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*Original Paper*

## Retrospective Miscue Analysis in a Second Language for a Bilingual Student

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### Abstract

Retrospective miscue analysis (RMA) is an instructional strategy used jointly by readers and their mentors to help a reader understand his/her reading strategies. Participation in this strategy by the reader increases one's confidence as he/she learns to understand one's miscues and the reasons for them. The participant in this study, a graduate student who was reading in his/her second language, made understandable miscues in his oral reading. Identified problems included miscues that were based on a) traditional miscues, b) the participants' uncertainty of how to pronounce a subsequent word because of absence of such word-form changes in his/her first language, and c) grammatical/syntactic differences between one native language and the second language in which he/she was reading. Use of the RMA provided the participant with useful strategies to use in understanding and overcoming his reading challenges, as well as increased confidence in his reading abilities.

**Keywords:** Retrospective miscue, bilingual, comprehension, social constructivism

### 1. Introduction

Comprehension is central to all reading (Goodman, Martens, & Flurkey, 2016); however, it can never be inferred from reading performance alone because it involves an array of factors intrinsic to each particular reader. Moreover, it is influenced by the reader's background knowledge of the use of language (Clay, 2014; Goodman, Fries & Strauss, 2016; Smith, 2006) and how the reader values himself/herself as a member of the literacy club (Smith, 2006). Every reading is a learning experience that contributes to continuous reading development in which readers learn that words are not the same in every context, and that in order to comprehend the text, readers mainly focus on making meaning and not reading word by word (Goodman, Martens, & Flurkey, 2016). Experienced Speech and Language Therapists and teachers know that proficient readers self-correct only those miscues that are disruptive to the reading process (Goodman, 1996). This is because they make sense out of print using their background language knowledge to make inferences and predictions of the text they are reading (Smith, 2006). Proficient readers produce high quality miscues, that is, those that do not change the meaning of text, but show that the reader is comprehending the text (Goodman, Watson, & Burke, 2005; Moore & Giles, 2005). They use strategies such as selecting, predicting, confirming, and inferencing, to construct meaning and address their disruptive miscues (Goodman, Martens, & Flurkey, 2016). In contrast, struggling readers usually produce low quality miscues, those that change the meaning of the text and interfere with the process of constructing meaning (Goodman, Watson, & Burke, 2005; Moore & Giles, 2005). They do not usually make self-corrections because they do not comprehend what they are reading sufficiently to construct meaning.

Retrospective miscue analysis (RMA) is an instructional strategy used to note the miscues and discuss them with the expert (teachers, clinicians or peers). This helps readers to revalue themselves as literacy club members, recognize their reading strategies as their strengths and build up their confidence in the process of becoming proficient readers (Goodman, 1982; Yang Wang & Giles, 2017). Through discussion of their miscues with the teachers, clinicians or among themselves, RMA helps readers to take risks in reading the text, monitor their reading, and gain confidence of their language learning status as active members of the literacy club (Born & Curtis, 2013; Yang & Gilles, 2017). RMA helps

speech and language therapists and teachers to get an insight of the readers' thought process and expand on readers understanding of text (Moore & Gilles, 2005).

Goodman and Marek (1996) posit that students must be helped to revalue themselves as active members of the literacy club through RMA. They further postulate that readers must revalue the process of reading as the construction of meaning in response to print and must come to appreciate their own strengths, to recognize the productive strategies they already use, and to build positively on those strengths. This is effectively done through RMA because it offers them an opportunity to identify and discuss the miscues that they had produced. RMA helps students not only revalue their thinking, but it empowers readers to see miscues as repeated attempts to construct meaning and sense of the text they are reading. Thus, the readers no longer consider miscues as reading errors, rather as stepping stones to build on in the process of becoming proficient readers (Almazroui, 2007). The teacher or clinician will provide appropriate mediation after identifying the type of miscues and knowing how they are produced.

The reader's background and previous experiences play an important role during the reading process as the reader interacts with the text to find answers to the questions (Goodman, 1996). Readers simultaneously draw on these three cueing systems during the reading process: graphophonic, syntactic, and semantic cues (Goodman & Marek, 1996). The use of these three cueing systems show the strategies that readers use during the reading process. The graphophonic cueing system relates to the visual appearance of the word in the text and what the brain sees when it looks at the letters on the page (Davenport, 2002; Goodman, 1996). The syntactic cue gives readers information about words and the grammatical structure of the text (Davenport, 2002; Goodman, 1996). Finally, the semantic cue is the use of meaning to read an unknown word (Davenport, 2002). Proficient readers do not merely sound out words, but use a balance of these three cueing systems to create meaning from a text (Goodman & Marek, 1996). They use all their background knowledge to decode, predict, and confirm meaning in text as they read, bringing to bear semantic (meaning), syntactic (grammar), and graphophonic (letter-sound association) language cueing systems (Born & Curitis, 2013; Goodman, 1996; Weaver, 1994).

As children are learning how to read by reading, they are encouraged to work closely with the teachers or clinicians so that together they acquire insight into the reader's strategies. This allows the reader to examine his/her own reading process and to evaluate, understand, and discover the reading strategies that he/she is employing (Martens, 1998). Teachers or clinicians can help students revalue their thinking and perceptions of themselves as readers through RMA sessions, by helping them discover that miscues show they are thinking. This process can reveal strengths and awareness of themselves as readers (Almazroui, 2007). Thinking metacognitively enables readers to activate new strategies to construct meaning, such as self-correcting and rereading. This is the process of constructing new strategies that assist struggling readers to become proficient readers (Black, 2004). The teacher or clinician should direct the reader's attention to the reading strategies he was using during the reading process to effectively boost his confidence as a reader (Moore & Brantingham, 2003). By engaging readers in the process of analyzing their own miscues, the teacher or clinician attempt to make readers more cognizant of their own reading strategies, building on their strengths as readers while also dispelling any misconceptions about the reading process (Wurr, Theurer, & Kim, 2008).

RMA helps readers become more aware of the reading strategies in their repertoire and to value their knowledge of the language systems that they are using while they read a text (Goodman & Marek, 1996). Students' beliefs about themselves as readers can influence literacy development as they begin to understand that reading is more than word calling and decoding words, but a meaning-making process (Goodman, 1996; Goodman, 1996). RMA is useful for the clinician and the client as it helps both to discover the reading strategies that the client uses during the reading process. Both are learners at the same time as they are socializing. Learning is thus always interesting for the learner when it is done in the context of social interaction (Vygotsky, 1978).

Non-native speakers of English experience additional difficulties in the meaning-making process during reading. Quiyan and Junju (2011) explain that various factors influence the second-language reading process, such as second language proficiency, cultural schemata, and cross-language difference.

Many adult bilingual readers are proficient in their first language but struggle in their second language (Goodman, 1996; Wright, 2010; Yang Wang & Giles, 2017). Like any other readers, they produce miscues which give teachers or clinicians insights into their reading strategies (Goodman, Watson, & Burke, 1987). Miscues are an important part of reading because they provide evidence of readers' background knowledge and meaning-making (Goodman, Martens, & Flurkey, 2016).

## **2. Theoretical Framework**

This study is guided by the theoretical framework of social constructivism (Kamberelis & Dimitriadis, 2005; Vygotsky, 1978). Reading is an active, receptive language process in which the reader interacts with the text (Goodman, 1996). This highly constructivist view of reading is rooted in socio-psycholinguistics, which asserts strong dynamic connections among social, cognitive, and linguistic aspects of reading and language development (Goodman, 1996). From a constructionist perspective, meaning and experience are socially produced and reproduced, rather than being innate to each individual (Burr, 1995). Reading, just like learning, is a process that is socially constructed (Goodman, Martens, & Flurkey, 2016; Vygotsky, 1986), that is, the reader constructs meaning of the text as he is interacting with the text using his background knowledge. RMA provides opportunities for teachers/clinicians and readers to transform the readers' views of reading processes and offer an environment in which readers learn to revalue themselves as active language users.

Participatory observation technique was used by the first author while video recording the oral reading sessions (Spradley, 1980) and structured interviews during the RMA to collect authentic and contextual data (Goodman, Watson, & Burke, 2005). This allowed the first author to understand how the reading process was accomplished by the participant.

## **3. Purpose of Study**

The purpose of this study was to discover the reading strategies that a bilingual graduate student uses when reading in his second language. The following research questions were investigated:

1. What strategies does a bilingual graduate student use to help make meaning while reading in his second language?
2. How might retrospective miscue analysis influence the bilingual graduate student's perception of himself as a proficient reader in his second language?
3. How does a graduate student explore his reading processes and perceptions as a reader in English through Retrospective Miscue Analysis?
4. What do the miscues reveal about the influence of his first language on the second language?

## **4. Method**

### *4.1 Participant*

The participant was a first-year university doctoral student majoring in Applied Language and Speech Sciences who had a PhD of History in Intellectual Thoughts in Ancient China. He was chosen to participate in the study because he is a bilingual student who was very quiet in class and who rarely asked questions or made contributions even when the professor deliberately invited the class for contributions on any given topic. He started learning English as a subject in middle school (grade 6 - 8) while in China in 1986. He had studied English through formal classroom instruction without much exposure to English for its communicative use but rather for class assignments and examination purposes. This was because in China there were no meaningful social engagements in which he could use English for communication. Before relocating to the USA, he used English to obtain necessary information from the internet or to read an appliance manual written only in English. He was a proficient reader in his first language, Mandarin Chinese, and read some of the study materials in Chinese on his laptop computer. He passed Test of English as a Foreign Language (TOEFL) before his studies in the USA and could not be in an intensive English program (IEP) before admission into graduate school.

#### 4.2 Data Source

This study relies on two reading aloud sessions, two RMA sessions and a modified Burke Reading Interview as data sources to the findings. A modified Burke Reading Interview is an instrument that is used to collect information about the participant's process of literacy acquisition. This instrument was used to collect data from the participant through an oral interview. At the beginning of the first reading aloud session, the first author provided the participant with the procedure of miscue analysis. The researcher provided instructions for the readings to the participant, for instance, that once he had started reading aloud, he had to complete the given passage without stopping or asking for assistance, and that his readings would be video recorded. The researcher also told the participant that he would be expected to retell each passage as much as possible after he had finished reading it. This was to demonstrate the comprehension of the passage he had just read.

The participant read aloud the two passages from two books by different authors in two different sessions which were video recorded for accuracy and future reference. According to Goodman, Watson, and Burke (2005), texts chosen for miscue analysis should be new to the reader, yet include concepts that are familiar, and difficult enough to challenge the reader but not so difficult that the reader cannot continue independently. Based on this criterion, two passages from textbooks used in the communication disorders department were selected because they contained the level of English appropriate for a graduate student. However, he had not yet taken the courses in which these textbooks were used so that they were unfamiliar to him. Each reading aloud session was followed by retelling activity. The first passage was from "*Understanding reading*" (Smith, 2004; pp. 56 - 59) of 1, 269 words. The participant was given a copy of the recording for him to listen to and discover his miscues before the RMA conference with him. After six days, the researcher and the participant had a RMA conference where they identified and discussed the miscues that the participant had produced while reading the first passage. They played the video recording to listen to identified portions of the recording where he had produced the miscues by mispronunciations of the word, repetition, substitutions, insertion or omission.

There was a period of ten days between the first reading and the second reading. The second passage that he read was from "*Reading - The grand illusion: How and why people make sense of print*" (Goodman, Fries, & Strauss, 2016; pp. 138 - 140) and was 966 words in length. After two days, the researcher and the participant had a RMA conference where they identified and discussed the miscues he had produced while reading the second passage.

The participant's oral readings generated the miscues to give him and the researcher insight into the reading strategies the participant was using while reading the selected passages. During RMA, both the researcher and the participant had identified the specific miscues each one wanted to discuss with the other. The researcher asked the participant to explain the cause of the interlanguage miscues in addition to the traditional miscues.

#### Data Analysis:

The researchers cyclically moved back and forth between the data and the analysis (Agar, 1996). Retelling and the RMA sessions were transcribed "to get hands dirty with the data." The researchers used lamination method by analyzing the patterns in the video and confirmed them with the explanations the participant gave during the RMA sessions. The participant produced similar traditional miscues, as suggested by Goodman et al. (2005), in the two sessions of reading aloud of two passages he was given. Mikulec (2015) suggested that miscues are a reflection of what the reader predicts the author of the text is trying to communicate, and it is through this reflection that the interaction between the reader and text takes place. He produced 33 miscues out of 1,269 words (2.6%) and 27 miscues out of 966 words (2.8%) for the first and second passages respectively. Besides traditional miscues, he produced peculiar miscues based on interlanguage differences (Wallace, 1989) and regressions within a word based on his attempts to use the bottom-up approach to pronounce complex and unfamiliar words to him. However, there was a difference in the pattern of the peculiar miscues that he produced in the first and second reading sessions.

Table 1 gives the number of miscues in each reading

Text	Smith (2006)	Goodman, Fries, & Strauss, (2016)
Total Words	1, 269	966
Substitutions	3	6
Omissions	2	1
Repetitions	4	2
Corrections	2	3
Insertions	2	1
Phonetic Changes	20	8
Tense Changes	0	6
Total Miscues	33	27
Percentage of miscues	2.60%	2.80%

### Traditional Miscues

#### Substitutions

The participant produced low quality substitution miscues that changed the meaning of the text and he did not self-correct them, for instance, he substituted *said* with *sad*, *precedes* with *precise* and *expulsion* with *explosion*. This might be due to inter-language similarities in pronunciation of words, and it might have sounded to him like he had produced the words correctly. He did not identify these as miscues on the copy of the text that he had remained with him. However, when the researcher stopped the recording during RMA, he identified the miscues and said that he had produced the unexpected response.

#### Omissions

The two omissions that the participant produced did not syntactically and semantically affect the meaning of the text because they were citations of the author within the text, for instance, he omitted (Thorndike, 1931) on page 140 in the passage from Goodman, Fries, & Strauss (2016). He said that he usually omits reading the author and year quoted within the sentence whenever he is reading silently any text either in English or Mandarin Chinese. The other omission, he produced was not reading the subtitle within the passage, and during the RMA session he said that, "I don't know why but I maybe in that situation I think I don't need to read the subtitle so I just jump to the second paragraph." This was one of his practices whenever he is reading to omit the subtitle and proceeded to the next paragraph.

#### Corrections

Many of the corrections he made were on the false attempts of reading a word by attempting to use the bottom-up approach during the reading process. In bottom-up approach, the reader reads the passage the word by word to construct meaning while in up-bottom approach the reader reads the passage through meaning-making (Goodman, 1996; Goodman, Fries, & Strauss, 2016; Smith, 2006). He was attempting to read words through syllable by syllable pronunciation whenever he approached longer words or words unfamiliar to him. As a result, he made some hesitations within the word and then went back to read it without hesitations. His first language had an effect on the pronunciation of two syllables because in Mandarin Chinese there are no two syllable word formations of the Chinese characters. Thus, understandably, he may have had difficulty knowing the appropriate placement of stress for the English words.

## Repetitions

The repetitions that the participant produced were mainly on simpler and frequently used words in English which are so familiar to him. These repetitions occurred where there was difficulty in lexical and syntactic understanding of the subsequent word or sentence. This is an indication that his eyes and brain were preparing to read the subsequent word in the text and not on the word on which he produced the miscue. During RMA, he said that he made the repetitions because “I was not sure of the next word in the sentence.” For instance, in the opening subtitle of the first passage, he produced a repetition on *and* in the phrase *Information and Uncertainty*. He produced repetitions on *and* as he was preparing himself to read *uncertainty*. He explained that he was trying to figure out how he was going to pronounce *uncertainty* and he was not so sure of where to place the stresses within the word. Repetition was a preparatory time for him to decode the subsequent word in the text which was usually complex and unfamiliar or which he was not sure of the pronunciation.

## Insertions

Although he never made any correction on any of the few insertion miscues he had produced, it was possibly an indication that he was predicting what the text was going to be about based on his background knowledge about language. Predicting is a skill that may be challenging for readers in the second language (Mikulec, 2015). He was choosing words that would make sense as he was reading, so he made correction on ones that did not make sense. This was a demonstration that he was using his background knowledge of the use of language.

## New Miscues

The participant made two types of miscues which could not be accounted for in the traditional miscue analysis system. These miscues were influenced by the first language (interlanguage miscues) and requires the bottom-up approach to construct meaning of the text.

## Plural Miscues

In Mandarin Chinese, there are no plurals and past tenses for some words. For instance in English we say or write “two cups” but in Mandarin Chinese the acceptable language is “two cup” because two is already an indication of pluralism. This background knowledge affected his reading aloud of certain plural words such as “books,” “forms,” “senses” and “makes” which he read as “book,” “form,” “sense” and “make.” They all changed the semantic and syntactic meaning of the texts, for instance, “The books said a lot about how our brains are able to transcend the limits of our senses and about...” was read as “The book said a lot about how our brains are able to transcend the limits of our sense and about...” This suggests that while he was predicting using the graphophonic language cueing systems in English, he was relying on the semantic and syntactic cueing systems of Mandarin Chinese. This caused a mismatch between his comprehension and what the researcher was hearing. The participant had comprehended those words as plural and thus he could not make any corrections. However, he identified these miscues on his copies of the text and discussed the reason with the researcher.

## The *ed* Morphemes

The other interlanguage miscues the participant produced were on *ed* morphemes such as *succeeded* and *learned* which he read in the present tense. These changed the semantic and syntactic meaning of the texts, for instance, “If we have *succeeded*, you now see reading as making sense of print which is a natural extension of making sense of speech.” He read this sentence as “If we have *succeed*, you now see reading as making sense of print which is a natural extension of making sense of speech.” He omitted the *ed* morpheme which changes the word into the past tense. This omission of the *ed* morpheme is an interlanguage miscue which is influenced by the effect of the first language on the second language acquisition. Wallace (1989) argued that interlanguage miscues are not just a window on the reading process but also on the language acquisition process, and that they revealed the learner’s language and reading competence. The form of the verb does not change in Mandarin Chinese to indicate its past, present or future tense but rather time is indicated by adverbs telling when the action happened. Thus “I went to town yesterday” would be “I go to town yesterday.” His first language had a greater bearing on the production of these two types of interlanguage miscues.

The participant produced miscues on many complex words because he was trying to read the words phonetically by trying to sound out the word by syllables. As a result, he made hesitations within the word on either clapping or tapping syllables. For instance, he produced regressions within a word such as elimination which he read as “elimi-elimination”. The pattern was more noticeable on words that changed form (eliminate to elimination) which he did not know how to pronounce. During the RMA, he revealed that sometimes he was not sure of the pronunciation of such words but that he clearly knew the meaning of them. He said, “I’m not sure of the pronunciation but I know the word.” For instance, he could not pronounce “intrinsic” and “variation” though their meaning was clear to him. This type of miscue was produced because he was using bottom-up approach to sound out the words.

### **Discussion**

After RMA sessions, students are able to reflect on their reading processes in an attempt to become proficient readers and also to improve their comprehension of the text. Born and Curtis (2013) suggested that as students continued to reflect upon their reading practice, they learned where they commonly made miscues, how to identify the impact of miscues on their comprehension, and how to correct miscues that impede comprehension. After identifying and discussing the types of miscues which were a result of the first language’s influence on the reading of the second language, the participant narrated that he would have to be paying attention to his reading in the second language of the words whose word formation are different from the Mandarin Chinese characters like plural and irregular words. Language is learned by using it through speaking, reading and writing. The participant narrated that he may need to have more conversations with his peers in English in order for him to practice some of the words that he had difficulties in pronouncing, while still knowing the meaning.

The major purpose of RMA is to help students revalue reading as a process of constructing meaning and revalue themselves as capable readers who have knowledge about the world, their use of language, and about how text works (Goodman, 2003; Goodman et al., 2014). Although revaluing is a process that takes time (Goodman, Martens, & Flurkey, 2016), the participant was very happy to have participated in the RMA even though there was no percentage reduction in the number of miscues produced between the first and second passages. However, he was mindful of listening to himself, as well as making sure that the sentences he was reading were making sense in his hearing and not just in his mind. By actively participating in this project through identifying the miscues and discussing the possible reasons for their production, the participant gained a better sense of the steps he needed to take to become a proficient reader in his second language. Mikulec (2015) posits that RMA is useful in identifying strategies used by the reader to overcome difficulties while reading because the student is actively involved in the learning process.

The RMA process helps readers become aware that they are better readers than they think they are. After revaluing themselves they become confident and willing to take risks by reading texts that they had previously considered to be higher than their reading levels (Goodman, 1996). During the interview, the participant reaffirmed that he was a proficient reader in his second language and that his comprehension was very good as exemplified by the fact that he is able to understand the course materials when he is studying. He stated that he does not make miscues when he is reading silently because he knows the meaning of most words and for those which he did not know the meaning, he always looks up the meaning on the internet or in the dictionary. He explained that the most difficult thing for him in the reading process is that, “I need to transform from my formal knowledge, background and language to the new field and new language.”

### **Limitations of the Study:**

Revalue takes a lot of time. Both the researcher and the participant require considerable time investment and it takes an even longer time for the reader to effectively revalue himself. The value would have been positively demonstrated had there been a significant reduction in the number of miscues produced by the reader with an increase in the number of high quality miscues. The researcher would have had a better understanding of Mandarin Chinese if he knew the language and how to read it, and would have been confirming the interview data with that knowledge.

### **Clinical Implications.**

Since the world has become a global village, it has also become a multilinguistic society with many parents looking to teachers and clinicians regarding how to best work with their children on language and literacy outcomes (Damico, Damico, Nelson, Weill, & Maxwell, 2017). The teachers and clinicians may not know how to speak all or any of the languages of their bilingual clients but they should have an insight into the language as they are trying to understand the reading strategies of their clients. Bilingual families should be asked to explain to the experts any difference in the language structure of their first and second languages so that there is mutual understanding for effective practical language interventions.

### **Future Studies**

Possible future studies might look at miscue analysis in multilingual families. This could provide a comparative analysis of miscues that are frequently associated with bilingual speakers and those that might be prevalent among multilingual speakers. Further, such a study might provide insights into reading strategies used by both sets of speakers.

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## Appendix

### Burke Reading Interview

(Modified from Burke Reading Interview by C. Burke, 1987, cited in Y. Goodman et al., 2005)

Name \_\_\_\_\_ Age \_\_\_\_\_ Date \_\_\_\_\_

School \_\_\_\_\_ Level \_\_\_\_\_

Gender \_\_\_\_\_ Interviewer \_\_\_\_\_

1. What do you read routinely for pleasure? How frequently?
2. What is the most memorable thing you've ever read?
3. How do you feel about reading? What is reading?
4. How long have you learned English? How do you feel about reading in English?  
What do you read for fun in English? How frequently?
5. How do you choose books, articles, journals, magazines, or other reading materials?  
What's your favorite book/article/author ...?
6. What is the most difficult thing you have to read?
7. When you are reading and you come to something you don't know, what do you do?  
Do you ever do anything else? (Tell me more. Give me an example)
8. Who is a good reader that you know? What makes him or her a good reader?
9. Do you think he or she ever comes to something that she or he doesn't know when he or she is reading?
10. If the answer is yes: When he or she does come to something unknown, what do you think he or she does about it?
11. If you knew that someone was having difficulty reading, how would you help that person?
12. How did you learn to read? What did they/you do to help you learn?
13. Who is a teacher who has made a difference for you? How did he or she help you?

14. What would you like to do better as a reader?
15. How do you like to read on a computer / iPod / e-reader / smartphone?
16. Do you think that you are a good reader? Use scale 1 (poor) to 10 (advanced).  
How do you know?
17. Anything else you'd like to tell me about yourself?