

## THE PHONOLOGICAL INFLUENCES ON NON-NATIVE PHONETIC CHANGE

Maryana Sitinjak<sup>1</sup>, Rahmadsyah Rangkuti<sup>2</sup>  
Universitas Sumatera Utara, Sumatera Utara, Indonesia  
[maryanasitinjak12@gmail.com](mailto:maryanasitinjak12@gmail.com), [rangkuti@usu.ac.id](mailto:rangkuti@usu.ac.id)

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### Abstract

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**Introduction:** *Studies of cross-language perception at the segmental level generally find that adults have great difficulty understanding the contrast of non-native consonants and/or vowels. Non-original phonotactics are often generated by type accuracy and error. Purpose:* This article examines the effect of phonology on non-native phonetic changes. **Methods:** *This research is a qualitative research with a literature review study method from the latest research. The collected data were analyzed by in-depth analysis. Results:* Based on the results of data analysis, it shows that non-native speakers are not as accurate in the production of different illegal sequences. These findings also imply that linguistic experiences with native tones need not facilitate non-native phonetic changes. However, non-native phonetics change if there is habituation and construction in the right way. **Conclusion:** It can be concluded that non-native English still has problems in proper English articulation. Given the importance of phonetic accuracy in expressing spoken messages, foreign speakers must pay close attention to this matter and fix it by encouraging, involving and involving them every time to practice.

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Corresponding Author: Maryana Sitinjak  
E-mail: [maryanasitinjak12@gmail.com](mailto:maryanasitinjak12@gmail.com)



## INTRODUCTION

As the people know that English is as international language. It is not astonishing that English as subject in every level of school grade in around the world. However, mastery in English grammar are not followed by same intonations and how phonetic are well formed. This situation is oftentimes difficulties to understood by native speakers. Phonetic change refers exclusively to a change in speakers' knowledge of how speech sounds are implemented in a continuous phonetic space (Thomas & Mielke, 2021). Meanwhile, influence refers to any kind of effect that speakers' knowledge of discrete, categorical phonological representations and processes can have on causing, constraining, or preventing phonetic change as defined in definition.

Researchers agree that in the production of real words, there are a number of factors influencing what constitutes a well-formed word of a language. On one hand, there are some types of sequences that are prohibited outright and are not attested in the lexicon at all. Particular segments may be completely unattested in certain positions even though the segment itself is part of the inventory of the language (e.g., /h/ in English: home, but \*[moh]; cf. [tuh] 'rain' in Zoque. It is commonly assumed that since phonotactic restrictions are

language-particular, they are encoded in the higher-level phonological grammar of the language (Moreton, 2016).

On the other hand, phonological well-formedness is not a simple, categorical concept. That is, a sequence type may be attested but infrequent in the lexicon, which has a number of consequences for the processing of such sequences. That speakers are sensitive to the frequency of different types of elements in the lexicon has been demonstrated by a growing body of research. Frequency effects have been found in both production and perception tasks. For example, when asked to repeat non-words, speakers respond more rapidly when the items contain high-probability phoneme sequences (Vitevitch & Luce, 2005). Perception studies have shown that when presented with acoustically ambiguous consonants in a sequence, listeners are more likely to interpret them as the consonant that would comprise the more frequent sequence.

Likewise, in a word recognition task, participants are more likely to recall non-words with high probability sequences than with low-probability sequence (Frisch et al., 2000). It has also been shown that acquisition of lexical items is facilitated when words have a greater phonotactic probability (Storkel, 2001). Finally, a number of studies have shown that participants asked to rate the “wordlikeness” of non-word stimuli generally give higher ratings to stimuli containing sequences that are attested more frequently across the lexicon (Bailey & Hahn, 2001); (Frisch et al., 2000); (Munson, 2001).

It has been suggested that perception of non-native speech is constrained by both the phonological and the phonetic properties of their native language (Ahmed et al., 2020). In contrast, we use the term phonetic properties to refer to characteristics of pronunciation that are not phonologically distinctive in a language (fine-grained, gradient, within-category, non-contrastive details of speech). For instance, when American English listeners categorized the Zulu aspirated voiceless velar stop [k<sup>h</sup>] and ejective [k’], they perceived both as the voiceless stop [k<sup>h</sup>], but the non-native sound [k’] was perceived as having odd or unusual voice qualities (non-contrastive gradient difference), because English has a [k<sup>h</sup>] but no ejectives (Best et al., 2001).

The second language acquisition literature provides ample evidence suggesting that speakers do not produce all unattested sequences with equal accuracy. For example, an investigation of the production of English codas by Vietnamese speakers showed that while speakers had moderate trouble producing /s/ and /f/ in coda position, they were less accurate on /v/ and /l/, followed by /P/ (Hansen, 2004). All of these are phonemes of Vietnamese, though they are not allowed in coda position. (Hyman, 2013) found that in producing English initial consonant clusters that are phonotactically prohibited in their native languages, Japanese and Korean participants were more accurate on voiceless stop-initial sequences than they were on either voiced stop or fricative-initial ones. In a study investigating the role of sonority sequencing in the production of phonotactically illegal sequences, (Davidson et al., 2004) presented English speakers with words containing Polish-legal onset clusters such as /kt/, /tf/, /dv/, /zm/, /vn/ etc. Results showed that sonority sequencing alone cannot account for the data. For example, clusters like /zm/ and /vn/ differ only in place, not in sonority distance, but speakers’ accuracy in producing these sequences is very different (63% vs. 11%). Similar accuracy results were reported for Scottish English speakers producing Russian onset clusters who were asked to write down what they heard (Haunz, 2003).

Therefore this research examines how far the phonological will influences the phonetic change for non-native speaker.

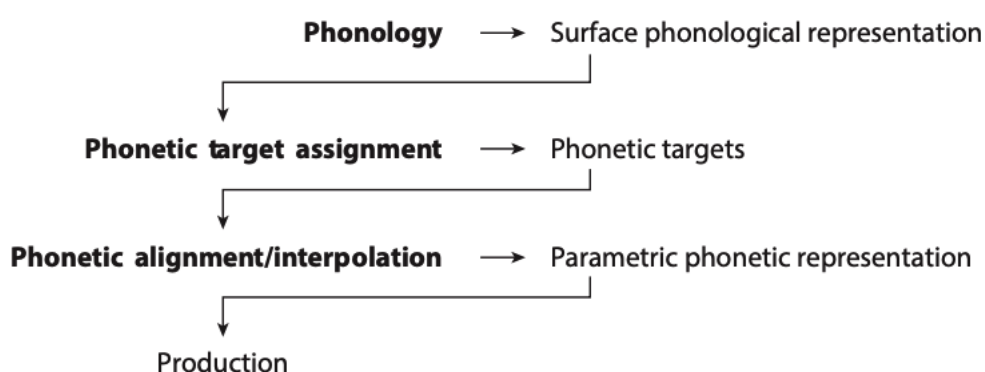
## RESEARCH METHOD

This study uses a qualitative research by conducting a descriptive analysis of the latest research related to the phonological effect on non-native phonetic changes. Based on (Kim et al., 2017) descriptive research method is research conducted to describe, or describe an existing phenomenon by using scientific procedures to answer the actual problem.

## RESULT AND DISCUSSION

In order to discuss phonological influences on these phonetic change coherently, the researcher assume a phonology and phonetics that are modularly separate and qualitatively different in their representational and computational details. The result of this experiment demonstrate that performance on non-native phonetic was multiple perception. (Flemming, 2001) approach could be described as “phonology all the way down,” as he proposes that the phonological grammar computes over and outputs specific formant targets. A very different kind of “phonology all the way down” approach comes from (Hale & Reiss, 2008). In their theoretical framework, phonology does not operate over phonetic-like representations, but they posit that the only domain of knowledge that can meaningfully vary and change is phonological. In fact, they specifically argue that there is no domain of phonetic knowledge (representation and computation) at all.

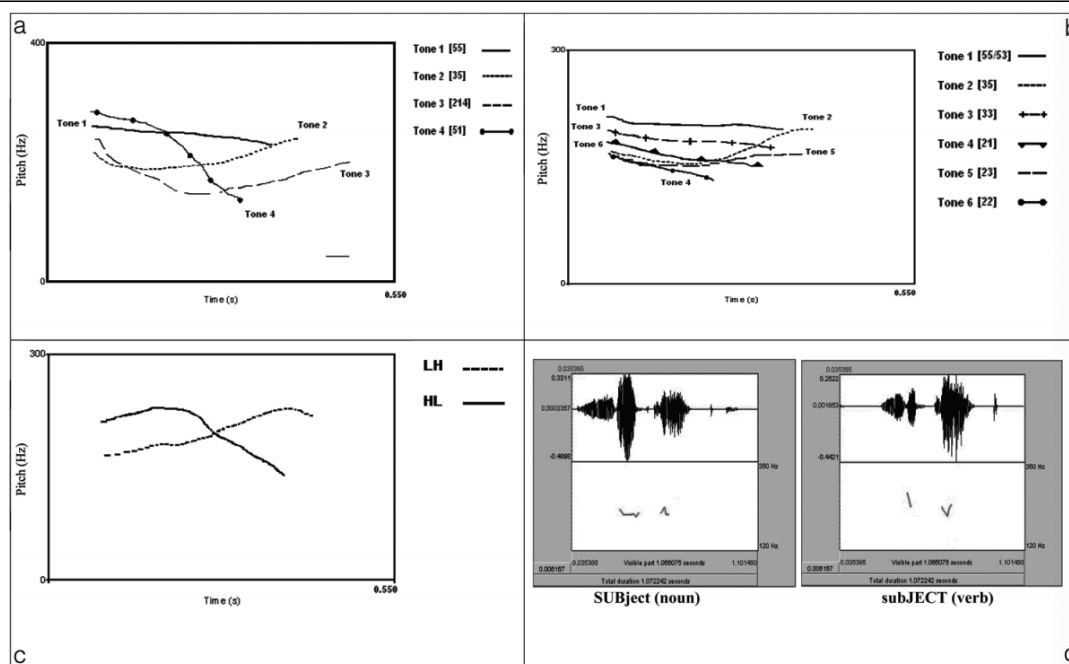
In order that account for the phenomena summarized from in this review, the researcher simultaneously appeal to coarse-grained and contrastive phonological representations that define broader natural classes, and to continuous and gradient phonetic targets and representations.



**Figure 1. Diagram of the modular feed-forward system. Each bolded node represent a domain of knowledge that might be subject to change or cross-dialectical variation.**

Studies also suggest that some non-native speaker such as Mandarin tones are not all perceived and produced equally well by non-native listeners, and that pattern seems to be language-independently. Some pairs of Mandarin tones are more easily confused than others, apparently because of the similarities in their pitch onset and offset values and in their contour shapes (Zhang & Roberts, 2019). This implies that listeners’ sensitivity to universal, gradient phonetic information was at work during perception, rather than language specific, contrastive phonological information. However, it is not known whether the same perceptual patterns also occur for non-native listeners of other tone languages, since (Kraus, 2015) did not examine discrimination of these tone pairs in their Cantonese listeners. To the extent that phonetic similarities of tone contours constrain non-native tone perception, this should apply to non-native listeners of tone as well as non-tone languages. If the resulting patterns are found irrespective of listeners’ native languages, this would imply that perception of tone contrasts is influenced by the tones’ phonetic properties in a language-universal way. However, if there are discrepancies in performance patterns among different language groups, this would imply that the use of tonality in listeners’ native phonological systems constrains perception.

English is a non-tone language, because it uses neither lexical tones nor pitch accents. It has been characterized as a “stress-accent language” (Glewwe, 2019). Its use of distinctive pitch at the word level is very restricted. Even for lexical stress, for example, pitch is just one of several acoustic components (along with loudness, duration, and vowel realization/reduction) used to indicate stress in English homophonous pairs, such as SUBject (noun) and subJECT (verb) (Pennington & Ellis, 2000). below is some example of the pitch pattern of the Mandarin (a: top left) and of the Hong Kong Cantonese (b: top right).



**Figure 2. The pitch pattern of the Mandarin (a: top left) and of the Hong Kong Cantonese (b: top right).**

The basic assumption that conditioned phonetic change is driven by phonetic listener misapprehension runs through almost all contemporary thinking on phonetic change, especially the “phonetics most of the way up” models discussed above. It is central to the prediction of Exemplar Theory that frequent words will lead to sound change, given that they pass through the production–perception feedback loop more often (Wedel, 2007). Listener misapprehension is involved in all three mechanisms of change in Evolutionary Phonology (Blevins, 2004). Almost all of the chapters in a collection on phonologization (Yu & Zellou, 2019) either incorporate Ohalian misapprehension into their models of phonologization or at least claim compatibility of their results with that framework.<sup>1</sup> Even the Life Cycle of Phonological Change (De Lacy, 2007), which takes a very phonological and modular approach to sound change, incorporates misapprehension of this sort into its Phase I: “when some physical or physiological phenomenon gives rise to a new cognitively controlled pattern of phonetic implementation through a coordination failure.”

## CONCLUSION

Based on the discussion section and the data analyzed it can be conclude that non-native speaker the non-native of English language still have problems in appropriate English articulation. Considering, to the significance of phonetic accuracy in expressing spoken message, the non-native speaker must pay deep attention to this matters and fix them by encouraging, engaging and involving them any time to practice.

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