The CATESOL Journal

BONNIE ALCO
University of Scranton, Pennsylvania

An L2 Reader's Word-Recognition Strategies: Transferred or Developed

Transfer of reading strategies from the first language (L1) to the second language (L2) has long puzzled educators, but what happens if the L1 is an alphabet language and the second is not, or if there is a mismatch in the languages' grapheme-phoneme connection? Although some students readily adjust to reading and writing in their second language, others do not. Research has shown that orthographic depth may play a role in how readily a student can transfer reading strategies from his or her L1 (e.g., Akamatsu, 2003; Muljani, Koda, & Moates, 1998; Seymour, Aro, & Erskine, 2003). If readers typically depend on their language's grapheme-phoneme connection or on visual cues in a nonalphabet language to develop word-recognition strategies, ESL students may become frustrated when the graphics or orthographic depth of the second language does not match that of the first and the process, thereby, crosses the "threshold" of orthographic complexity (Seymour et al., 2003). An unreliable connection challenges the student to adjust strategies appropriately in order to develop an automaticity that furthers reading competence. If the task is too difficult, cognitive load may inhibit the process.

Introduction

A few years ago, I noticed that one of my students from Taiwan misspelled the word "the" as "h-t-e." Since it was written and not spoken, it could not be a case of phonological metathesis as commonly occurs in "ask" to "aks," an alteration that follows phonological predictability. Instead, this appeared to be a case of visual processing due to an influence from his L1 nonalphabetic language. I wondered how efficient this student's L2 word-recognition skills could be if his visual processing to recognize words were unreliable. My immediate response was to prescribe a regimen of extensive reading to address word-recognition strategies, but I was not sure how to determine the true nature of the problem nor how to address the problem.

The L2 Reader's Challenges

Second language students come equipped with reading strategies from their first language, but since reading knowledge in one's first language con-

tributes only partially to a reading ability in the second (Bernhardt & Kamil, 1995), they need to adapt to the new system and develop appropriate strategies to read efficiently in the new language. Languages differ from one another in their manner of characterizing a symbol/referent system of coding ideas in text. Languages can have a clear orthographic-phonological connection or not. They can use an alphabet or not. The questions, therefore, are how reading strategies differ from one language to another and how readers adapt strategies for word recognition in a language that differs orthographically from their own.

Orthographic Depth

English has definite rules of orthographic conventions that allow certain combinations of letters and not others, but letter combinations and resulting sounds are not consistent. Such consistency in grapheme-phoneme correspondence, called orthographic depth (Nassaji, 2003), differs across languages. Spanish, for example, is an example of a language with shallow depth and thereby displays a closer relationship between graphic configuration and meaning construction (Salazar Garcia, 2001), whereas English can be classified as a deep orthographic language because of its many inconsistencies and complexities. Seymour, Aro, and Erskine (2003) demonstrated that English-speaking children's development in strategy building and mastery of the basic foundations of reading can lag significantly behind that of young readers beginning to read in shallow-depth languages, such as Spanish, Italian, and Greek, and attributed the discrepancy to the relative orthographic depth of the individual language.

When beginning to read, English speakers learn grapheme-phoneme correspondences as do Spanish speakers, but they continually need to realign their strategies to adjust to irregular letter and word patterns. These irregularities make very familiar, everyday words, such as "house," "father," and "was," difficult to decode, resulting in greater demands on cognitive resources and slower processing (Seymour et al., 2003). When words do not readily follow a predictable grapheme-phoneme pattern and cross the "threshold" of orthographic complexity, efficiency of processing is compromised (Seymour et al., 2003), and word recognition becomes a more complex process. This can result in a delay in acquiring the foundation in literacy in one's first language as well as an inability to adapt strategies connected to lower-level skills in one's second language.

Alphabet and Nonalphabet Languages

Another defining factor of a language is its use of either an alphabetic or a logographic system. The distinction determines the unit of linguistic representation in the written system, that is, the phoneme in alphabets as in English, and the morpheme in a logographic language such as Chinese (Koda, 1999). Similarity of alphabetic letter and word patterns can affect ease of transfer from L1 to L2 and of word-recognition strategies in the L2 (Muljani, Koda, & Moates, 1998). Readers whose first language is nonalphabetic, however, may have difficulty relying on phonological cues in word recognition since they are not used to pronouncing words for recognition in their L1 and, instead, would more likely depend on visual cues for strategy building as in their L1 (Aka-

matsu, 2003). Typically, readers from an alphabetic language rely first on letter sequences and then progress to the whole word as a strategy in word recognition, but readers from a nonalphabetic background tend to overlook intraword information and instead depend on visual strategies that focus attention on the whole word and word-shape information (Akamatsu, 2003). Consequently, when beginning to read English, visual processors find phonological cues awkward in the phoneme-grapheme reference system. Conversely, in the direction of English L1 to Chinese L2, the learner will likely find it difficult to adapt a visual word-recognition strategy in place of a phoneme-grapheme connection that she is accustomed to and will attempt instead to rely on the pronunciation of words represented by the characters as a strategy to access the meaning (Yang, 2000).

Visual discrimination strategies apparently outweigh phonological cues for Chinese L1 students. When beginning to read in English, students from a logographic L1 do better in determining the orthographic acceptability of a word when faced with high-frequency words and visually familiar letter-strings rather than lower-frequency words that follow predictable patterns (Koda, 1999; Muljani et al., 1998), suggesting that visual familiarity is more important for these ESL learners than is the structural feasibility of a word. It follows, therefore, that focusing on lexical and syntactic components is not sufficient for the developing L2 reader. These students would also benefit from repeated exposure to text in order to develop familiarity with the language at the bottom-up level. Such instructional intervention can help students adapt to the alphabet language and can possibly help to prevent residual or persistent effects of L1 influence on strategy building in the L2 (Wang, Koda, & Perfetti, 2003).

Bottom-Up Strategy Building

Developing bottom-up processing strategies plays an important role for ESL students from both alphabet and nonalphabet languages in their goal of becoming advanced, successful readers in English since success in lower-level processing leads to success in higher-level processing, and limited lower-level skills can actually delay higher-level processing and slow the reading pace (Nassaji, 2003). Efficient lower-level processing may actually help to make syntactic and semantic information available, and conversely, poor lower-level identification strategies can impede syntactic and semantic processing and subsequently slow the integration process (Nassaji, 2003).

An essential bottom-up skill for fluent reading in an L1 or L2 is automatic word recognition. Such automaticity contributes to a reader's ability to process text with ease by facilitating lexical access, that is, the act of drawing out stored information of the word and thereby providing some relief from the cognitive demands necessary for a full comprehension of text (Day & Bamford, 1998). Unfortunately, L2 students often approach difficult text with a bilingual dictionary at their sides and laboriously attend to unknown words individually to process the orthographic-semantic/syntactic connections. Comprehension is compromised because without an automatic procedure, they need to store each piece of information in working memory and hold it there long enough to con-

struct meaning (Day & Bamford, 1998). The distraction interrupts the flow of reading and takes attention away from the higher-level processing that engages cognitive reasoning and results in the ability to construct meaning (Day & Bamford, 1998). Any frustrated L2 reader knows that deducing meaning from insufficient information is cognitively demanding and tiring.

Instructional Intervention

Repeated exposure to words and text can help L2 students learn words so well that they are automatically recognized whenever encountered. Rapidly recognizing function words would allow the reader more time to focus on content words (Leung, 2002), and developing an automatic process of accessing meaning by way of linguistic cues can help the reader reduce the high-energy demands of word-by-word translation (Tomlinson, 2000). Repeated reading that encourages quick, automatic word recognition can result in a restructuring of cognitive processing that specifically deals with word recognition (Segalowitz, Segalowitz, & Wood, 1998) and can contribute to more efficient reading strategies since "aspects of L2 processing competence that are central to analyzing and manipulating L2-specific linguistic features seemingly mature through cumulative processing experience in the TL" (Koda, 1999, p. 61).

Activities for Building Effective Bottom-Up Skills in Word Recognition

The development of bottom-up skills and automaticity is essential for L2 readers. I suggest that teachers reinforce rapid recognition of function words and bound morphemes so that students can more efficiently attend to lexical information without being distracted by function words. I found the following activities effective in guiding students of all ages and at any proficiency level to a quick recognition of function words. These activities can be used at the beginning, in the middle, or at the end of a reading activity. They should be enjoyable activities that can ease students into reading by familiarizing them with function words and their usage—a familiar frame that encases the lexical pieces.

1. Scanning Exercises

Function words. For this activity, the teacher draws students' attention to a particular paragraph or section of a text that they are reading. In a span of 1 minute, students are to find a word that the teacher writes on the board and count how many times it occurs in the text. For example, in the following text, taken from *A First Look at the USA: A Cultural Reader* (Broukal, 1997), students look for the preposition *of:*

> The famous Tomb <u>of</u> the Unknown Soldier is in Arlington National Cemetery. It has the bodies <u>of</u> three United States soldiers. No one knows who they are. This tomb is for all the U.S. soldiers who die in wars. There is a guard in front <u>of</u> the tomb. He walks up and down in front <u>of</u> the tomb 42 times each hour. Every hour during the day, a new guard comes. At night, a new guard comes every two hours. Thousands <u>of</u> people come to see the "changing <u>of</u> the guard." (p. 57)

Once students have counted the number of times *of* appears in the paragraph, the teacher can ask students to find the noun preceding and the noun following *of* in order to establish a pattern of usage. Students would then reread the paragraph.

Morphemes. This model can be used for quick recognition of past-tense verb endings. In the following paragraph from *The Black Cat* (*Very Easy Readers* series, 2007), students are asked to find all the times that *–ed* occurs at the end of verbs:

> I was a very quiet boy. I liked reading and writing. My school friends often laughed at me because I was clever. My parents said I was helpful. I loved animals and my dog adored me. I often took it for a walk in the park and fed the ducks. I visited my grandparents every Saturday, and I helped them in the house and garden. I went to church every Sunday. (p. 2)

Since this is not a grammar exercise, the focus is on regularly formed past tense, not irregular verbs. Students count the number of times *-ed* appears in the passage as an indicator of past time. They then reread the paragraph and raise their hands every time they encounter an *–ed* ending of a verb. Finally, they read the paragraph for content.

2. Cloze Exercises

Cloze exercises encourage students to "notice" particular function words. The words then become familiar and easier to process when reading. The teacher asks students to read a passage for meaning. They then read the same passage with one particular word missing. They have to guess what the missing word is and fill in the blanks. They then reread the passage with the word added to see if the passage makes sense. The following passage is missing the word *of:*

> The famous Tomb ___ the Unknown Soldier is in Arlington National Cemetery. It has the bodies ___ three United States soldiers. No one knows who they are. This tomb is for all the U.S. soldiers who die in wars. There is a guard in front ___ the tomb. He walks up and down in front ___ the tomb 42 times each hour. Every hour during the day, a new guard comes. At night, a new guard comes every two hours. Thousands ___ people come to see the "changing ___ the guard." (p. 57)

3. "Quick-Locate Read Alouds"

A "quick-locate read aloud" can be done in small groups of three or four (students A, B, C, and D) with all students reading the same text. The teacher assigns each student a particular morpheme, which appears repeatedly in the text. The morphemes can include, for example, verb endings *–ed* and *–ing* or the adjective superlative ending *–est*. The teacher asks one student (A) to read the text aloud. In her copy of the text, the words with the assigned endings are underlined. When student A comes to a word with an underlined morpheme, she pauses, and the student with that particular assigned morpheme must sup-

ply the missing word appropriately. Following is a sample text from *Rain Man* (from the *Penguin Reader* series, Fleischer, 1989, p. 4) for which student B is assigned verb ending *-ing,* student C is assigned verb ending *-ed,* and student D is assigned adjective ending *-est:*

> Charlie Babbitt walked away from his father's funeral without looking back. Getting into the car beside Susanna, he said, "We're going to stay in Cincinnati another night, OK? There's something I have to do before we go." Charlie started the car.
>
> "Where are we going now?" Susanna asked.
> "East Walnut Hills."
> Walnut Hills is the richest part of Cincinnati. All the houses are big and very expensive.
>
> Charlie parked the car in front of one of the largest, most expensive houses in Walnut Hills—Sanford Babbitt's house. "This is my father's place," he said.
>
> Susanna got out of the car. "Is this where you lived when you were a boy?" she asked, her eyes wide, full of questions.
>
> "Yeah, but I left when I was sixteen," Charlie said. He picked up the suitcases and carried them towards the house.

4. Word Walls

A teacher-strategy text by Spencer and Guillaume, *35 Strategies for Developing Content Area Vocabulary* (2009), includes "Word Walls" (pp. 81-84) as a way to encourage quick recognition of words or morphemes. The "inactive words" category could nicely reinforce function words with repeated "visual reminders" of their usage. Word Walls visually display words that the teacher hopes her students will learn. New content words are the main focus. However, she can also reinforce function words or bound morphemes that the students have already acquired. The teacher can attach magnets to the back of the function words or morphemes so that they can be manipulated regularly with each new usage.

Spencer and Guillaume suggest several Word Wall activities, such as those that encourage students to compare and contrast vocabulary listed on the wall. A variation of this activity is for students to combine a function word, such as the preposition *behind,* with two appropriate content words also listed on the wall, such as *tree* and *house*. The modifications activity (p. 83), in which students color code words by semantic properties, can be extended to include function words coded separately from content words, a way to visually reinforce their regular occurrence in sentences.

5. Recognizing Blends and Digraphs

Peregoy and Boyle (2008) suggest a game for students having trouble recognizing blends and digraphs. They presented a student with a series of cards listing blends (two letters combining sounds), such as *bl, fl*, and *cl*, and asked her to match them with other parts of words, such as *ue, own,* and *am*. Using the cards

as manipulatives enabled the student to produce familiar words with blends and readily recognize them in action. They then introduced digraphs (two letters representing one sound), such as *th* and *sh*, and asked her to combine them with other parts of words, such as *em* and *op*. After her continued practice with the word combinations, Peregoy and Boyle found a marked improvement in the student's ability to read a passage in which blends and digraphs had previously given her trouble.

Activities to Enhance Phoneme-to-Grapheme Correspondences

If students come from a first language with a different alphabet, they might benefit from activities that draw attention to phoneme-grapheme correspondences. The following suggestions may provide opportunities for repetitive exposure of sound-symbol relationships.

Manipulatives. The use of tiles or cards can help students practice phoneme-to-grapheme correspondences. A sample activity would be to present each student or a cooperative pair of students with a pile of tiles, each tile marked with a consonant, vowel, or blend. The teacher reads a sentence, such as "The boy sat on the mat," while displaying a picture of the event. She emphasizes the high-frequency word mat, a word with a consistent phoneme-grapheme correspondence, and the students spell the word mat with their tiles. The teacher continues with more sentences with high-frequency words with a consistent phoneme-grapheme correspondence, then intermittently, adds sentences that include a high-frequency word with an irregular phoneme-grapheme correspondence, such as light in "Mark looked at the light" with students required to spell the word light.

The sentence and accompanying picture provide context to reduce semantic confusion, so students can focus on the spelling. When students have manipulated the tiles/cards appropriately to accurately spell the emphasized word, they raise their hands and provide the spelling. The teacher writes the correctly spelled word on the board for others to correct.

Charts. The teacher provides students with a two-column chart of words and tokens as for a bingo game. On the chart are pairs of words that are similar in spelling but different in sound. The teacher writes a sentence on the board or overhead with a blank in place of one of the two word choices. Students listen to the sentence and identify the missing word from the corresponding pair of words on the chart. They cover the word they have heard with a token. Once the teacher reads three sentences, she asks a student to read back the sentences with the missing word and the correct spelling. Sample words and sentences:

1.	We are going to bake a cake.	bake—back
2.	Do you hear the bell?	hear—hair
3.	The mat was black.	bleak—black
4.	Who just walked through the door?	through—though
5.	He didn't sleep well last night.	slip—sleep
4.	The bird's beak was white.	beak—bleak
7.	We have been watching the plant grow.	go—grow
8.	Did she throw the ball far?	throw—through

For both sets of activities presented, teachers will need to consider students' comprehension level to make the tasks manageable and interesting so that the L2 readers can enjoy the experience. The main purpose of the activities is to provide students with added exposure to text with troublesome spellings and high-frequency words and the opportunity to reduce recognition time at each encounter.

Conclusion

Languages differ one from another, and accommodating the differences is essential for successful reading in a second language. Reading in another language is indeed multifaceted, with each facet contributing to the whole and each facet needing attention. Developing automaticity in word recognition is a bottom-up skill that underlies the process. Text familiarity, promoted by repeated exposure, can help to facilitate word recognition and thereby reduce the cognitive burden of processing.

Teachers need to keep in mind that development of bottom-up word-recognition strategies is equally as necessary as sharpening the higher-level semantic-syntactic skills. Bottom-up strategies, in fact, are the basic issues that confront the beginning reader and may also continue to plague the advanced reader. How an L2 reader handles the lower-level strategies can affect ultimate success in reading.

Although second language learners may have already accumulated an array of skills and strategies in their first language, the task at hand is the ability to transfer or readjust these strategies to accommodate reading in the second language, since the second language may pose alphabetic or orthographic challenges different from those encountered in the first. Basic word recognition may require a whole new set of strategies or at least a realignment of those transferred from the L1. Lacking the appropriate strategies can result in cognitive overload and undue frustration. An L2 reader will not likely succeed if she continually processes every word individually. Function words and grammatical morphemes need to be processed without consuming the attention needed for lexical items. Without such automaticity, efficiency will be forever compromised.

Author

Bonnie Alco, PhD in Applied Linguistics, is an assistant professor of Education at the University of Scranton in Scranton, Pennsylvania, where she teaches courses in Linguistics and ESL teacher training. She has also had 15 years of ESL teaching experience at middle-school and college levels.

References

Akamatsu, N. (2003). The effects of first language orthographic features on second language reading in text. *Language Learning, 53*(2), 207-231.

Bernhardt, E., & Kamil, M. (1995). Interpreting relationships between L1 and l2 reading: Consolidating the linguistic threshold and the linguistic interdependence hypothesis. *Applied Linguistics, 16*(1), 15-34.

Broukal, M. (1997). *A first look at the USA: A cultural reader.* White Plains, NY: Addison Wesley Longman.

Day, R. R., & Bamford, J. (1998). *Extensive reading in the second language classroom.* Cambridge, England: Cambridge University Press.

Fleischer, Leonore. (1989). *Rain man.* From A. Hopkins & J. Potter (Eds.), Penguin Reader series. London: Pearson Education Limited.

Koda, K. (1999). Development of L2 intraword orthographic sensitivity and decoding skills. *The Modern Language Journal, 83*(1), 51-64.

Leung, C. Y. (2002, April). Extensive reading and language learning: A diary study of a beginning learner of Japanese. *Reading in a Foreign Language*, *14*(1). Retrieved December 14, 2009, from http://nflrc.hawaii.edu/rfl/april2002/leung/leung.html

Muljani, D., Koda, K., & Moates, D. R. (1998). The development of word recognition in a second language. *Applied Psycholinguistics, 19*(1), 99-113.

Nassiji, H. (2003). Higher-level and lower-level text processing skills in advanced ESL reading comprehension. *Modern Language Journal, 87*(2), 261-276.

Peregoy, S. F., & Boyle O. F. (2008). *Reading, writing, and learning in ESL: A resource book for teaching K-12 English learners.* Boston: Pearson.

Poe, E. A. (Adapted by B. Chatwin) (2007). *The black cat.* From Very Easy Readers. Italy: La Spiga Languages.

Salazar Garcia, V. (2001). Reading ability and inserted unit recognition in Spanish as a first language and Spanish as a second language. *Estudios de Linguistica, 2001*(Suppl. 1), 153-176.

Segalowitz, S. J., Segalowitz, N. S., & Wood, A. G. (1998). Assessing the development of automaticity in second language word recognition. *Applied Psycholinguistics, (19)*1, 53-67.

Seymour, P. H. K., Aro, M., & Erskine, J. M. (2003). Foundation literacy acquisition in European orthographies. *British Journal of Psychology, 94,* 143-174.

Spencer, B. H., & Guillaume, A. M. (2009). *35 strategies for developing content area vocabulary.* Boston: Allyn & Bacon/Pearson.

Tomlinson, B. (2000). Beginning to read forever: A position paper. *Reading in a Foreign Language, 13*(1), 523-538.

Wang, M., Koda, K., & Perfetti, C. (2003). Alphabetic and nonalphabetic L1 effects in English word identification: A comparison of Korean and Chinese English L2 learners. *Cognition, 87,* 129-149.

Yang, J. (2000). Orthographic effect on word recognition by learners of Chinese as a foreign language. *Journal of the Chinese Language Teachers Association, 35*(2), 1-18.