Second Language Writing System Word Recognition
(with a focus on Lao)

Christine Elliott
University of Wisconsin-Madison

Abstract
Learning a second language (L2) with a script different from the learner’s first language (L1) presents unique challenges for both student and teacher. This paper looks at current theory and research examining issues of second language writing system (L2WS) acquisition, particularly issues pertaining to decoding and word recognition by adult learners. I argue that the importance of word recognition and decoding in fluent L1 and L2 reading has been overshadowed for several decades by a focus on research looking at top-down reading processes. Although top-down reading processes and strategies are clearly components of successful L2 reading, I argue that more attention needs to be given to bottom-up processing skills, particularly for beginning learners of an L2 that uses a script that is different from their L1. I use the example of learning Lao as a second language writing system where possible and suggest preliminary pedagogical implications.

Introduction
Second language writing systems have increasingly become the focus of a growing body of research drawing on the fields of psychology, education, linguistics, and second language acquisition, among others. The term writing system is used to refer to the ways in which written symbols represent language in a systematic way (Cook and Bassetti, 2005). Further, a writing system can be discussed in terms of both its script and its orthography. Cook and Bassetti define script as the physical implementation of a writing system (i.e. the written symbols) and orthography as “the rules for using a script in a

1 Following Koda (2005), I define word recognition as “the process of extracting lexical information from graphic displays of words,” and decoding as the specific process of extracting phonological information.
particular language” (p. 4). English and Spanish orthography, for example, are both instantiated through the same script (with certain minimal variation), the Roman alphabet. On the other hand, modern Lao and Thai orthographies are distinctly different and use different though related scripts, even though they are closely related members of the same language family.

Both aspects of writing systems have implications for second language learning. Students must learn the actual “graphic form of the units of writing” (script) (Coulmas, 2003 cited in Cook and Bassetti, 2005, p. 3) as well as orthographic elements of reading such as grapheme-phoneme correspondences, direction, punctuation, etc. This paper looks particularly at decoding and word recognition issues related to learning L2 scripts and symbol-sound correspondences, with the goal of exploring how L1 and L2 writing system differences affect learning to read a second language. Further, where possible discussion is included focusing particularly on issues related to learning the Lao writing system as an L2WS.

Introduction to Lao

Lao is a member of the Tai-Kadai language family which includes the national languages of both the Lao People’s Democratic Republic2 (Lao) and Thailand (Thai) and a number of varieties of both languages. Tai speakers, in fact, are found in all countries comprising modern-day mainland Southeast Asia, though centered in the region comprising Thailand and Laos. Although Tai-Kadai languages predominate in both these countries, Laos and Thailand contain particular language diversity, especially for their size and population. The population of Laos is currently estimated at 6.8 million (The World Factbook, 2009), however, estimates put the number of speakers of Lao as a first language at around only 50% of the population (Enfield, 2006).

The Lao constitution officially establishes the Lao language and the Lao script as the official language and writing system of the Lao People’s Democratic Republic. However, Lao as a national language has yet to be codified. There are, in fact, several distinct varie-

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2 Throughout the remainder of this paper, I will sometimes refer to the Lao People’s Democratic Republic simply as “Laos.”
ties of Lao spoken throughout the country (commonly classified as Northern, Central, and Southern) which differ in pronunciation, vocabulary, and to some degree grammar. The Vientiane dialect (Central region) is perhaps closest to a “standard” version of spoken Lao, yet what constitutes “Vientiane Lao” is not clearly defined and is, as described by Enfield (2007), a “shifting” target due to a variety of social and political factors (p. 20). Lao is also spoken by at least 12 to 15 million people in Northeast Thailand (Brown, 2006, p. 697) as well as in the Lao diaspora, predominantly in France, the United States, and Australia. As much as 10% of the population of Laos fled following the foundation of the Lao People’s Democratic Republic in 1975 (Evans, 2002).

As closely related members of the Tai-Kadai language family, Lao and Thai have similar lexicons and grammatical structure. As described by Enfield (1999), “Lao and Thai share extensive vocabulary…have very similar phonological and grammatical systems…and for all intents and purposes (i.e. in descriptive/structural linguistic terms) are dialects of a single ‘language’” (p. 259). However, because of what Enfield describes as “one-directional flow of cultural exposure” (Enfield, 2007, p. 17) (e.g. some Lao regularly watch Thai TV, listen to Thai music, etc.) Central Thai is well understood by many Lao, but Lao is not necessarily understood easily by speakers of Thai as a first language. Finally, Lao and Thai are both tonal languages utilizing contour tone phonemically, Standard Thai described as having five tones, and Lao most often described as having six tones (Yates and Sayasithsena, 1970; Kerr, 1972)4 5.

Writing Systems

The world’s known writing systems can be classified into two main types: sound-based and meaning based. In sound-based systems such as alphabets, graphemes, the minimal units represented in a

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3 Central Thai is considered the standard variety of Thai and is currently much more codified than Lao.
4 See Enfield (2007) and Osatanada (1997) for discussion of tone in Vientiane Lao described as having five tones
5 Additional works describing Lao as having six tones: Roffe (1946) (Luang Prabang Lao); Compton (1979) (Southern Lao); Hoonchamlong (1984) (Pakse Lao).
writing system, correspond to sounds, whereas in meaning-based systems, graphemes correspond with meaning. In fact the same morpheme (e.g. a Chinese character) can occur in different languages (e.g. Mandarin, Cantonese, Japanese kanji) with the same meaning but different pronunciations. The Chinese writing system is the most well-known example of a meaning-based “morphemic” script (sometimes referred to as a logographic or ideographic script). Much current L2WS research examines L2 learners whose L1 is meaning-based and whose L2 is sound-based or vice-versa. (Koda, 1990, 2005; Chikamatsu, 1996, 2006)

According to Cook and Bassetti (2005) there are three main types of sound-based writing systems: alphabetic, consonantal, and syllabic. In syllabic writing systems such as Japanese kana, each grapheme corresponds to a syllable of the spoken language. Cook and Bassetti describe Arabic and Hebrew scripts as examples of consonantal writing systems where vowels are not usually represented. And finally, an alphabetic writing system such as is used for English represents all the phonemes of the spoken language. Cook and Bassetti, however, do not discuss in any detail Indic derived scripts (such as Lao) which are most often described as containing properties of both a syllabary and an alphabet – therefore referred to as either an alphasyllabary or alternately an abugida⁶.

Southeast Asian language families and Indic Writing Systems

Although the Southeast Asian languages of Lao, Thai, Khmer, and Burmese belong to three different language families (Tai-Kadai, Mon-Khmer, and Tibeto-Burman respectively) they share similarities among their scripts which were probably all derived over time from the Indic Devanagari script (originally used to write Sanskrit) (Hartmann, 1986). According to Saloman (1996a, 1996b) the national writing systems of modern Burma, Thailand, Laos, and Cambodia (as well as of other languages found in mainland Southeast

⁶ Although there is not consensus in the literature as to the classification of languages as abugidas versus alphasyllabaries, many of the world’s languages, especially those originating in South Asia fall into this additional category (See Swank 2008 for a discussion of the terms abugida and alphasyllabary and the potential relationship between how classification systems are defined and practical implications such as issues of pedagogy).
Asia such as Cham, Shan, and Tham) are, more specifically, derivatives of Brahmi, a writing system originating in approximately the mid-3rd century B.C.E. Brahmi was also the source script for many of the written languages of India (e.g. Punjabi, Devanagari, Tamil, Sinhala) and continued to evolve in India after its spread to Southeast Asia. Although there is general consensus that the Lao script and orthography developed from Indic derived writing systems, the precise historical development of written Lao is not yet clear.

As mentioned above, there is disagreement in the literature about whether writing systems related to the Indic Devanagari script (such as Lao) are better characterized as alphabetic or syllabic. Cook and Bassetti (2005), for example, classify Thai as a syllabic writing system whereas Hartmann (1986) and Red (1999) speak of Thai and Hindi as alphabets. Describing Khmer, Zehler and Sapru (2008) state that, “Although Khmer is an alphabetic language there are characteristics of the writing system that depart from a strict alphabetic system and that have led some to characterize it as a syllabic system” (p. 188). This could equally apply to Lao and Thai (among others). Similarly, Vaid and Gupta (2002) categorize the script used to write Hindi as semi-alphabetic having properties of both syllabic and alphabetic writing systems.

As explained in Nakanishi (1980), many Southeast Asian scripts are similar to a number of scripts used to write Indian languages in that consonants contain an “inherent” vowel-sound and use various diacritics to change the inherent vowel to other vowel sounds (p. 70). In fact, a key similarity of scripts derived from Brahmi is that they can be categorized as “diacritically modified consonant syllabic scripts,” known as alphasyllabaries or abugidas. (See Bright, 2000 for discussion of these terms and their use). An abugida or alphasyllabary is therefore similar to an alphabet, but consonants are considered to have an inherent vowel which is then modified by diacritics that can occur as “satellites” before, after, above, and/or below the consonant.

Regardless of the classification system one finds most precise, a key feature of Lao (similar to Hindi and other scripts in the Indic Devanagari family) is this feature that in a given syllable the vowel can occur before, after, above, or below the written consonant. For
example, in order to write the Lao word /sau/ meaning ‘cease’ or ‘stop’, one combines the consonant /s/ with the vowel /au/ to form the word /sau/. However, a vowel/vowel diacritics cannot “stand alone” in Lao and are written in combination with the “null consonant” or placeholder /o/. Therefore the vowel sound /au/ must be written (\. Other Lao vowels may be written above (/i:/, below (/u:/, after (/a/), before (/e/) or a combination of these slots as in the preceding example /sau/. Research examining the issue of “vowel misalignment” (vowels which come after a consonant in speech but before a consonant in writing) in languages such as Hindi (Vaid and Gupta, 2002) and Thai (Winskel, 2009) has found that such a mismatch does affect the L1 reading process. However, this research is preliminary and possible implications for L2 readers have yet to be examined.

Other features of Brahmi derived scripts that have carried over into Southeast Asian writing systems such as Lao are the traditions of writing from left to right, absence of divisions between words, and minimal punctuation. Although there is little research to date, all these issues play a key role in the decoding of written text for both L1 and L2 readers. (See, for example, Randall, M. & Meara, P. 1988, looking at directionality related to Arabic, and Bassetti, 2009, examining word spacing in Chinese).

**Overview of Lao and Thai writing systems**

As discussed above, Lao and Thai are closely related members of the same language family (See Diller, 1996 for a detailed description of Lao and Thai orthographies). As pointed out by Diller (1996), the two scripts “are directly convertible” (p. 457) and share many of the same writing conventions. However, even with their many similarities Thai and Lao exhibit various differences, including between their writing systems. Diller (1996) describes written Thai as being composed of 44 consonant symbols and 19 simple vowel symbols, Lao having only 27 consonant symbols and 18 simple vowel
symbols. Although Thai has 44 consonant symbols it only has 21 consonant phonemes, and similarly Lao has only 20 consonant phonemes. Both languages contain more consonant symbols than consonant phonemes because of the way both languages use three “classes” of consonants (including a set of “duplicates”) as part of the scheme for encoding tone within the writing system. Thai also has sets of consonants which represent different consonants in Sanskrit and Pali but which are pronounced the same in modern Thai. While Thai has this “full complement of Indic characters” (Enfield, 2007, p. 18) that enables both Pali and Sanskrit to be transcribed, Lao does not, and as stressed by Enfield, never did. (Traditionally, Tham script was used in Lao temples to transcribe Pali, and Lao script was not used for this purpose).

According to Ivarsson (1999), “Over a long period the Siamese [Thai] alphabet and orthography had gradually been modified, and at the end of the nineteenth century…appeared as quite a fixed system” (p. 70). Lao spelling, however, was much less standardized, and throughout the early and mid 20th century several competing orthographies were proposed and employed at various times, in various contexts, and with different goals (See Enfield, 1999 and Ivarsson, 1999) including a proposal by the Lao Buddhist Institute to add letters to the Lao script in order to be able to transcribe Pali.

Orthographic Depth

As pointed out by Koda (2005) writing systems vary on two dimensions: orthographic type, the minimal language unit represented in a script, (discussed above) and orthographic depth. Orthographic depth refers to “the degree of regularity in symbol-sound correspondences” (p. 36) between the script and the spoken language. Orthographies are considered “shallow” (Serbo-Croatian being an oft cited example) if these correspondences are highly regular or “deep” if the correspondences are not one-to-one. (English, for example, is a relatively deep orthography compared to Serbo-Croatian.)

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7 Consonant and especially vowel inventories for Lao and Thai often vary in the literature depending on the criteria that are used to categorize consonants and vowels as well as historical factors related to language change over time.
Describing orthographic depth for Lao, however, appears less straightforward. On one hand, using this classification system, Lao might be considered a relatively more shallow orthography because there is a fairly regular correspondence between graphemes and phonemes in post-1975 written Lao. This is due in part to standardization and regularization of spelling conventions by the communist political movement (Pathet Lao) in support of universal literacy efforts beginning in the 1950s through the establishment of the Lao People's Democratic Republic in 1975. From this time forward, words were to be spelled strictly according to their pronunciation, the *karan* ໌ was no longer necessary (indicating silent letters), and the letter ‘r’ was removed from the alphabet because spoken Lao does not traditionally make a distinction between /l/ and /r/ in speech (Enfield, 2007).

However, on the other hand, the Lao writing system displays a number of features which appear to create less phonological transparency (i.e. greater depth), but which are rarely, if ever, discussed in the L2WS literature. For example, 1) Lao encodes contour tone within its writing system and 2) several vowels are written by combining elements of other vowel symbols (for example the /ᵣː/ sound ຍ, is composed of the symbols used to write /eː/ ຍ and /iː/ ຍ ຍ. Perfetti and Dunlap (2008) refer to Lao as an “opaque/deep” language (p. 18), however, they do not explain why. 8 It could be that they are taking into consideration the above features, and/or referring to Lao as written primarily before the 1975 orthographic reforms and to the present day in the Lao diaspora.

As a point of comparison, Thai has maintained its relatively deeper orthography and does not have as strict a one-to-one correspondence between symbols and sounds as many spelling conventions have been maintained from their Sanskrit and Pali origins even though they are not currently a reflection of modern standard Thai pronunciation. Therefore, Lao and Thai orthographies are good examples of very similar spoken languages with writing systems of varying orthographic depth.

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8 See Perfetti and Dunlap (2008) for a helpful discussion of L1 and L2 writing systems and implications for learning to read.
The Orthographic Depth Hypothesis

It is hypothesized that readers rely relatively more heavily on visual processing cues than phonological processing cues when decoding relatively “deeper” orthographies. Katz and Frost (1992) proposed the orthographic depth hypothesis (ODH) which states that:

Shallow orthographies are most easily able to support a word recognition process that involves the language’s phonology. In contrast, deep orthographies encourage a reader to process printed words by referring to their morphology via the printed word’s visual orthographic structure. (p. 71)

Katz and Frost caution, however, that the ODH does not specify particular levels of depth that would predict the predominance of either type of decoding process. They do propose, however, that dominance of assembled (words are “sounded out”) or addressed (the phonology of a whole word is stored in memory and retrieved as a unit) phonological processing may depend on factors such as word frequency or memory-related “cost factors” which may in turn vary between skilled and unskilled readers or be dependent upon linguistic knowledge.

Because Lao is written much as it is pronounced, it should be relatively easier for both L1 and L2 learners to master Lao than Thai which is written etymologically, utilizes multiple written versions of the same spoken consonant sound, and has inherent vowels in some environments. However, as mentioned above, both writing systems are equally complex in the way that they encode tone, utilize “satellite” vowels and display “vowel misalignment.” I propose that these features would make both languages more difficult to decode compared to languages that do not have these features and that these characteristics of the writing systems could present particular challenges for language learners whose L1(s) do not contain these features.9

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9 “Satellite” vowels and vowel misalignment are perhaps best considered separately from the issue of “orthographic depth;” however, these features as well as absence of spacing between words are all crucial factors affecting how both L1 and L2 readers decode text and potential challenges for L2 readers whose L1 does not contain these features (such as L2 Lao learners whose L1 is English).
An alternate proposal to the Orthographic Depth Hypothesis is the Universal Phonological Principle (UPP) that predicts that assembled phonological coding is always primary even in deep orthographies such as Chinese. (See Perfetti and Dunlap, 2008, for a more detailed discussion of the Universal Phonological Principle and its relevance in learning to read an L2WS.)

Models of L1 Reading: The Dual Route Model and a Parallel-Distributed Processing (PDP) Model

A dual route model of L1 reading was first introduced in the 1970s to capture the two main coding processes that appeared to be used by readers to move from printed symbols to reading aloud: a lexical route and a phonological route. This model proposed that these routes are functionally independent, but operate in parallel. Dual processing models were formulated to account for the fact that readers can pronounce words that do not follow regular rules (such as yacht, pint, and colonel in English) but are also able to systematically decode (“sound out”) non-words that could not have previously been stored as a unit in the mental lexicon.

The main alternative to the dual route model is Seidenberg and McClelland’s (1989) parallel-distributed processing (PDP) model (cited in Koda, 1996). This connectionist model defines orthographic knowledge as “an elaborate matrix of correlations among letters, phonemes, syllables, and morphemes,” (p. 452) where frequency plays a determinant role in establishing the strength of connections. Moreover, language acquisition in this model is not a process of learning/internalizing grapheme-phoneme correspondence (GPC) rules, but rather “probabilities of form-function co-occurrences.”

L1 Reading Research – Word Recognition and Decoding

The importance of the role of word recognition and decoding in fluent L1 reading was overshadowed for several decades by a focus on research looking at top-down reading processes. While in the mid

10 See Koda’s, 2008, Transfer Facilitation Model for additional discussion of an application of a form-function approach to reading skill transfer from L1 to L2.
to late 1960s reading received little attention within the audio-lingual approach, by the early 1970s the importance of developing advanced reading and writing skills was recognized but “without a strong theoretical framework to guide practice” (Grabe, 1991, p. 376). However, by the mid to late 1970s Goodman (1967, 1985) and Smith’s (1971, 1982) “psycholinguistic model of reading” was gaining influence among researchers (cited in Grabe, 1991). Goodman proposed that reading was not a process of decoding letters and words but a process whereby the reader made and confirmed predictions based on background knowledge and “sampling” the text. Smith felt that the reader contributed much more to the reading process than did the letters and words on the page. This emphasis on top-down processing marginalized the importance of bottom-up decoding skills in becoming a proficient reader (Grabe, 1991; Koda, 2005).

However, by the mid-1980s empirical evidence in L1 reading research began identifying the central role of word recognition in successful reading, both for beginning and advanced readers. Since then a growing number of studies have shown the importance of automatic, lower-level processing. Chikamatsu (2006), for example, cites studies indicating a direct correlation between reading ability and word recognition skills “…from the early stages of reading in children to advanced levels of reading in adults” (p. 67). In addition, research looking at eye movement patterns has shown that fluent readers focus on a very high percentage of the words on the page and do not normally guess or sample texts as proposed by Goodman (p. 385) as the primary means of getting meaning from a text. Finally, it is typically less successful readers with weak word recognition skills that rely primarily on context to determine meaning. Koda (2005), for example, reviews studies showing that the role context plays in word recognition decreases as reading proficiency increases.

**L2 Reading Research – Word Recognition and Decoding**

Koda (1996) argues that L2 word recognition and decoding deserve further attention not only because relevant research is lacking, but also because there is a growing body of research that suggests that “different writing systems do require qualitatively different processing procedures” (p. 351). Although Koda (2005) acknowledges that L1 word recognition research was a logical starting point
for L2 research, she cautions that “borrowed research paradigms” do not seem able to fully capture “the unique attributes of L2 reading” (p. 4).

Cross-linguistic transfer of language awareness and processing strategies is hypothesized to play an important role in L2 word recognition. Further, cross-linguistic differences between the L1 and L2 such as type and depth are proposed to be a source of difficulty for L2 readers who use their L1 knowledge and/or experience when trying to decode their L2. Learners may also transfer L1 word recognition strategies to their L2 reading. Although cross-linguistic transfer has been shown to be a key factor in L2 decoding, transfer should not be viewed as the sole influence on L2 reading. Both L1 and L2 orthographic knowledge and processing “interactively shape” L2 processing. Cook and Bassetti (2005) likewise agree that L2WS processing is a dynamic, interactive process that involves numerous factors in addition to crosslinguistic influence. Moreover, they argue that learning an L2WS necessary impacts L1WS processing as well.

The Linguistic Threshold Hypothesis and the Central Processing Hypothesis

Another debate that has arisen in L2 reading research is whether “learning to read an L2 is more a language problem or a reading problem.” Although this paper will not address that question in detail, it should be apparent that this issue is particularly relevant when considering pedagogical implications for adult L2 reading instruction. The Linguistic Threshold Hypothesis (LTH) posits that L2 reading is predominantly a language proficiency problem, whereas the Linguistic Interdependence Hypothesis (LIH) proposes that “reading performance in a second language is largely shared with reading ability in a first language” (Bernhardt and Kamil, 1995, p. 17). However, as Bernhardt and Kamil point out, the LIH has rarely been investigated with adult learners and further, there are few studies of second language reading “that enable an examination in support for either of the hypotheses” (p. 19).
Memory and Automatization

An additional issue is the role of memory and automatization in developing L1 and L2 reading skills. Studies in cognitive psychology, for example, have shown that the human mind has limited capacity for higher mental activity. As discussed in Fukkink et al. (2005) a key problem for both L1 and L2 readers is that they “must allocate cognitive resources” to multiple activities simultaneously. Therefore, in order for reading to take place successfully, certain tasks must be executed “with low resource cost” (p. 55).

Koda (2005) reviews studies showing that with increased processing experience speed not only increases but error rate decreases. Further, according to Ellis (2002, cited in Koda 2005) performance efficiency “is directly related to input frequency and practice.” Although Fukkink et al. (2005) did not find significant improvement in reading comprehension as a result of word recognition training, learners in their study were “thoroughly familiar with the alphabetic writing system and fairly familiar with the letter-phoneme correspondences in English” (p. 71). In other words they had already reached a certain “threshold” in decoding and word recognition ability.

I propose that it is learners that have not reached this “threshold level” of familiarity with an L2WS who could particularly benefit from specific practice to develop word recognition and decoding skills, especially learners of an L2WS that is orthographically distinct from their L1WS. Finally as Grabe (1991) concludes, “… the issue of developing automaticity in word recognition is in need of further research; it is also typically neglected in many current textbook rationales.”

Pedagogical Implications

Based on the literature reviewed above as well as personal experience as a language learner of alphabetic, logographic, and syllabic/semi-syllabic writing systems, I offer the following preliminary pedagogical implications.

If as Koda (1996) suggests, efficient word recognition leads to successful comprehension performance, it seems imperative to directly address word recognition/decoding skills when learning or teaching a L2WS particularly (though not exclusively) at beginning
levels. While writing systems that share scripts may pose fewer challenges to L2 language learners, scripts that encode different minimal linguistic units and/or exhibit greater orthographic depth may require specific training in decoding in order for successful word recognition to occur as well as to automatize these processes.

Inefficient decoding can quickly lead to frustration and diminishing motivation, in turn resulting in less reading practice/time on task. As cited above, Koda (2005) reviews studies showing that with increased processing experience, speed not only increases but error rate decreases. And according to Ellis (2002), “performance efficiency is directly tied to input frequency and practice” (cited in Koda, 2005, p. 32).

Top-down strategies and approaches should not be abandoned, but, especially at beginning stages, learners do need specific decoding practice in order to increase automaticity leading to more fluent reading. Learners must be able to effortlessly map the spoken language to its graphic representation in order to then deal with the many “higher order” tasks associated with reading comprehension. Effective use of students’ background knowledge as well as contextu-alized activities (at all levels) should not be abandoned. But clearly, beginning L2 readers are struggling to learn to read a language.

In addition, reading activities that increase learner motivation to read could lead to more reading practice and more efficient processing. One consideration should be reading texts and materials of an appropriate level for learners. Although some beginning L2 readers may find authentic texts motivational, others may quickly be overwhelmed if the level of the reading material is beyond their ability. Ideally, interesting materials for extensive reading should be made available and extensive reading encouraged. However, at a very beginning level it may also be necessary to develop simplified texts for decoding practice. Hulstijn (2001) suggests, for example, having students read ‘new’ texts containing ‘old’ elements as a way to boost student motivation by (hopefully) allowing them to understand the entire text virtually effortlessly upon first reading. As an L2 learner this sounds very appealing, especially as dictionary use is particularly challenging and time consuming for many Asian languages, including Lao.
Further, as word recognition is mapping spoken language to print, it seems imperative to instruct students so that they have a good command of the sound system, sound-symbol correspondences, and basic vocabulary before undertaking reading. Studies show that phonemic awareness is affected by instruction and “is higher when symbol-sound correspondences are explicitly taught” (Bassetti and Cook, 2005, p. 23). Studies of L1 and L2 readers also demonstrate the importance of learners’ metalinguistic awareness and reading development. This includes phonological awareness, “the ability to segment spoken words into their phonological constituents,” grapho-phonological awareness, “the way phonological information is graphically represented in the writing system,” and grapho-morphological awareness, “the ability to identify, analyze, and manipulate morphological information in print” (Koda, 2008, pp. 225-225).

The relative importance of these types of awareness will necessarily depend on the characteristics of the language being learned. The encoding of tone through the writing system in Lao adds another layer of complexity which needs explicit instruction and practice in order to internalize these patterns. Students should be encouraged to create flashcards and ideally a computer program could help students learn symbol-sound correspondences and develop decoding/word recognition skills, encouraging both greater practice and increased speed through guided practice. Learners also need to be provided with strategies for improving their decoding skills both outside and inside of class.

Many Southeast Asian languages associate each consonant to a specific word as a learning tool to aid L1 learners. Posters and charts of the alphabet are available showing the consonants along with this picture. In addition to providing a mnemonic device for remembering the letters, it also provides a meaningful way to build familiarity with a core of common words with concrete references. One issue that needs to be addressed, however, is the intersection of tone representation and decoding processes. Moreover, the traditional method of choral repetition used for L1 Lao learners does not seem appropriate for beginning level Lao L2 learners as it assumes native-like/internalized knowledge of the tonal system. Additional research is needed.
Because of the small number of L2 learners of Southeast Asian languages, heritage and non-heritage learners are often combined into the same classes. Clearly, heritage learners and zero proficiency language learners are in two very different places when they begin to read. Both need to learn the new script but heritage learners already have the spoken language to which they are mapping the script. It would be interesting to look more closely at decoding processes and progress among heritage and non-heritage learners. However, as discussed above, linguistic knowledge and language processing skills are both necessary for successful L2 reading, but one does not imply the other.

Grabe (2004) lists “Ensure word recognition fluency” as the first of ten implications for academic reading instruction and curricula design based on current (though limited) research. His proposals for the best ways to teach word recognition fluency include “through timed word recognition practice” and “extended reading practice” as well as “greater phonological awareness,” “morphological awareness training,” and “assisted reading activities.” Grabe concludes by calling for specific research addressing the effectiveness of specific instructional practices for greater fluency in word recognition.

A Guide to the Study of Southeast Asian Languages published by the Council of Teachers of Southeast Asian Languages (COTSEAL) (Carpenter, Compton, Riddle, and Wheatley, 2000) gives helpful advice directed specifically at learners of Southeast Asian languages. The authors highlight the particular challenges of learning to read and write these languages and stress the importance of repetition, memorization, motivation and practice, “putting in the time,” especially at the beginning levels. Although current literature may frame some of these practices as not in line with a “communicative approach” or as too “audio-lingual” in nature, learning to read and write in a language that employs an L2 script that is different from the L1 script involves particular challenges as discussed in this paper. As pointed out by Carpenter et al. (2000), the Foreign Service Institute estimates that it will take at least 1320 hours for an L1 English speaker to acquire professional proficiency in Thai, Lao, Khmer, and Burmese compared with 720 for French, German, and Spanish. Differences in writing systems certainly play a key role. However, even Carpenter et al.’s helpful guide provides little specific discussion or suggestions for the
beginning stages of learning to decode (as opposed to read or write) a language such as Lao efficiently and effectively.

Finally, some insights into the teaching of Southeast Asian writing systems are offered through a small but growing number of articles looking at the teaching and learning of Hindi as a second language. Van Olphen (1995) discusses the use of video for teaching the Devanagari script. Although he says that the results are the same as those “using pencil and paper,” he reports that the students enjoy the videos which seem to increase motivation.

Red (1995) suggests that authentic Hindi texts may not be appropriate for beginning learners particularly because of problems relating to structure, cultural content, and rhetorical form. Interestingly, Red reports using the Roman alphabet (transliteration) in the early stages of teaching the Hindi script. The issue of when and whether to use a Romanized version of a Southeast Asian script at all in the teaching/learning process is an on-going debate among instructors of Southeast Asian languages, though no known articles discuss this important (and controversial) topic. This issue deserves further study. Specific activities described by Red include having the students make flash cards, search for letters they have learned in newspaper articles, practice symbol-sound correspondences by seeing the grapheme written and hearing the phoneme pronounced simultaneously, reading aloud, and reading of both simplified and authentic texts. And as Red points out, little is known about how L1 learners process Hindi, let alone L2 learners. This is also true for Lao and other Southeast Asian languages.

In conclusion, this paper has argued that more attention needs to be given to bottom-up processing skills particularly for beginning adult readers of languages with a L2WS different from that of their L1WS. Pedagogical implications were offered as a preliminary attempt to apply L2WS word recognition and decoding theory and research to the challenge of L2 reading instruction. In particular, I proposed that learners need specific training in decoding L2WSs such as Lao in order for successful word recognition to occur as well as to automatize these processes. Issues such as orthographic type and depth, as well as other key concerns such as spacing and directionality (e.g. “satellite” vowels and vowel “misalignment”) create unique challenges for learners and teachers of Indic-derived writing systems, and
instruction needs to specifically assist students in developing decoding skills in the L2WS, particularly before learners have attained a certain “threshold” level in their decoding ability. Possible activities to support this development include 1) use of flashcards, computer programs, and other teaching aids to reinforce phoneme-grapheme correspondences and 2) repeated readings of level appropriate/simplified texts in order to promote “effortless” reading. Learners of an L2WS different from their L1WS need to “put in the time” in order to experience results, and drills and other repetitive activities will likely be needed in order to build L2WS decoding and word recognition skills.

Additional research focusing on Lao and other South and Southeast Asian languages utilizing Indic derived scripts is needed, including research looking at both L1 and L2 adult readers. In particular, research is needed examining how tone encoded within the writing system, vowel misalignment/satellite vowels, and lack of word spacing affect L2WS decoding and word recognition. Finally, more detailed recommendations for specific L2 teaching techniques and activities need to be described and their use empirically examined. Hopefully increased interest in less-commonly taught languages in the United States will provide an impetus for a needed increase in research in the areas of both second language writing systems and Lao as a second language.

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