood the story at both the explicit and implicit levels. In her retelling, she addressed the plot twist in the story and was able to make emotive connections between the characters.

When reading in Spanish, Jenny’s high miscue percentages and her high retelling score suggest her effective oral reading performance and her strong story comprehension. Jenny made very few miscues, a total of five, or 0.7 MPHW (Table 2). Out of the five, she corrected one. Jenny’s Spanish miscues made sense and were grammatically acceptable in the sentences. Eighty percent of her miscues were coded as no or partial loss in meaning, and 80% were coded as grammatically acceptable or partially acceptable. An example of a miscue that was both meaningful and grammatically acceptable is the substitution of *rapido* for *rápida* in the sentence, “‘*El gigante se acerca, ’dijo la mujer, quien rápidamente ocultó a Jack en un armario* [‘The giant is coming,’ said the woman, who quickly hide Jack in a closet.]” (*Jack y los frijoles mágicos*, 2012, p. 3). Jenny’s substitution is a high quality one in that it did not change the meaning of the story or disrupt the grammatical structure of the sentence.

Jenny received a retelling score of four. She provided a detailed and extensive retelling of the story. When retelling the Spanish text, Jenny retold the story in English and Spanish. When the research assistant asked her to retell the story, she asked in English which prompted Jenny to start in English. Jenny started the retelling as,

The story was about a boy named Jack and his mother. They were poor and the mother sent him to get some money because she wanted to sell the cow. So then when Jack went to sell the cow, there was a little man and the man said that he would buy the cow. The man said, “How are you going to pay?” Jack said that he will pay with some magic beans. Jack gave the man the magic beans and took the cow home. Jack gave the beans to his mom but his mom didn’t want the beans. His mom wanted money so the mom threw the beans out of the house. Then the

other morning when Jack woke up, his room was so dark that Jack opened the window and saw a big... a big...

Jenny appeared to struggle with finding the English word bean stalk and, with the encouragement of the research assistant, Jenny said,

Un tallo gigante [a giant stem]. And then Jack climbed and climbed until he got to the castle. So then he touched the door, and there was a woman that opened him the door. And the woman told him that there was a big giant that ate kids. So then Jack said that he only wanted to get money, so then the woman let him in. And the giant came, and the woman hid Jack. And the giant smelled the kid, and Jack was so scared. So when the giant go to sleep, he got out and he walked and then...and then...

Again struggling with how to describe the next events in the story in English, Jenny was encouraged to complete the retelling in Spanish. Jenny finished,

Camino de puntitas. El gigante se despertó y Jack corrió e dijo a la mama que pase el hacha para cortar el tallo y el gigante murió cuándo se cayó y Jack y su mama fueron ricos para siempre. [...tippy toes. When the giant awoke, Jack ran and told his mom to pass him the axe to cut the stem and the giant died when he fell and Jack and his mom were rich forever.]

Jenny's retelling of *Jack y los frijoles mágicos* attests to how a translanguaging context can support bilingual readers as they are able to move ideas across languages. Instead of viewing Jenny's difficulty with finding the English word to retell the Spanish story as a lack of vocabulary, for instance, the translanguaging context allowed Jenny to demonstrate her knowledge of the story across language modes and, hence, her story comprehension.

When comparing Jenny's oral reading performances across the English and Spanish texts, she provided a stronger oral reading performance when reading in Spanish. Her Spanish miscues tended to make sense and maintain the grammatical structure of the sentences and texts over her English miscues. Jenny had a higher rate of self-corrections when reading in Spanish than in English. She corrected every one in five miscues in Spanish and every 17.5 in English.

Mai's Bilingual Reader Profile

According to the miscue statistics, Mai's English miscues when reading "*Spring*" tended to be grammatically acceptable or partially acceptable, but they did not always make sense in the sentence or text (see Table 1). Sixty-seven percent of her miscues were coded as a strength or a partial strength in the area of grammatical relationships. At the same time, 46% of her miscues resulted in no or partial meaning loss. Similar to Jenny's, Mai's nonword miscues were partially acceptable grammatically, but resulted in a loss of meaning. For instance, Mai read voice as /voik/ and inside as /insid/ in the sentence, "Blah," said a voice from inside the house" (Lobel, 2011, p. 4). When reading "*Spring*," Mai made 57 miscues, or 13 MPHW. The majority of Mai's miscues were substitutions (51 out of 57 total miscues). Out of the 57 miscues, Mai self-corrected eight.

Mai's reading of "*Spring*" exemplifies how a translanguaging context supported her ability to demonstrate her understanding of the story. When I asked Mai to retell the story in English, she did not provide a detailed retelling, and it was difficult to follow

because she used the pronoun he rather than the names of the characters. Mai's retelling received a score of a 2.3 and is as follows,

Frog said wake up but he did not wake up. So he went to his house and he wake up but he got to bed again. And he calendar change. November is cold so he is sleeping, but he did not changing the calendar. And he change it and he wake up.

Noticing the lack of details and the difficulty Mai had in using English to retell the story, she was asked to retell the story in Japanese. Mai received a score of a 3.5 for her Japanese retelling and a translated version follows,

Frog said it is morning, but Toad did not wake up. So he went to wake him up, but he did not want to wake up at all. He went inside to wake him up. He didn't wake up at all so he waited. He woke up once but then went back to bed. And then the calendar wasn't changed. November is very cold. He didn't change the calendar. Frog changed the calendar for him and said, "It is already May." Then Toad woke up and they went out for a walk.

Mai's Japanese retelling of "Spring" is not only more cohesive and easier to follow because she presented the plot in a chronological fashion, the retelling provided more details and incorporated story language and dialogue. Mai's retelling in English did not demonstrate the depth of her understanding of the story. By drawing on Japanese, she could demonstrate her competence as a reader who understood the story regardless of her miscue percentages and her English language ability.

When reading *Ahiru no Tamago*, Mai produced higher miscue percentages. Mai made fewer miscues—a total of 18 (5 MPHW), five of which she self-corrected. Mai produced 13 substitutions and three insertions. Seventy-two percent of Mai's miscues were grammatically acceptable or partially acceptable in the sentences and texts, and 61% had no or partial meaning loss.

Mai received a 3.5 for her retelling, and the translated version follows.

The grandmother went to look for the eggs, but she went back to bed. Everyone was worried. They thought that the grandmother was sick. They gathered fruits and vegetables for the grandmother. And then the duck knocked on the door and asked everyone if she knew where her eggs went. Grandmother heated up the eggs and everyone knew that she wasn't really sick. Everyone wondered what they should do with all the food and they decided to have a birthday party for the chicks.

While Mai presented a linear, chronological retelling with details that contained vocabulary and phrases from the story, she had two misconceptions about the plot. The first misconception was that the grandmother went to look for the eggs in the beginning of the story when, in fact, she did not. Instead, the grandmother realized that she was tired and wanted to go back to bed to rest. Second, Mai stated that the grandmother warmed up the eggs. Rather, she found the eggs and brought them back to the duck so the duck could hatch them by sitting on them.

When comparing Mai's oral reading performances for the English and Japanese texts, Mai provided a stronger oral reading performance when reading in Japanese. She also had a higher rate of self-corrections when reading in Japanese. She corrected 3.6 miscues in Japanese and 7.1 miscues in English. When allowed to use Japanese to retell

“Spring,” Mai was able to express her story comprehension and received a higher retelling score than when she retold the story in English.

Miscue Analysis as a Culturally Relevant Assessment

These two bilingual reader profiles illustrate how miscue analysis can be a descriptive evaluative tool that does not privilege reading in English over reading in other languages. At the same time, when placed in a translanguaging context, the use of miscue analysis highlights how language separation within the assessment context did not necessarily equate with documenting reading competence in either language. These findings extend the current research on miscue analysis that calls for an awareness of readers’ reading patterns and proficiencies in both languages, rather than privileging one over another (Hopewell, 2013; Palmer, Martínez, Mateus, & Henderson, 2014; Mott, 1981). The findings show that when language is viewed as a dynamic, unbounded tool for the expression of meaning, we can broaden our perspective of bilingual reading behaviors and proficiencies.

As a culturally relevant assessment tool, miscue analysis maintained Jenny’s and Mai’s knowledge and performance styles and their linguistic strengths within a translanguaging context so that the readers could read across languages and texts. Both Jenny and Mai participated in home cultures in which English was not the dominant language, and neither reader had parents who were native English speakers. The use of miscue analysis allowed for the evaluation of the readers’ linguistic knowledge as defined by their everyday cultural experiences around language and literacy. Based on the miscue statistics, Jenny and Mai produced more effective oral reading performances when reading in Spanish and Japanese, respectively, than when reading in English. In addition, they had higher self-correction rates when reading in Spanish and Japanese than in English, suggesting that they monitored for meaning more frequently in those instances.

Further evidence of the culturally relevant ways that miscue analysis could assess Jenny’s and Mai’s reading performances is the comparison of the QRI-4, which positioned each of them differently than the findings from the RMI. According to Jenny’s QRI results, she read at the second-grade level. When she read books at the fourth- and fifth-grade levels and spoke in English and in Spanish for the RMI, Jenny showed that her comprehension was well beyond the second-grade level. Through the RMI, Jenny could draw from the range of linguistic resources across English and Spanish. Similarly, Mai’s QRI results showed her reading at the kindergarten level, yet she demonstrated her ability to understand and comprehend stories when she could use Japanese to retell “Spring,” a first-grade-level text. Mai also showed more effective reading behaviors when she read *Ahiru no Tamago*. In fact, findings from the miscue analysis show that Jenny and Mai made fewer miscues when reading in a language other than English. Discussing culturally and linguistically appropriate assessments, Hoover and Erickson (2015) supported the fact that assessments in English become “an English test... rather than an appropriate device for measuring true knowledge and skills” (p. 20). While the QRI-4 serves important purposes in assessing students, it was limited in highlighting Jenny’s and Mai’s strengths as bilingual readers.

Using miscue analysis to examine the bilingual reading behaviors illustrates that despite the number of miscues, Jenny and Mai were able to understand the texts, suggesting that full control over the letter sound relationships within written languages did not necessarily precede these bilingual readers’ abilities to understand texts. Regardless of the miscue statistics, both readers received high retelling scores, suggesting an effective

overall comprehension for all the texts. The translanguaging context was particularly important for Mai and Jenny as second-grade readers. As two young readers, Jenny and Mai were developing language users who needed the freedom to pull ideas across linguistic borders. Mai's reading of "Spring" exemplified this idea. After reading "Spring," Mai retold the story in English and received a retelling score of 2.3. She had a difficult time putting cohesive sentences together in English and in using story-specific vocabulary. Mai's Japanese retelling of the story, however, demonstrated her competence and linguistic strengths as a reader. Language separation for Jenny and Mai would only limit their ability to express themselves and would not have allowed me to observe the full scope of their knowledge.

Concluding Thoughts

The two bilingual reader profiles highlighted in this manuscript suggest that miscue analysis can be used as an assessment in the evaluation of bilingual oral reading performances and comprehension. Calls for diverse assessment measures are premised on the findings that illustrate how bilingual reading behaviors are less likely to be misinterpreted when we consider the cultural and linguistic relevance of the assessment (Ebe, 2010; Hoover & Erickson, 2015). The use of miscue analysis was a culturally relevant assessment that provided a multidimensional perspective on the ways in which these readers constructed meaning. Very few reading assessments are able to move among the languages of the text, the languages of the readers, and the languages of the social context in which the assessment is embedded. Miscue analysis is an evaluative instrument capable of doing so.

The two bilingual reader profiles also support the socio-psycholinguistic notion that the reading process, as a language process, transcends language borders. With the integration of the theoretical construct of translanguaging, these bilingual readers used the reading process described by socio-psycholinguistic perspectives across oral and written languages, including even written languages that incorporate different writing systems (Goodman et al., 2012). Differences in writing systems did not lead to difficulties or barriers in orally reading or comprehending the texts. Jenny's and Mai's bilingual reader profiles exemplify this point.

Although miscue analysis has certain benefits in the assessment of bilingual readers, it also presents challenges, particularly when used in classroom settings. The greatest challenge for teachers and researchers is that they must have extensive knowledge about the language when it is not English. Finding the human resources required to conduct and assist in the evaluation of readers' non-English miscues can be a challenge within many educational settings. Not only should evaluators have clear knowledge of the language and writing systems, they must also have proficient knowledge of miscue analysis procedures and a strong theoretical foundation in bilingualism and bilingual reading. The graduate research assistants who participated in this study underwent extensive training in miscue analysis procedures and participated in regular research meetings. This type of dedication in terms of time and resources may be a barrier for budget-conscious schools and school districts.

In addition to recruiting knowledgeable evaluators, finding appropriate texts in other languages may be a challenge, particularly if readers speak an indigenous or endangered language. With Mai, for example, it was a challenge to find quality reading materials in Japanese and criteria to evaluate these materials. Teachers, evaluators, and researchers need to be cautious about using translated materials, as they might present awkward sentence structures and vocabulary. Ferguson, Kato, and Nagahiro (2012) found

that translation errors in texts can be reflected in readers' miscues. Therefore, translation error miscues are more of a mirror of the text than of reading proficiency. Having native speakers of the language preview the materials to ensure the quality of the text and the language use is recommended.

Although the two bilingual reader profiles presented in this manuscript can raise awareness regarding the potential for miscue analysis, further research is needed, particularly in examining the use of miscue analysis across writing systems and the cultural appropriateness of the text when conducting a miscue analysis (Ebe, 2010; 2012). As Ebe (2010) found, bilingual readers who can better relate to the text generate higher retelling scores and are more likely to produce miscues that do not change the meaning or grammar of the sentence.

The results of the two bilingual reader profiles presented here demonstrate that miscue analysis has potential in assessing the reading competence of bilingual readers. It also provides a comparative tool to evaluate differences in oral reading performances across languages. It is this type of tool that is needed to further the movement of developing culturally relevant assessments that do not favor monolingual English reading competence over other reading competencies for bilingual readers, and that reflect contemporary views of language that position it as a dynamic and fluid meaning system.

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Appendix Retelling Rubric

Criteria: Story Elements	Score of 4	Score of 3	Score of 2	Score of 1	Score
Characters <i>List main and minor characters:</i>	The reader provides main and minor characters. <i>List characters:</i>	The reader provides main characters. <i>List characters:</i>	The reader provides some of main characters. <i>List characters:</i>	The reader does not provide main character, or confuses main and minor characters. <i>List confusions:</i>	
Problem <i>Story problem:</i>	The reader provides an in-depth discussion of the problem, including significant details and events. <i>Reader response:</i>	The reader discusses the problem, including some details and events. <i>Reader response:</i>	The reader provides an incomplete discussion of the problem. <i>Reader response:</i>	The reader does not discuss the problem in a clear manner. <i>Reader response:</i>	
Resolution <i>Story resolution:</i>	The reader provides an in-depth discussion of the the resolution, including significant details and events. <i>Reader response:</i>	The reader discusses the resolution, including some details and events. <i>Reader response:</i>	The reader provides an incomplete discussion of the resolution. <i>Reader response:</i>	The reader does not discuss the resolution in a clear manner. <i>Reader response:</i>	
Events <i>List main and minor events:</i>	The reader provides main and minor events. <i>List events:</i>	The reader provides the main story events. <i>List events:</i>	The reader provides some of the story events, or provides mostly minor events. <i>List events:</i>	The reader does not provide main and minor story events. <i>List events/ confusions:</i>	
Details <i>List main and minor details:</i>	The reader provides accurate main and minor details. <i>List details:</i>	The reader provides main details. <i>List details:</i>	The reader provides some accurate details, or provides mostly minor details. <i>List details:</i>	The reader does not provide accurate details, or consistently confuses main and minor details. <i>List details/ confusions:</i>	
Theme <i>Possible story themes:</i>	The reader provides a theme supported by events and details from the story. <i>Describe theme:</i>	The reader provides a theme supported by some events and details from the story. <i>Describe theme:</i>	The reader provides a theme without the support of events and details from the story. <i>Describe theme:</i>	The reader does not provide a theme to the story. <i>Reader Response:</i>	
Total score is the average of the story element scores.				*Total Score	

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