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HELPING CHINESE LEARNERS DISTINGUISH ENGLISH /l/ AND /n/

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Research has demonstrated that certain consonant errors have strong negative effects on speaker intelligibility and comprehensibility to NNS and NS listeners (Jenkins, 2000; Munro & Derwing, 2006). One consonant distinction identified on theoretical grounds by Brown (1988) and Catford (1987) as “high functional load” and empirically demonstrated (Munro & Derwing, 2006) as important to comprehensibility in English is the /l/ and /n/ distinction. Certain Chinese speakers of English tend to confuse /l/ and /n/, and this paper therefore describes their struggle, discusses characteristics of the Chinese language context that likely affect their /l/ and /n/ substitution, and proposes a research agenda aimed at clarifying various aspects of this struggle so that more effective pedagogical methods and materials for helping these learners can be developed.

INTRODUCTION

In *The Phonology of English as an International Language* (2000), Jenkins contends that prevailing pronunciation pedagogy emphasizing suprasegmentals vis-à-vis segmentals runs contrary to the need of most English language learners around the world. In fact, in Jenkins’ (2000) studies, 27 out of 40 total instances in which “a [NNS listener] was unable to understand the meaning of his or her [NNS] interlocutor” (Jenkins, 2000, p. 84) were caused by learners’ inappropriate transfer of L1 segmentals into English.¹ Suprasegmental errors, in contrast, figured in only one of these 40 communication breakdowns. It is unsurprising, therefore, that the first of four areas Jenkins proposes as key to preserving phonological intelligibility is the English consonant inventory, though it is important to note her caveats here. These caveats can be summarized, in my words, as “All consonants are not created equal.” That is, a few consonant confluents, i.e. /θ/, /ð/, and /ʃ/ do not compromise EIL intelligibility, but others such as the stereotypical Asian /l/-/r/ substitutions do (Celce-Murcia, et al., 2010; Jenkins, 2002; Paolillo, 1995).

Functional load, as it relates to phonology, has been defined by King (1967) as “A measure of the work which two phonemes (or a distinctive feature) do in keeping utterances apart” (p. 831). According to Brown (1988), two important means of measuring functional load are (1) the

¹ Transfer from a learner’s L1 to her or his L2 interlanguage is, of course, a well-recognized phenomenon in SLA. Jenkins points out, however, that the role of L1 transfer in pronunciation is unique in that “It is widely agreed that habit formation in language transfer figures more extensively at the phonological level than at either the syntactic or lexical levels: “The influence of L1 phonological habits in second language acquisition is due largely to the nature of the speech process itself. . . . The production of speech sounds is unlike that of lexis and syntax, since it does not involve passing messages through the brain, but rather the development of highly automatized motor skills and, consequently, over time, the formation of L1 speech habits which are not easily de-automatized in L2” (Jenkins, 2000, p. 112)

frequency of minimal pairs containing the two phonemes and (2), the frequency of each phoneme individually in the target language. Munro and Derwing (2006) suggest a phoneme's word position may be an additional relevant factor since research indicates that "word initial errors are more important than errors in other positions" (p. 530).

The functional load principle predicts that high functional load phonemic errors will more greatly affect listener comprehension than low functional load errors (Brown, 1988). While this makes intuitive sense, the functional load principle was not empirically investigated until Munro and Derwing (2006) conducted a study in which thirteen NS listener judges rated NNS- and NS-produced sentences for comprehensibility (i.e., listeners' impression of the ease of understanding a speaker) and accentedness (i.e., how a speaker's NNS production differs from NS production). The intent was to discover whether sentences containing phonemic errors identified by Brown (1991) and Catford (1987) as high functional load (specifically /l/ → /n/; /n/ → /l/; /s/ → /ʃ/; /ʃ/ → /s/; /d/ → /z/) would receive lower ratings than those containing errors identified as low functional load (specifically /ð/ → /d/ and /θ/ → /f/). Interrater reliability was high—0.968 for comprehensibility and 0.987 for accentedness—with findings strongly supporting the functional load principle as a reliable guide for identifying segmental errors most likely to affect the comprehensibility of NNS pronunciations for a NS audience. Munro and Derwing (2006) write that "even sentences that contained only one high FL [functional load] error were rated significantly worse for comprehensibility than sentences containing three low FL errors" (p. 528) and "the effect of low FL errors on comprehensibility appeared to be very small in comparison with the effect of these errors on accentedness" (p. 529).

Thus, Munro and Derwing's (2006) research addressing the comprehensibility effects of high functional load errors on NS listeners and Jenkins' investigation of the causes underlying instances in which "a [NNS listener] was unable to understand the meaning of his or her [NNS] interlocutor" (Jenkins, 2000, p. 84) concur: the confusion of certain consonant pairs has strong negative effects on listener understanding, whether listeners are NNSs or NSs.

/l/ and /n/ substitution: A high functional load phonemic error

The consonant pair /l/ and /n/ made up two of the five high functional load substitution errors (i.e. /l/ → /n/ and /n/ → /l/) investigated in Munro and Derwing (2006). In Brown (1988, 1991), /n/ and /l/ are one of five minimal pairs ascribed the highest rank (that is, a "10," meaning "of maximal importance" [p. 222]) on the basis of functional load. Similarly, in Catford (1987), /l/ and /n/ rank higher for functional load than many of the minimal pairs frequently addressed in commercial pronunciation textbooks (e.g. for word-initial position, /b/ vs. /v/; /s/, /t/, and /f/ vs. /θ/; and /d/, /v/, and /z/ vs. /ð/; and for word-final position, /n/ vs. /ŋ/; /p/ vs. /b/; and /t/, /s/ and /f/ vs. /θ/).

My personal interest in helping Chinese learners who struggle with /l/ and /n/ substitution began when after two years of teaching English in China and travel in several Chinese provinces, I returned to the U.S. and taught three sections of a pronunciation course for international teaching assistants (ITAs) at my university. The 37 students required to take my course were those who had received the lowest scores (largely due to problematic pronunciation) on our university's ITA oral and teaching proficiency exam and five of these 37 students were Chinese who confused /l/ and /n/. I could not understand how such a high percentage of /l/-and-/n/-confusing Chinese could test at the level of my pronunciation course, the lowest one offered, when according to my memory, I had previously had few or no encounters with /l/-and-/n/-confusing individuals among

my hundreds of Chinese friends, colleagues, acquaintances, and former students. In addition, although like most ESL/EFL instructors, I have become accustomed to interpreting the English of low-proficiency NNSs, I found resolving confusion I experienced as a result of my students' /l/ and /n/ substitutions more difficult than resolving confusion due to nearly any other student pronunciation error. Also, whereas ordinarily I see students make obvious progress as regards problematic segmentals addressed in weekly individual pronunciation tutoring sessions, progress as regards /l/ and /n/ substitution has seemed much less assured and hard-won when it actually does occur. Thus I became strongly interested in acquiring an understanding of the Chinese language context which fosters such widely varying pronunciation performance in Chinese speakers' L2 English.

Understanding the Chinese language context as it relates to /l/ and /n/ substitutions

The purpose of this section is to share information well-known among Chinese, but frequently not known outside of China so that non-Chinese teachers of Chinese ESL/EFL learners may better understand their students and reasons for their sometimes widely varying pronunciation needs.² Teachers who have had Chinese students who struggle to distinguish /l/ and /n/ will undoubtedly have noticed their problem is not shared by every Chinese person. This is because, as Paolillo (1995, p. 275) notes, “[The language known as] ‘Chinese’ actually refers to a group of related languages that differ considerably in their phonology.” That is, spoken “dialects”³ of “Chinese” abound and only some confuse /l/ and /n/ (perhaps most notably the dialects of Hubei and Sichuan provinces).

Teachers who have had students who struggle with /l/ and /n/ substitution will likely also have noticed that *how much* their students' struggle vary widely. This is frequently a reflection not only of inherent differences among learners in terms of the variables usually considered in individual learner difference research, but also of the degree to which students have grown up in a dialect environment (where /l/ and /n/ may or may not be distinguished) versus a Mandarin environment (which, in its standard form, *does* distinguish /l/ and /n/). For example, in most metropolitan areas of China, where native speakers of many dialects live together and where national media influence is strong, Mandarin is used not only for school, government, and major business interactions, but also for many other everyday interactions. However, in rural areas and in a few metropolitan areas (perhaps most notably those where the dominant dialect is Cantonese), everyday interactions and sometimes even formal interactions which might elsewhere be expected to occur in Mandarin are frequently accomplished via the dialect. In addition, while Mandarin is the prescribed language of the schools, since teachers generally

² I have acquired this information via myriad conversations with Chinese students, colleagues, and friends over a period of several years. It is therefore impossible for me to list all who have contributed to this section. However, I do want to specifically thank my current colleagues Zhi (Jay) Li and Manman (Mandy) Qian, both of whom grew up in /l/-and-/n/-confusing dialect areas of China and who graciously agreed to read and comment on this paper in order to verify I was accurately presenting Chinese perspectives.

³ Chinese speakers define “dialect” as spoken language by which listeners can identify where one grew up. Thus, both speakers of northeastern Chinese, whose spoken language may be only slightly different from standard Mandarin, and Cantonese speakers, whose spoken language is mutually unintelligible with Mandarin, are both said to speak a dialect. To identify a Chinese learner's dialectal background, teachers can ask questions about (1) whether language learners speak a dialect in addition to Mandarin; (2) how easily someone who speaks only Mandarin could understand their dialect; and (3) in what contexts in China do they usually speak their dialect versus Mandarin (e.g. at home, with neighbors, in neighborhood shops, in banks, in government buildings, in school, etc.)?

teach in their home area, they frequently speak a “Mandarin” that is strongly dialect-influenced. Learners who have grown up in an area where the local dialect confuses /l/ and /n/ and is used extensively are likely to have substantial struggles distinguishing the sounds in both listening and speaking. However if students have grown up speaking an /l/-and-/n/-confusing dialect only at home or in a few informal contexts, and if they have been taught by teachers who speak a more standard form of Mandarin, they may not struggle with /l/ and /n/ substitution in Mandarin (or English).

English language teachers attempting to help students who confuse /l/ and /n/ need also to consider how the tonal character of Mandarin (and many other Chinese dialects) likely affects how these learners understand and subconsciously allot attention to segmental cues versus suprasegmental cues in their reception and production of oral language. The tonal character of Mandarin and many Chinese dialects implies that segmental errors have less influence on a speaker’s intelligibility and comprehensibility than they do in a nontonal language like English.⁴ This is because syllables in Mandarin are distinguished not only by segmental combination, but also by which of the four tones they take (or whether their tone is neutralized). In fact, Mandarin utilizes only about 400 syllables (that is, about 400 segmental combinations),⁵ so it is likely that L1 Chinese speakers, in comparison to L1 English speakers, unconsciously attend more, both in listening and in speaking, to a syllable’s tone and context (within a multi-syllable word and/or the sentence) than to its segmentals⁶. This and the fact that Mandarin syllable structure makes /l/ and /n/ substitution possible only in word-initial position⁷ is likely the reason why Chinese speakers commonly view it as producing mere accentedness, whereas in English, /l/ and /n/ substitution has serious intelligibility ramifications. Certainly then, it is important that research be conducted on the characteristics of the high functional load /l/→/n/ and /n/→/l/ substitutions so that principled pedagogical methods and materials effective in helping these learners grow in their control of the /l/ and /n/ distinction can be developed. To this end, I therefore propose the following research agenda.

AN /l/ AND /n/ RESEARCH AGENDA

⁴ Unfortunately, I am aware of no empirical research addressing the relative impact of phonemic versus prosodic errors on intelligibility and comprehensibility in Mandarin (though such research would probably be useful for informing the teaching of English speaking and listening to Chinese students).

⁵ While tone distinguishes many syllables that would otherwise be homophones, the number of homophones in Mandarin, relative to English, remains large. A classic example of this is the eight different Chinese surnames transliterated “Li” in English. While the four tones of Mandarin do distinguish some of these surnames, they clearly are not adequate to distinguish all eight!

⁶ Evidence for this is found in the standard discourse routines used by listeners in Mandarin vs. English to resolve uncertainties about what a speaker has said. Whereas Chinese listeners normally ask a speaker “什么丽?” (“Which ‘li’?”) to which speakers respond by providing an additional, nonambiguous context, “美丽的丽” (“Meili’s ‘li.’”), English listeners who are uncertain about the particular word a speaker has said frequently repeat what they think they have heard—that is, the problem word’s segmental sequence and, in the case of multisyllabic words, its word stress—with a question intonation, i.e. “Night?” English speakers are likely also to insert the two possible words they believe the speaker may have said into a choice question: “Night or light?” Both English speaker responses, however, involve listeners asking for disambiguation via clear segmental pronunciation. The Chinese discourse routine would be much more likely to be answered with a spelling in English (e.g. “Which ‘their’?”) than with an additional context.

⁷ All syllables in Mandarin are either V, CV, or CVC and the language does not allow /l/ (or /h/) in word-final position.

Confusion of /l/ and /n/ among these learners appears to be the result of a situation described by Jenkins (2000) in which two phones (i.e. [l] and [n]) have the status of allophones in the learner's L1 (in this case, their regional dialect), but full phonemic status in the L2 (i.e. English). As Jenkins indicates frequently occurs in this situation, learners' resulting incorrect distribution of the phones in their L2 speech tends to lead ultimately to unintelligibility.⁸ She describes this situation as "particularly troublesome, since learners may not be aware of any difference in the articulation of sounds which are purely allophonic in their L1" (2000, p. 33). Jenkins' (2000) description of the challenge students who must learn in their L2 to distinguish as phonemes sounds (phones) which are allophonic in their L1 seems closely to match my observation of my students' /l/ and /n/ learning process: "Although production would also prove difficult prior to extensive instruction, it would almost certainly precede perception. We cannot assume that because [nonbilingual English speakers] are able to produce sound contrasts, they can necessarily discriminate aurally between them; indeed, the opposite is not infrequently true" (pp. 33-34).

While my experience with these students suggests that they face this particular troublesome situation, the bulk of my data has been collected anecdotally and unsystematically. It would therefore be valuable if future research involving pretesting, pedagogical treatment, and mid-treatment assessments confirmed or disconfirmed the following hypotheses:

- Learners having /l/ and /n/ substitution problems tend to confuse the two sounds both aurally and orally.
- Learners generally gain control of the /l/ and /n/ distinction orally, as they acquire and learn to apply "physiological knowledge regarding. . .articulation" (Jenkins, 2000, p. 33), prior to gaining the ability to distinguish /l/ and /n/ aurally.

In addition, if it is true that /l/ and /n/ are allophones of these students' home dialect(s), it would also be useful to discover the answer to the following research questions via a carefully designed pretest:

- How does learners' production of /l/ vs. /n/ vary according to characteristics of the phonetic environment? For example, are /l/ and /n/ produced in complimentary distribution? Or does recent production of /n/ facilitate nasalization of sounds that follow whereas recent (accurate) production of the oral /l/ facilitates oralization in sounds that follow? Does the recent production of other similar phonemes (e.g. /m/, /ŋ/, /d/⁹, /ʌ/) have similar facilitative/debilitative effects, and if so, what are they?

From my observation, it appears /n/ is much easier for these learners to produce than /l/. John Levis has suggested in our various conversations on the topic that this may be the result of a dialectally-conditioned articulatory setting in which learners' default stream-of-speech position is with the velum in its relaxed, partially open state. That is, the problem may not be with

⁸ The research of Brown (1988), Catford (1987), and Munro and Derwing (2006), of course, suggests that unintelligibility is not likely in *all* cases where L1-allophonic phones have full phonemic status in the L2, but only where L1-allophonic phones correlate to L2 phonemes carrying high functional load.

⁹ The similarity between [n] and [d] may not be transparent, but [d] is a voiced alveolar *oral* stop, whereas [n] is voiced alveolar *nasal* stop.

learners' tongue position¹⁰, but rather with their (at least) partially open velum, which results in their producing a nasalized /l/. This would explain my observation that students frequently seem to be producing one of the standard allophones of neither English /n/ or /l/ when attempting to produce /l/, but rather a different phone altogether (although admittedly one that sounds more /n/-ish to English-conditioned ears than /l/-ish). It also explains an observation made by both John Levis and me that learners who confuse /l/ and /n/ sometimes also nasalize /d/.

Phonetic/acoustic analysis (e.g. via PRAAT, see Boersma & Weenik, 2012) of learner speech samples (preferably not only in English, e.g. from their pretest, but also in their dialect) would therefore be valuable to answer the following research questions:

- To what extent, if any, is learners' default stream-of-speech position with the velum in a relaxed, partially open state?
- When the untrained ear of an L1 English speaker hears learners apparently substituting /l/ for /n/, are these learners producing a nasalized /l/ (such as [l̃])—and thus their apparent substitution results solely from inappropriate nasalization in their L2 English—or is their apparent /l/ and /n/ substitution the result of both improper mouth positioning *and* nasalization?

CONCLUSION

Clearly, obtaining answers to the research questions above would allow us to develop more effective pedagogical methods and materials for helping learners whose L2 English reflects an /l/-and-/n/-confusing dialect to acquire this high-functional-load distinction and thereby increase their L2 English comprehensibility (Jenkins, 2000; Munro and Derwing, 2006). I therefore hope that other teachers and researchers working with these learners will join me in researching the above questions and in developing methods and materials for helping learners overcome this very damaging error.

ABOUT THE AUTHOR

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¹⁰ Meaning, of course, that any attempt teachers make to demonstrate how /l/ and /n/ are different in the mouth, whether via sagittal section diagrams or modeling, will fail to help.

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