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RESEARCH PAPER

Analysis of Inter-language Syllabification of English by Pakistani Hindko- English Speakers

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ABSTRACT

Hindko is an Indo-Aryan language spoken in the Hazara and Azad Kashmir regions. The current research aims to analyze the interlanguage syllabification of English by Pakistani-Hindko speakers of English under optimality theory (Prince & Smolensky, 1993). The current study argues that Hindko English speakers syllabify the English syllables influenced by L1. The study uses the elicitation method to collect the data. The syllabification was analyzed under the optimality framework. The current study analyses the markedness and alignment constraints that predict the syllabification of stop clusters at word medial position by Hindko English speakers. The study finds that Hindko-English syllabification can be correctly predicted through parsing and phonological processes like epenthesis and ambisyllabicity. Moreover, the study reveals that in Hindko, these processes are conditioned by markedness and faithfulness constraints. In addition, the study concludes that in Hindko-English, cyclic CON, EVAL and local encoding are the best ways to study the phonological processes. The study recommends a further, in-depth investigation of phonological processes like epenthesis based on spectrographic analysis.

Keywords	Ambisyllabicity, Epenthesis, Hindko-English, Interlanguage, Markedness Constraints

Introduction

The transforms of L1 are the most important factor in identifying learner errors in second language learning. Kenworthy (1987) discusses the idea that L1 language transfer is a very significant factor in identifying the first language learning error. Selinker (1982) uses the term "interlanguage" to refer to the unique transfer of L2 speakers. Major (1994) states that learners' errors in the acquisition of L2 are due to the shift of first-language syntactic and morphological features. Because of the shift of Hindko syllable structures to their English phonology during the learning or acquisition process, many Pakistani English speakers of Hindko mispronounce English words with structures like VCV or CVC in the word's medial syllable position. Keeping the phenomenon in mind, in the current study I am presenting the significant features of Hindko English phonology in terms of OT and how interlanguage syllabification can be generated under HAEPS by using OT. Moreover, the study investigates the markedness, faithfulness, and alignment constraints that predict the syllabification in Hindko-English. The study also sheds light on phonological phenomena like epenthesis and ambisyllabicity at the phrase level, which can be found in Hindko-English.

Literature Review

Haroon and Khan (2014) state that Hindko belongs to the Indo-Aryan language family and has many dialects. According to Lothers (2010), Hindko dialects are defined by region, with Hazara being the main dialect. Haroon and Sohail (2011) state that the majority of Hindko speakers live in the Hazara region. Haroon and Khan (2014) state that the Hindko language has not been documented and is in the process of being documented. The region is rich in linguistic diversity, with languages like Urdu and Pashto. English affects Hindko morphologically and phonologically, and speakers of Hindko adopt the morphological and phonological features of dominant languages.

Ellis and Barkhuizen (2005) describe that the main purpose of second language acquisition is to describe the interlanguage learning and major processes involved in the acquisition of a second language. Selinker (2008) describes that learning is a process developed through practise and habit formation. Lado (1953) believes that in the acquisition of L2, interferences with L1 are to identify the errors committed by learners. Tarone (1987) uses the term "interlanguage phonology" to refer to the transfer of L1 features into the structures of L2, and she discusses the uses of L1 phonological features that affect the acquisition of L2 phonological structures. Loup and Weinburger (1987) describe that interlanguage syllabification depends on the syllable structure of L1 and L2, and the contrast in syllable structure of both the languages will affect the acquisition of syllable structures. Herschensohn (2007) states that languages differ in the way they arrange their sounds into syllables, and learners of L2 have to learn syllable structure to master these languages. Cook (2001) proposes three stages that every learner has to go through while acquiring a new language system: (i) recognition of sounds, (ii) transfer of linguistic features, and (iii) the approximative stage, where learners try to construct new sentences. Blevins (1996) says a syllable is the phonological unit organised into small segments. Danmu (2008) states that a syllable consists of an onset, nucleus, and coda. Lodge (2009) also states that a syllable consists of an onset, nucleus, and coda. Ellison (1994) explains how Optimality Theory can be used to analyse the syllable structure shift from L1 to L2 by ranking constraints such as Parsing, Onset, NoCoda, ComCoda, and Peak. C. Tesar (1995) also discusses the OT approach to analyse the syllable structure and errors in language learning. However, Hammond's (1995) OT approach and constraint ranking are significant enough to study the phenomenon in detail. 1995), the OT approach, and constraint ranking are significant enough to study the phenomenon in detail.

Material and Methods

The nature of the study is qualitative and descriptive. The study uses the elicitation method to collect the data. The study uses the purposive sampling technique to sort out the population of the study and collect the data from the samples. The sampling was done based on the L1. All the samples were Hindko English speakers. A total of 10 Hindko English speakers were included in this study for the collection of the data. To collect interlanguage syllabification data, each participant was given a picture to describe in English.The participants in the study were from the Neelum Valley and Hazara regions. The study's participants, six men and four women, were all graduates who had completed their education. All the participants were English graduates who could speak English. To maintain the study's ethics, participants are assigned an alphabetical code (S, T, U, P, Q, R, M, N, O, and G) to represent their identity while remaining anonymous. All the participants gave written consent before their recordings. Participants were given a pictorial story, and they were asked to create their own story and describe it verbally in

English. While they were telling the story, a sound recorder was used to record their verbal story. Each participant was given the same pictorial story to tell. The recordings were made in a soundproof room free from external disturbance. The data was transcribed and categorised to achieve the objectives of the study.

Table 1
Participants' demographic data

Speaker	Gender	Region	Education	Languages	Mother Language
S	Male	Neelum AJK	MA	Urdu, Eng	Hindko
T	Male	Neelum AJK	MA	Urdu, Eng	Hindko
U	Female	Neelum AJK	MA	Urdu, Eng	Hindko
P	Male	Neelum AJK	MA	Urdu, Eng	Hindko
Q	Female	Neelum AJK	MA	Urdu, Eng	Hindko
R	Male	Peshawar	MA	Urdu, Eng	Hindko
M	Female	Peshawar	MA	Urdu, Eng	Hindko
N	Male	Peshawar	MA	Urdu, Eng	Hindko
O	Female	Abbotabad	MA	Urdu, Eng	Hindko
G	Male	Abbotabad	MA	Urdu, Eng	Hindko

The above table shows details about the speakers included in the study. All ten speakers were educated, with master's degrees. All the speakers were multilingual and had exposure to English. Speakers were also well acquainted with Hindko as their mother tongue was Hindko. Four were female, and six speakers were male. The speakers were sampled from three dialects of Hindko, including the Neelumi dialect and the Hazara dialect, spoken in the Peshawar and Abbotabad regions.

IL Phonology of Hindko English Speakers

Mir (2012) states that Hindko has distinctive phonological features of voiceless stops as phonemes : aspirated stops /ph,th,kh/, fortis voiceless stops /p*, t*, k*/ and lenis voiceless Hindko stops /p,t,k/. Mir (2012) also states that in Hindko voiced stops are also found as separate phonemes. In Hindko, aspiration and voicing are phonemic features, unlike English, aspiration is an allophonic feature. Many Hindko speakers do not aspirate the English stops at word initial position because in Hindko aspiration is a phonemic feature not the allophonic feature e.g. Hindko speakers pronounce /pʰɛn/ as /pɛn/. Moreover, in Hindko syllable structure also has some salient features like in Hindko CC clusters are not allowed or very rare. When speaking English word with CC clusters, Hindko English speakers tend to insert a vowel between two CC clusters as shown below:

(1) School ⟶ /səkuːl/

(2) Scout ⟶ səkaʊt/

Lets analyze how interlanguage phonology of Hindko and English can be obtained in terms of OT.

The following OT constraints shall be considered for analyzing the Hindko English syllabification:

(3) * Complex

No more than on C is to be added to any syllable node

(4) MAX

McCarthy (1995) states that every element of input has a correspondence with the output.

(5) DEP

McCarthy (1995) describes that every element of output has the correspondence with the input.

The constraint ranking will be :

*Complex >> MAX>> DEP

(6) The tableau of / skaʊt/;

/ skaʊt/	***Complex**	**Max**	**DEP**
a. /ska/		*!	
b. /skaʊt/	*!		
➡ c. /sə.kaʊt/			*

In Hindko English * Complex is a higher ranked constraint and on the other hand, * Complex is a lower ranked constraint in English than Max and Dep.

In Hindko English, speakers are unable to pronounce the cluster /sp/ at the onset position,

(7) The tableau of / səp.rɪŋ/

/ sprɪŋ/	***Complex**	**Max**	**DEP**
a. /sprɪ/		*!	
b. /sprɪŋ/	*!		
➡ c. /səp.rɪŋ/			*

The data given in (7) shows that Hindko speakers break the consonant cluster /sp/ at word initial position and insert /ə/ between both the phonemes. This is mainly that in Hindko /s/ and /p/ do not make consonant cluster and this syllable feature affects the pronunciation of the cluster in English.

Hindko speakers neutralized the velar stops, when they occur at the coda position in any syllable, /ph, p*, p/➡/p/ , /th, t*, t/ ➡ /t/, /kh, k*, k/ ➡ /k/ . Hong (1997) proposed the alignment constraints to deal with the coda neutralization issue. We can also use alignment constraints to deal with coda neutralization in Hindko English.

(7) Alignment Left { stiff vocal folds]. A-L (Stiff-VF)

(8) Alignment Left { continuant]. A-L (CONT)

These alignment constraints enforce a segment with the correspondent feature at the syllable initial or onset position.

(9) Ident-IO [F] (McCarthy, 1995)

Corresponding elements in S1 and S2 have identical values for feature [F] means no phonological affiliation.

McCarthy (1995) also describes Ident-IO constraints as;

a. IDENT-IO [SVF] ⟶ ID- [SVF]
b. IDENT-IO [Continuant] ⟶ ID. [Cont]
c. IDENT-IO [Voiced] ⟶ ID- [Voiced]
d. IDENT-IO [Sonorant] ⟶ ID-[sonorant]
e. IDENT-IO. [Lateral] ⟶ ID-[lat]
f. IDENT-IO [place] ⟶ ID-[place]

In Hindko Alignment constraints (8) outrank the Ident-IO constraints (10) as depicted in (11) below:

(11) Pull /Pʰul/

/ pʊl/	**A-L CONT**	**DEP**	**IDENT-IO**
a. /pʰʊt /			*!
b. /pʊl /	*!		
⟶ c. /pʰʊl /		*	

The data given in (11) shows that A-L (Continuant) is a higher ranked constraint which outranked the lower ranked constraints DEP and IDENT_IO. /pul/ violate the higher ranked constraints A-L and DEP and it is not optimal for Hindko speakers of English. However, in Hindko English /pʰʊl / is optimal constraint because it outranked the DEP and IDENT_IO in interlanguage Hindko-English context.

(12) Nisan ⟶ /nɪʃən/

/ nɪs(ə)n/	**A-L CONT**	**DEP**	**IDENT-IO**
a. / nɪsət /			*!
b. / nɪsəna /	*!		*
⟶ c. / nɪʃən /		*	

The data given in (12) shows that A-L (Continuant) is a higher ranked constraint which outranked the lower ranked constraints DEP and IDENT_IO. /pul/ violate the higher ranked constraints A-L and DEP and it is not optimal for Hindko speakers of English. However, in Hindko English / nɪʃən / is optimal constraint because it outranked the DEP and IDENT_IO in interlanguage Hindko-English context.

Hindko speakers of English do not follow the sonority sequence principle which states that sonority should be higher at the peak and should decrease towards the edges of the syllable. Hindko speakers nasalized the consonants and because of the nasalization effect sonority sequence principle is disfavored in Hindko English.

(13) Assembly. ⟹ / əsˈŠɛmbli/

/əˈsɛmbli /	SCC	A-L Continuant	ID-Conti	ID-Pl	ID-Lat	ID-Son	ID-VD
a. əs.ɛm.bli	*!	*					
b. əs.ɛ.mbli		*!					
⟹ c. əsˈŠɛmbli			*			*	*
d. əˈlɛmbli			*		*	*	*
e. əˈmɛmbli			*	*		*	*

The data given in (13) shows that candidate (a) and (b) are dropped because they violate the higher ranked constraints SCC and A-L continuant. Candidates (c) is optimal because it maintain the higher ranked constraints SCC and A-L Continuant at the cost of lower ranked constraints ID-Conti,ID-PL,ID-Lat,ID-Son and ID-VD. Candidates (d) and Candidate (e) are also outranked because they violate ID-Conti, ID-PL, ID-Lat, ID-Son and ID-VD.

In Hindko English the phrase / pʊl θruː / is pronounced as / pʰʊl θrÜ /. In Hindko English at the phrase level at the word boundary C is also ambi-syllabified e.g. the phrase 'stop it' is pronounced as / stɒp pɪt/.

(14)

/ stɒp ɪt /	• COMP	SCC	RT-PrW	Cal	VCE	ID-VD	DEP	ID-VF
a. stɒp pɪt	*!	*	*	*				
b. səstɒp pɪt		*!		*			*	*
⟹ c. sə.tɒp pɪt						*	*	*
d. sə.tɒb pɪt		*!			*	*	*	*
e. sə.tɒ.p ɪt i			*!		*	*	*	*
f. sə.tɒ.b ɪt i				*!	*	*	*	*

Data shown in the above table (14) shows that in Hindko English DEP is ranked a lower order constraint than *COMP and SCC and RT-PrW. The candidates (a) & (b) violate higher ranked constraints *COMP and SCC and become extinct. However the candidate (c) maintain the higher ranked constraints at the cost of lower ranked constraints like ID-VD, DEP and ID-VF and becomes optimal.

Hammond (1997) discusses that in the implementation of optimality based analysis of syllabification, the greatest problem that arises is the possibility of infinite numbers of candidates. The problem arises even if there is no phonological problem or process in the output. This problem can be solved by implementing three rules i) syllabification is done through parsing, ii) syllabification is encoded locally , iii) a cyclic CON-EVAL loop is applied for constraint ranking.

Hindko Accented English Generator

For the Hindko-accented generator, In the current study, I use the concept of finite state automata proposed by Hammond (1997) developed from the concept of local encoding. The generator not only syllabify the input but it also modify them into suitable output segments. For the phrase /stop it/, the following schemata will appear:

(15) The syllable position grid in Hindko-English

S	**t**	**ɒ**	**p**	**#**	**ɪ**	**t**
O	o	o	o	o	o	o
N	n	n	n	n	n	n
Nn	nn	nn	nn	nn	nn	nn
C	c	c	c	c	c	c
Co	co	co	co	co	co	co
On	on	on	on	on	on	on
U	u	u	u	u	u	u

The above represents the syllable position grid. The table shows that the phrase 'stop it' has two syllables 'CCVC and VC. the onset of the first syllable has complex CC cluster consists of /s/ and /t/ and it also has coda /p/. The second syllable is VC. Both the syllables are closed syllables.

(16) The syllable position grid at syllable boundary

s	**t**	**ɒ**	**p**	**#**	**ɪ**	**t**
s	**t**	**ɒ**	**p**	**#**	**ɪ**	**t**
	t		P			**t**
	d		b			d
	n		m			n
sw	tw		pw			**t** w

The above table (16) represents the syllable position grid. The above table shows the possible onset clusters with the /s/ and coda position consonants occurring with the vowel.

(17)

*NUC, MARGIN V and PEAK?C

s	**t**	**ɒ**	**p**	**#**	**ɪ**	**t**
o	o	o	o	o	o	o
n	n	n	n	n	n	n
nn	nn	nn	nn	nn	nn	nn
c	c	c	c	c	c	c
co	co	co	co	co	co	co
on	on	on	on	on	on	on
u	u	u	u	u	u	u

(18) Onset Positions in the Phrase

s	**t**	**ɒ**	**p**	**#**	**ɪ**	**t**
on	on					on

Table 18: Onset positions in the Phrase /stop it/

The above table (18) shows the onset positions in the syllable /st/ belong to onset of the first syllable and in the second syllable /t/ is the coda of the syllable.

Conclusion

The current study analyses the interlanguage generation of the syllables in Hindko English under OT-based analysis. The study adopted the Hammond (1997) OT-based syllabification approach and parsed the syllables produced by Hindko-English speakers. The study finds that in Hindko English, phonological phenomena like epenthesis, deletion, or consonant change can be predicted through OT constraints, and these processes can be analyzed based on the markedness and faithfulness constraints encoded in the locally used Hindko accented English. In Hindko-English, cyclic CON EVAL and local encoding are the best ways to study the phonological processes. The study proposes two sets of templates in Hindko to describe the phonological phenomena of ambisyllabicity and epenthesis: one for ONC+E+UP position, and the other for the output form for each segment.

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