

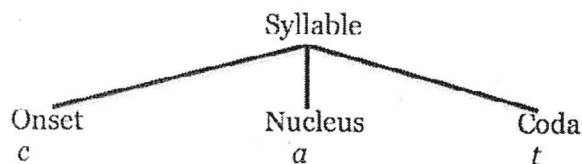
DID HE SAY *WET*, *WHEN*, OR *WENT*?

Second Language Learners and Consonant Clusters

By John Archibald, University of Victoria

As second language (L2) teachers, you are all familiar with the great diversity of second language accents. You can probably tell who sounds French, who sounds Polish, and who sounds Russian. All native speakers are good at this kind of accent recognition. Accents can be marked by troubles with such things as consonants, vowels, or stress placement and can manifest themselves in our production and in our perception. The issue that I want to focus on in this piece is *consonant clusters*. For our purposes, a consonant cluster is a sequence of consonants in the same syllable. So, a word like *plant* has a two-segment cluster at the beginning of the word and a two-segment cluster at the end. There are some languages which do not allow consonant clusters inside a syllable. So, when speakers of those languages learn English they have to learn about allowable English syllables.

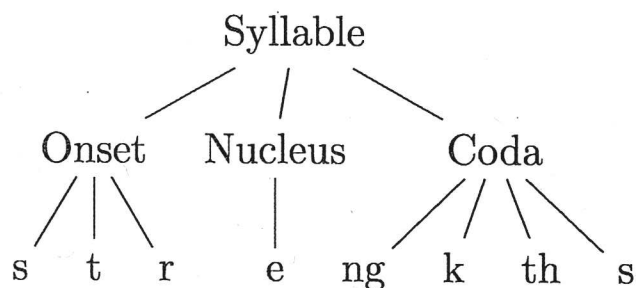
Syllables have internal structure which, simplifying slightly, looks something like this:



Languages vary in such things as whether or not they allow codas (some languages only allow syllables of consonant + vowel), or whether the onsets or codas can *branch*. If there are no branching onsets then only a single consonant can be in the onset. So a word like *pay* or *ray* would be fine but a word like *pray* would not be possible. L2 learners have to learn about the syllable structure of their target language.

When we borrow a word from another language, or when we try to say a foreign word, we tend to try to force the foreign or borrowed word to fit into our linguistic rules or patterns. So, a French speaker may not use a “th” sound when producing a word like *thumb* (instead saying *tum* or *sum*) because French lacks the “th” sound. This phenomenon can also affect our perception. A Japanese speaker (whose first language (L1) lacks a distinction between an [l] and a [r]) may have difficulty distinguishing between the words *rake* and *lake* if there is no context to help with the interpretation (but may do just fine when there is context: *He fell into the lake*). We refer to these as *repair* strategies, as we try to fix the foreign words to fit our L1 rules.

English allows pretty complex syllable structures as you can see in a word like *strengths*. Phonetically, this has three consonants at the beginning and four at the end.



Imagine the learning task if your first language allows one consonant at the beginning and one at the end! What's a poor ESL student to do? Well, broadly speaking there are two strategies available to them: deletion and insertion. The technical term for insertion is *epenthesis*.

A deletion repair strategy: *plant* → *pan*

An epenthesis repair strategy: *plant* → *pilanti*

Some facts about cluster repair:

1. Native speakers of English “repair” clusters too. A word like *grandmother* is often pronounced *grammother*. Many languages don't like having three consonants in a row (though languages like Swedish have a “pain threshold” of up to five in a row). Your students may vary on which consonant in a sequence they delete. English speakers tend to delete the middle consonant (as in *grandmother*) while other languages may delete the first or the third.
2. Some L1s prefer deletion repairs while others prefer epenthesis so your students may vary as well. For example, Japanese tends to break up consonant sequences that are not allowed via epenthesis. So, when Japanese borrows an English word that violates Japanese phonological rules (such as *baseball*), they insert epenthetic vowels (in this case an [u]) to make well-formed Japanese syllable and the word is pronounced something like *basubarū*. Experimental studies have shown that when Japanese speakers listen to made-up words which violate Japanese phonology (e.g., [ebdo] - because Japanese codas cannot have a [b]) they actually perceive an epenthetic vowel to be there; they hear [ebudo] when [ebdo] is played to them (Dehaene-Lambertz, Dupoux, & Gout, 2000). This shows that epenthesis is not just a late motor strategy to make something easier to say but a real perception issue. If we want to teach pronunciation, we have to work on perception too.
3. Languages vary on whether they epenthesisize to the left of a cluster (*iFred*) or in the middle of a cluster (*Fi-red*) for the English name *Fred* (Broselow, 1992).
4. Even students who come from “deletion” languages epenthesisize more as their proficiency level in English increases (Abrahamsson, 2003). This is most likely because it makes it easier for the listener to recover the intended meaning. Pronunciations like *wena* for *when* and *weta* for *wet* would be easier for the

listener than if both were pronounced by deleting the final consonant (e.g. *we*).

5. Students are more likely to epenthesize (rather than delete) on *content* words (nouns, verbs, adjectives, etc.) than on *function* words (articles, prepositions, pronouns, etc.). Thus, there might be variation in that the same student might change *cat* to *cata* but pronounce *it* as *i*. There may be a functional reason for this too as the listener has other sources of information to recover the word “it” in the phrase *i is over there* compared with recovering the word “cat” in the phrase *look at the ca*.
6. Students *can* learn L2 clusters. Interestingly, the most frequent sequences in their input are not necessarily the ones they become accurate on earliest. Brazilian Portuguese lacks s+Consonant clusters so have to learn to pronounce English *sl*, *sn* and *st* sequences. In their classroom input the *st* cluster is the most frequent. However, in the world’s languages, *sl* clusters are the most common. So, which will be easier for them to acquire first? It turns out that they become accurate on *sl* clusters before *st* clusters (Cardoso, 2007; Cardoso, John, & French, 2009). This demonstrates that language universals can influence second language learners’ grammars; not just their L1.
7. Students are also more likely to epenthesize in certain situations. For example, in casual conversation, they will epenthesize less than if they are reading out a list of words in a pronunciation class (Lin, 2001). The more formal the task, the more epenthesis (and less deletion) there is. In addition, sentences also provide contextual information to recover the meaning that a decontextualized word list does not. So, it would be easier for the listener to understand the meaning of *I bought a rose pant at the greenhouse* than it would be to hear the word *pant* in isolation and understand that the target word was *plant*.
8. The final aspect of learning L2 clusters that I want to address is a little more technical but bear with me. Broadly speaking it has to do with the question of whether you can learn “stuff” in your L2 which isn’t found in your L1. Short answer: yes. You can learn new consonants, vowels, stress placement, tones, and syllable positions. We know that, particularly at early stages of acquisition, structures from the L1 influence the L2 (a process known as *transfer*). An interesting question for me is *under what conditions can we override L1 transfer?* There are two broad conditions which I have investigated, only one of which I will elaborate on here. The two conditions are: (a) robust phonetic cues in the L2, and (b) redeployment of L1 structures. An example of robust phonetic cues would be that Japanese speakers can learn Russian “r” sounds even though they have difficulty with the English “r” sound (Larson Hall, 2004). The Russian “r” is much more strident and is trilled compared to the subtler acoustic cues to the English “r”. But, let me say a bit more about *redemption* (Archibald, 2006). The basic idea here is that even if you lack a phenomenon in your L1, you might have the necessary building blocks in your L1 to construct the new forms. You can redeploy your blocks to build a new structure. Let me attempt to elucidate. When English speakers try to learn Japanese, they have to learn what are called *geminate* (or long) consonants. In Japanese a word like *kitte* means something different from a word like *kite*; the length of the consonant matters. English doesn’t have a long/short consonant distinction, but

English speakers seem to be able to learn Japanese long consonants (Summerell, 2007). Why? One argument is that English speakers take the building blocks of their stress system and use it for Japanese length. Don't worry about the details.

So, what does this have to do with consonant clusters? Well, let's look at two languages which both lack clusters at the beginning of a word: Finnish and Korean. If L1 transfer is the only story, we'd expect Finnish and Korean learners to behave in the same way. But they don't. Finnish learners do quite well at acquiring English clusters while Korean learners struggle. How are the Finnish learners overriding the properties of their L1? What I have argued (Archibald, 2003) is that languages which have an l/r contrast have an easier time acquiring initial consonant clusters than languages which lack the l/r contrast. The reasons for this are somewhat arcane but suffice it to say that languages differ on the kinds of clusters they allow. Greek allows initial sequences like *pt* (as in *pterodactyl*) while English does not (unless it comes across two syllables as in *helicopter*). Languages have rules about how similar the two consonants can be at the beginning of a word. Greek allows them to be quite similar ([p] and [t]), French allows clusters like *pn* (as in *pneu*) which has slightly more similar consonants than the English *pl* and *pr* clusters. Here's the link: the phonological structure which allows a language to make an [l] versus [r] contrast is the *same* phonological structure that you can redeploy to create an initial consonant cluster. So, Finnish speakers (who have an [l]/[r] contrast but no initial clusters) can redeploy that structure to acquire English clusters while Korean speakers (who lack an [l]/[r] contrast and also lack initial clusters) do not have the building blocks to redeploy.

Summing Up

As with any technical subject, the field of Second Language Acquisition as represented in journals such as *Second Language Research*, *Bilingualism: Language and Cognition*, or *Studies in Second Language Research* can be somewhat opaque and not necessarily welcoming to second language teachers. I hope that this summary of one small area of research has been helpful to you, and will allow you to listen to your students consonant clusters in a whole new way.

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Bio



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