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## INTERACTION OF GLIDE INSERTION RULES ACTIVE IN POLISH IN SEQUENCES OF TWO HIGH VOWELS IN ENGLISH

This article addresses the pronunciation errors made by English-speaking Poles in the English sequences of two high vowels, such as *doing* [du:ɪŋ] and *going* [gəʊɪŋ]. The discussion presented here is aimed to demonstrate that the mispronunciation of such words could be potentially targeted by different rules. It has been assumed that Polish learners of English transfer their native phonological rules of glide insertion taking place inside words into English. The analysis of pronunciation errors is carried out in the general spirit of Standard Generative Phonology and of the Optimality Theory.

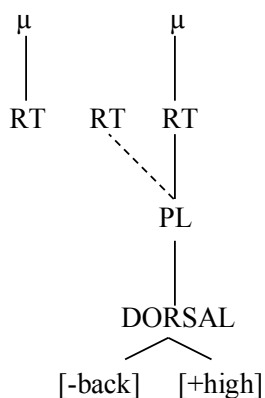
Pronunciation errors resulting from the differences in the phonological systems of Polish and English have received much attention in the literature over the past few years. Nevertheless, there still remain some issues that require to be addressed in a more exhaustive manner. In an earlier paper (Dziczek-Karlikowska 2011), I addressed, among others, the pronunciation errors made by Poles in the English centring diphthongs [ɪə] and [ʊə]. The purpose of that article was to demonstrate that mispronunciations in [ɪə] and [ʊə] are a straightforward effect of the Glide Insertion Rule in *iV* and *uV* strings, that is, of the phonological rule active in Polish in correspondent environments. Additionally, there was shown that while the adopted framework of Standard Optimality Theory can generate *i*-Insertion in words such as *fierce*, *w*-Insertion in *influence* or *poor* requires the modification of standard OT, which is done by introducing a two-level evaluation.

In this paper, I concentrate around the English VV configurations, where both vowels are high and where Poles are assumed to find difficulty rendering the correct RP pronunciation. Here, I assume that the problem in pronouncing such sequences correctly, similarly to the centring diphthongs [ɪə] and [ʊə], is due to interference from glide insertion operating in the same phonological environments in Polish. To prove the relatedness between the phonological systems in both languages, a recourse is made to the spelling errors made by the Polish learners of English discussed in Dziczek-Karlikowska (2007). The present analysis of VV configurations is done simultaneously in the rule-based Standard Generative

Phonology and in the constraint-based Optimality Theory. The theoretical information provided in this paper includes the inventory of consonants and vowels taken from the standard sources such as Reszkiewicz (1984), Rubach (1984), Gimson (2001), Wells (2000) and Ladefoged (1993).

To pursue the analysis, let us first look at a selection of phonological rules and constraints, which operate in Polish and which play a role in explaining the intricacies of errors examined in this article. The rules use the traditional feature framework of Standard Generative Phonology deriving from *The Sound Pattern of English* (Chomsky and Halle 1968; SPE, hereafter) and they are given in (1).

- (1) a. Regressive *i*-Spreading: //Vi// → [Vji]



- b. Nasal Assimilation

A nasal assimilates to the point of articulation of the following stop or affricate.

- c. Final Devoicing

[+obstr] → [- voice] / \_ #

- d. Progressive Gliding

i → j / V \_

The standard OT provided by Prince and Smolensky (1993) is used here in its modified version following, among others, Kiparsky (1997, 2000) and Rubach (1997, 2000, 2003). This modified theory is called Derivational Optimality Theory (DOT hereafter) and the relevant constraints are given in (2).

- (2) a. \*ONSET[w]

The glide [w] is prohibited in the onset.

- b. IDENT<sub>σ</sub>

The syllable node on the input segment must be preserved on the correspondent of that segment in the output.

- c. ONSET  
Syllables must have onsets.
- d. DEP<sub>Seg</sub>  
Do not insert a segment.
- e. MAX<sub>μ</sub>  
Every mora of the input has a correspondent in the output.

When looking at *doing*, it appears that the word could be mispronounced as [du.jɪŋk] or [du.wɪŋk]. Obviously, both pronunciations are erroneous, as both contain an inserted glide and insertion inside words is not attested in Received Pronunciation. In Polish, the *ui* sequence in the word *hinduizm* ‘hinduism’ is mispronounced by the learners as *hindujizm* [ujɪ], and the *iu* sequence in *triumf* ‘triumph’ is mispronounced as *trijumf* [ɪju].

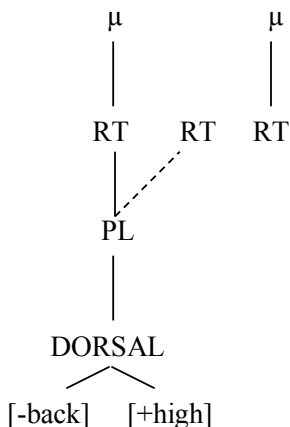
Before making predictions concerning the possible source of the mispronunciation in *doing* and *going*, let us refer to Dziczek-Karlikowska (2007: 182-185) where the analyses of the spelling errors of the words *hinduizm* ‘hinduism’ misspelled by the Polish learners as *hindujizm* and *triumf* ‘triumph’ misspelled as *trijumf* are given.

Crucial in the analysis of *hinduizm* ‘hinduism’ is the assumption that the underlying representation (UR, hereafter) for the suffix *-izm* has two allomorphs, i.e. there are two URs. This is due to the existence of contrasts such as *lenin+izm* ‘Leninism’ and *ras+izm* ‘racism’ versus *terror+yzm* ‘terrorism’ and *romant+yzm* ‘romanticism’. *Hinduizm* is represented as //u+izm//, with an //i// rather than an //w// (unless we assume *i* → *i* / V<sub>-</sub>).

Therefore, //i// must be prespecified as having a sigma, or else it will glide to [-ujzm]. On this view, the error is a consequence of the learner’s simplification of the UR by leaving out the prespecification. Since such prespecification is fully arbitrary, this learner’s grammar has been regularized by pushing out an exceptional marking from the UR.

As far as the *CiV* context is concerned, Polish exhibits gliding, which is not what we find in *trijumf* ‘triumph’, where the glide [j] is inserted instead. Here, the high vowel /i/ does not glide but it spawns a segment surfacing as [j]. The features of the high vowel are copied to a glide by the Progressive Spreading Rule stated in (3).

## (3) Progressive Spreading: //iV// → [ijV]

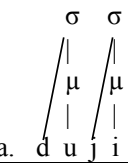
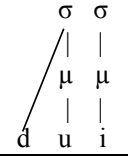
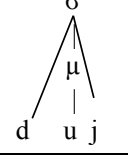



Let us now look at the erroneous spelling of *hinduizjm* [ujj] for *hinduizm* ‘hinduism’ and *trijumf* [iju] for *triumf* ‘triumph,’ which show *j*-Insertion in *ui* and *iu* configurations, from the point of view of OT. Notably, combinations of two high vowels are commonplace in Polish and, as shown in Dziczek-Karlikowska (2007: 182-185), most pupils have problems with spelling them correctly. The question to be asked now is why [j] and not [w] is inserted in *ui* and *iu* strings. Note that postulating [w] in the onset position is unacceptable under the constraint \*ONSET[w]. DOT gives a clear justification of the victory of [j] over [w]. Namely, at Level 1 \*ONSET[w] is high-ranked, so [w] cannot be inserted. Therefore, [j] is inserted. At Level 2, the syllable has an onset, so nothing happens. The evaluation is presented in (4). The vowel //i// is prespecified with the sigma node to block gliding.

As can be seen from the above tableau, the candidate with *w*-Insertion (4d) is suboptimal at Level 1, where it is eliminated by the high ranked \*ONSET[w]. Candidate (4c) is excluded by the highest-ranked IDENT<sub>σ</sub>. Candidate (4b) has an onsetless syllable, so it violates ONSET. Candidate (4a) violates DEP<sub>seg</sub>, but this constraint is low-ranked. Thus, candidate (4a) is the winner. Since the onset position is filled by [j] at Level 1 (see candidate (4a)), nothing happens at Level 2, so the tableau for that level is omitted.

Both examples point to the fact that *j*-Insertion takes priority over *w*-Insertion in the native system of Poles. As *j*-Insertion applies regularly, it is assumed that Polish speakers should transfer it to the pronunciation of *doing* and produce [du.jɨŋk] rather than [du.wɨŋk]. The derivation of [du.jɨŋk] is illustrated in (5).

$\sigma$   
 |  
 $\mu \mu$   
 | |  
 (4) Level 1: // u i // *hinduizm*

	IDENT <sub>σ</sub>	*ONSET[w]	ONSET	DEP <sub>Seg</sub>
$\Rightarrow$ a. 				*
b. 			*!	
c. 	*!			
d. 		*!		*

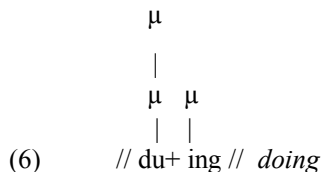
(5) UR //du+ɪŋg// *doing*

du+jɪŋg Regressive *i*-Spreading

du+jɪŋg Nasal Assimilation

du+jɪŋk Final Devoicing

An OT account for *doing* [du+jɪŋk] is given in the tableau in (6).



	IDENT $\sigma$	*ONSET[w]	ONSET	DEP <sub>Seg</sub>	MAX $\mu$
a. du.wiŋk		*!		*	
b. du.iŋk			*!		
c. dujŋk	*!				*
d. dwiŋk		*			*
⇒ e. du.jiŋk				*	

Candidate (6c) violates the high-ranked IDENT $\sigma$  and so is eliminated from further evaluation. Candidates (6a) and (6d) are ruled out by \*ONSET[w], which is ranked high. ONSET ranked above DEP<sub>Seg</sub> guarantees that candidate (6e), in spite of its violation of DEP<sub>Seg</sub>, is the winner, as its contender (6b) violates the high-ranked ONSET.

However, the above formulated assumption seems to be contradicted by the word *going*, which could be mispronounced as [gɔ.jiŋk] if *go* is [gɔ] or as [gɔ.wiŋk] if *go* is [gɔw]. In the first case, the learners could possibly analyse the word *go* as //gɔing// creating the context for *j-Insertion*. In the second case, the learners could possibly analyse *go* as //gɔwing//, which suggests that the glide does not come from insertion. In [gɔ.wiŋk], *w-Insertion* is incorrect because there is no /u/ to trigger it. Rather, the [w] in [gɔ.wiŋk] comes from the underlying representation. But then, how is it analysed by the Polish learner? Probably, the derivation in Standard Generative Phonology is as in (7).

- (7) UR // gɔu+ing // *going*  
       gɔw+ing     Progressive Gliding  
       gɔw+iŋg     Nasal Assimilation  
       gɔw+iŋk     Final Devoicing

In OT, the analysis of [gɔ.wɨŋk] proceeds as shown in (8).

$$(8) \quad \begin{array}{c} \mu \mu \mu \\ | | | \\ //gɔu+ing // \textit{going} \end{array}$$

	ONSET	DEP <sub>Seg</sub>	MAX <sub>μ</sub>
⇒ a. gɔ.wɨŋk			*
b. gɔ.ujŋk	*!		
c. gɔ.wujŋk		*	
d. gɔ.wu.jiŋk		**	

Candidate (8b) is excluded by the high-ranked ONSET, whereas (8c) and (8d) are eliminated by DEP<sub>Seg</sub>. Candidate (8a) wins in this evaluation because the only violation it incurs is that of the low-ranked MAX<sub>μ</sub>.

To sum up, this article has addressed the pronunciation errors made by Poles in English *ui* and *iu* strings. It has been argued that rendering *doing* [duwɨŋ] as [dujɨŋ] and *going* [gɔuɨŋ] as [gɔwɨŋk] may be due to the interaction of different rules of insertion. The analysis conducted in two frameworks, that is, Standard Generative Phonology and Optimality Theory, has shown that *j*-Insertion and *w*-Insertion operating in the same phonological combinations in Polish, affect the pronunciation of English words to a large extent.

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