

# **Epenthesis in Pakistani Urduized English: Optimality Analysis**

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## **Abstract**

*The current research paper describes the process of epenthesis in Pakistani Urduized English. The main purpose of the study is to discuss the English borrowed words and their usage in the spoken Urdu version in Pakistan within the framework of Optimality Theory (Prince and Smolensky, 1993). The study discusses the processes of phoneme alteration in Urduized English and how the Urdu speakers substitute and break the consonant cluster in communication. The issues of phoneme deletion, phoneme alternation, voicing, and devoicing can be resolved by applying Optimality Theory and ranking of constraints. In the paper, we argue that adoption of loan words in Urduized English leads to certain phonological processes like epenthesis, which can be described within OT. Moreover, the study discusses the reasons for phonological addition or deletion within the borrowed lexical item. The study finds in Pakistani English, epenthesis is widely used processes on certain CC clusters at onset and coda positions of the syllables. In addition, the epenthesis process is conditioned to certain markedness constraints in Pakistani English. The study recommends a spectrographic analysis to find the spectrographic features on epenthesis.*

**Keywords:** Epenthesis , Urduized English, constraints , ranking of constraints.

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## **1. Introduction**

In Pakistan, Urdu is spoken as a national language and is used as an official language. Abbas (2002) traces the origin of Urdu as an Indo-Aryan language, having roots in the Indo-European family. Urdu was first spoken by the soldiers of Shahjahn in the 17<sup>th</sup> century. Rehman (2004) and Grimes (2000) consider Urdu the second most spoken language in the world. Humayoun (2006) discusses the Urdu language morphology from a functional perspective and states that Urdu morphology can be used in functional morphology. Mangrio (2016) discusses the loan words in Urdu and describes the morphological adaptation of those loan words in the language. Khan (2020) discusses the loanwords of Urdu in Pakistani English from a morphological perspective. Haider and Manan (2021) discuss English in Pakistan and describe phonological differences between L1 and English. However, no significant work has been carried out to describe the process of epenthesis in Urdu on the loan words of English within the framework of Optimality Theory. In Pakistani English, Urdu speakers used certain clusters at the onset position with the influence of L1. No significant research has been carried out to explore these clusters in Pakistani Urduized English. The current study aims to fill this gap and briefly analyze the process of epenthesis on the loan words of English into the Urdu language spoken in Pakistan.

## **2. Literature review**

English is widely used as a language of communication in Pakistan. To maintain successful communication and bridge the vocabulary gap between the languages, regional languages in Pakistan borrow lexical items from English. Campbell (2004) states that the restructuring of loanword morphology and phonology depends on the morphology and phonology of the recipient language. Nordquist (2017) describes a consonant cluster (CC) as a group of two consonant sounds that come before a peak called the onset, between vowels or after a peak called the coda. According to Nordquist (2017), more than 46 CC items can occur in the English language, ranging from a variety of consonants. In English, Pearce (2001) discusses how more than nine (CCC) clusters can come together at an initial position.

Consonant splitting is a process in which consonant clusters are shortened through a phonological process that is applied to diphthong splitting (Selkirk, 1990). Keer (1999) states that epenthesis is basically a process of segment fission. According to Kremer (2008), epenthesis is a process of splitting. Picard (2003) discusses how splitting often refers to

possible changes in the output. Davidson (2003) describes the process of epenthesis with the help of gestural analysis, and she states that epenthesis takes place at two levels. The first level is the lexical level, and the second level is the epenthetic schwa level. Moreover, the constraints like MAX prohibit the deletion of segments in the output. McCarthy & Prince (1995) state that DEP-C deals with the insertion or addition of any segment within the splitting theory.

Crystal (1985) describes borrowing as a term used to refer to the lexical items taken from one language to another and is commonly known as loanwords. He also states that linguistic borrowing is used to refer to the adopted or adapted forms of a language and that these items are used with some modification. OT is a linguistic tool of phonology used to solve the syllable structure problems of words. Prince and Smolensky (1993) introduced the optimality theory to describe the structure of words and syllable typology of a language, but later it became effective in all fields of linguistics. Gussenhoven and Haikes (1998) state that optimality theory discusses the universal set of constraints and can be ranked based on language-specific rules. In addition, Prince and Smolensky (1993) came up with the idea of CON. It describes the substantive constraints which can be built based on language grammar and they also state that CON is not a grammar itself but linguistic features of input and output candidates. Prince & Smolensky (2004) describe how OT was developed to deal with phonological problems, abandoning grammatical issues. McCarthy and Prince (1995) discuss that OT is not just confined to the phonology of a language but also deals with the morphology, syntactic, and grammatical aspects. Ball (2010) also discusses the wide usage of OT in linguistics and for studying languages.

**Table 1: OT analysis of input candidate and constraint ranking**

<i>/input/</i>	<b>Constraint 1</b>	<b>Constraint 2</b>	<b>Constraint 3</b>
<b>a.Candidate 'a'</b>	*!	*	*
<b>b.Candidate 'b'</b>		*!	
<b>c □Candidate 'c'</b>			*

### **3. Research Methodology**

The nature of the research is theoretical. The researcher used the following method for the collection of the data.

#### **3.1. Field Observation Technique for data collection**

Blaike (1981) states that in cross-language research, the resources of data collection should be natural. Therefore, in the current study, the researcher used the selected stimuli list of English loanwords for the targeted phonological process in Urdu. The stimuli were large enough to yield significant results and investigate the phenomenon under investigation. The stimulus consists of 50 English words. The stimuli list was selected based on the most frequently used lexical items in Urdu. The stimuli consisted of di-syllabic words having /s/ clusters at the onset position and /l/ clusters at the coda position. The native speakers of Urdu were provided with a list of stimuli. The speakers were provided a list to pronounce the stimulus without repeating it in 05 minutes without any external interruption. A micro-phone recorder was used to record the pronunciation of speakers. A total of 10 speakers of Urdu were recorded.

#### **3.2 Data Analysis Technique**

The first step was to transcribe the recorded list of loan words into IPA transcription of Cambridge English. The researcher applied phonetic transcription to achieve the desired results. After documenting and transcribing the data, the researcher applied the optimality theory for the analysis of the data to identify the constraints and ranked the markedness constraints on epenthesis. Optimality theory (OT) is used to study the phonological process of epenthesis in English loanwords in Urdu. The OT analysis was used to identify and rank the constraints.

### **4. Research Findings and Discussion**

#### **4.1. Insertion of vowel at the beginning of words**

Compbell (1998) describes epenthesis as a kind of phonological process in which a vowel is inserted at the beginning of a word. The following are English loanwords used frequently in Urdu, and at the beginning of the words, a front short vowel is inserted by the Urdu speakers:

**Table 2. insertion of vowel at the word beginning in Urduized English**

English Word	CV Structure	Gloss	Urdu Version
sku:l	CCVC	place of education	ɪsku:l
spi:d	CCVC	pace	ɪspi:d
'steɪf(ə)n	CCVVCVC	bus stop or rail	'ɪsteɪf(ə)n
sprɪŋ	CCCVC	elastic object	ɪsprɪŋ
'spɛʃ(ə)l	CCVCVC	particular	ɪ'spɛʃ(ə)l

**Table 3. OT Analysis of the loanword /sku:l/ in Urdu**

sku:l	*COMPLEX-O	DEP-IO	*CODA	CONTIGUITY
a. sku:l	*!		*	
b. → ɪsku:l		*!	**	
c. sikul		*!	*	*

the above table 3 shows that in Urdu language, the loanword / sku:l/ is used as / ɪsku:l/. The representation of the word shows that in Urdu, speakers add ‘ ɪ’ at the beginning of the word. The constraint ranking for the word will be :

COMPLEX-O>> DEP-IO>>\*CODA>>CONTIGUITY

If we look at the OT representation of another loanword in Urdu, the following OT representation will appear:

**Table 4. OT Analysis of the loanword /spirit / in Urdu**

/'spirit /	*COMPLEX-O	DEP-IO	*CODA	CONTIGUITY
a. 'spirit	*!		*	
b. → ɪspirit		*!	**	
c. sipirit	*!	*	*	*

The above table 3 shows that in Urdu language, the loanword / spirit / is used as /ɪspirit /. The representation of the word shows that in Urdu, speakers add ‘ ɪ ’ at the beginning of the word. The constraint ranking for the word will be :

\* COMPLEX-O >> DEP-IO >> \*CODA >> CONTIGUITY

The OT representation of loanword / 'steɪf(ə)n/ in Urdu, the following OT representation will appear:

**Table 5. OT Analysis of the loanword / 'steɪf(ə)n/ in Urdu**

/'steɪf(ə)n/	*COMPLEX-O	DEP-IO	*CODA	CONTIGUITY
a. 'steɪf(ə)n	*!		*	
b. ➔ɪ'steɪf(ə)n		*!	**	
c. sɪteɪf(ə)n	*!		*	*

the above table 3 shows that in Urdu language, the loanword / 'steɪf(ə)n/ is used as /ɪ'steɪf(ə)n /. The representation of the word shows that in Urdu, speakers add ‘ ɪ ’ at the beginning of the word. The constraint ranking for the word will be :

\* COMPLEX-O >> DEP-IO >> \*CODA >> CONTIGUITY

If we observe the OT representation of the word /'skul / in Table 3, it shows that in the input the word /'skul / ‘ was a monosyllabic word CCVVC but when native speakers add a vowel segment at the beginning, it becomes bisyllabic word as /ɪs.kul / VC.CVVC. the OT analysis of the word in table 3 shows that \* complex O is the higher-ranked constraint and its violation is considered fatal in the words a and c. however, in the word b higher-ranked constraint is not violated at the cost of lower ranked constraints i.e. DEP-IO, \*CODA and CONTIGUITY. The ranking will be :

\*Complex-O >> DEP-IO >> \*CODA >> Contiguity.

In the analysis of the above loanwords, it can be observed that native Urdu speakers add a vowel segment at the beginning of the words before /s/, and when they add the vowel, the original consonant cluster at the beginning of the words is broken, e.g. in the word / 'steɪf(ə)n/ ‘st’ is the consonant cluster, but by adding ‘ɪ’ at the beginning of the word before

's', it becomes /ɪs/ /kuɪ/. Table 5 shows that in the input the word / 'steɪf(ə)n/ ' was a bisyllabic word CCVV. CVC but when native speakers add a vowel segment at the beginning, it becomes a trisyllabic word as /ɪ steɪf(ə)n/ VC.CVV.CVC . the OT analysis of the word in table 5 shows that \* complex O is the higher-ranked constraint and its violation is considered fatal in the words a and c. however, in the word b higher-ranked constraint is not violated at the cost of lower ranked constraints i.e. DEP-IO, \*CODA and CONTIGUITY.

The ranking will be:

\*Complex-O>> DEP-IO>>\*CODA>> Contiguity.

If we observe the OT representation of the word // 'spirit / in Table 4, it shows that in the input the word / 'spirit / ' was a bisyllabic word CCV. CVC but when native speakers add a vowel segment at the beginning, it becomes a trisyllabic word as /ɪspirit / VC.CV.CVC . the OT analysis of the word in table 4 shows that \* complex O is the higher-ranked constraint and its violation is considered fatal in the words a and c. however, in the word b higher-ranked constraint is not violated at the cost of lower ranked constraints i.e. DEP-IO, \*CODA and CONTIGUITY. The ranking will be :

\*Complex-O>> DEP-IO>>\*CODA>> Contiguity.

#### **4.2 The process of Anaptyxis at word beginning in Urduized English**

Campbell (1998) states that the process of anaptyxis is also a kind of epenthesis in which a vowel segment is inserted or added between two consonants in a word at the beginning or end of a word. In Urdu, native speakers of the language add or insert the vowel segment at the beginning or end of loanwords of English where syllabic consonants come together, as shown in the following words of English:

**Table 6: Process of Anaptyxis at word beginning in Urduized English**

English Words	CV Structure	Gloss	Urduized English	CV Structure	Addition of
/ska:/	CCV	A mark on skin	/səka:/	CV.CV	ə
/skɪn/	CCVC	Layer of tissue	/səkɪn/	CV.CVC	ə
/snap /	CCVC	Break suddenly	/s ənap /	CV.CVC	ə
/smaɪf/	CCVC	Violent break	/səmaɪf/	CV.CVC	ə
/slat /	CCVC	A thin wood	/s ə lat /	CV.CVC	ə

The following OT representation of loanword /slat / will appear in Urduized English:

**Table 6. OT Analysis of the loanword /səlat / in Urduized English**

/slat /	*COMPLEX-O	DEP-IO	*CODA	CONTIGUITY
a. /slat /	*!		*	
b. → /s ə lat /		*!		
c. /slati /	*!	*		*

The above table 6 shows the representation of the word /slat / in English. In Urduized English /slat / becomes /s ə lat / because Urdu speakers insert a vowel segment / ə / between /s/ and /l/ at the word beginning of loanwords of English while communicating or speaking. In the input, the word has a CCVC structure and the word is monosyllabic. When the Urdu speakers speak the word, the structure CCVC becomes CV.CVC and the output word will be bisyllabic. This is because in Urdu two consonants don't occur together in a word and consonant clusters are splinted with a vowel. The speakers apply the same constraints while speaking English.

Furthermore, the OT representation of the word shows that candidate a violates the higher-ranked constraint complex-O and is not violable. Candidate b becomes optimal because it violates lower-ranked constraints and maintains the higher-ranked constraints. On the other hand, Candidate c also violates higher-ranked constraints and is not optimal.



The following OT representation of loanword /skɪn/ will appear in Urduized English:

**Table 7. OT Analysis of the loanword /s ə kɪn/ in Urduized English**

/ skɪn /	*COMPLEX-O	DEP-IO	*CODA	CONTIGUITY
a. / skɪn /	*!		*	
b. → /s ə kɪn/		*!		
c. / səkɪn/	*!	*		*

The above table 7 shows the representation of the word / skɪn / in English. In Urduized English / skɪn / becomes /s ə kɪn / because Urdu speakers insert a vowel segment / ə / between /s/ and /k/ at the word beginning of loanwords of English while communicating or speaking. In the input, the word has a CCVC structure and the word is monosyllabic. When the Urdu speakers speak the word, the structure CCVC becomes CV.CVC and the output word will be bisyllabic. This is because in Urdu two consonants don't occur together in a word and consonant clusters are splinted with a vowel. The speakers apply the same constraints while speaking English. Furthermore, the OT representation of the word shows that candidate a violates the higher-ranked constraint complex-O and is not violable. Candidate b becomes optimal because it violates lower-ranked constraints and maintains the higher-ranked constraints. On the other hand, Candidate c also violates higher-ranked constraints and is not optimal.

### **4.3 The process of Anaptyxis at word ending in Urduized English**

Campbell (1998) states that the process of anaptyxis is also a kind of epenthesis in which a vowel segment is inserted or added between two consonants in a word at the beginning or end of a word. In Urdu, native speakers of the language add or insert the vowel segment at the ending of loanwords of English where syllabic consonants come together as shown in the following words of English:

**Table 8: Process of Anaptyxis at word beginning in Urduized English**

English Words	CV Structure	Gloss	Urduized English	CV Structure	Addition of
/film/	CVCC	A story	/fil əm/	CVC.VC	ə
/fɔ:m/	CVC	Visible shape	/fɔ:r ə m/	CVC.VC	ə
/fə:m/	CVC	Solid	/fə:r ə m//	CVC. VC	ə
/tʃɑ:m/	CVC	Quality of delight	/tʃɑ:r ə m/	CVC. VC	ə
/spə:m/	CCVC	Semen	/spə:r ə m/	CVC. VC	ə

The following OT representation of loanword /slat / will appear in Urduized English:

**Table 9. OT Analysis of the loanword / fil ə m/ in Urduized English**

/ film /	*Peak CON	*Align-R	DEP-IO	CONTIGUITY
a. / film/	*!			
b. → / fil ə m /			*!	
c. / fil ə mi /		*!	*	*

Table 9 shows the representation of the word / fil m/ in English. In Urduized English / film/ becomes / fil ə m/ because Urdu speakers insert a vowel segment / ə/ between /l/ and /m/ at the word ending position of loanwords of English while communicating or speaking. In the input, the word has a CVCC structure and the word is monosyllabic. When the Urdu speakers speak the word, the structure CVCC becomes CV.CVC and the output word will be bisyllabic. This is because in Urdu two consonants don't occur together in a word and consonant clusters are splinted with a vowel. The speakers apply the same constraints while speaking English.

Furthermore, the OT representation of the word shows that candidate 'a' violates the higher ranked constraint \*Peak-CON and the candidate is not optimal. Candidate b becomes optimal because it violates lower ranked constraints, DEP-IO, and it maintains the higher ranked constraints \*Peak-CON and Align-R. On the other hand, Candidate 'c' also violates higher-ranked constraints and is not optimal. The constraint hierarchy will be :

\*Peak CON>> \*Align R>> DEP-IO>> Contiguity

If we observe the OT representation of the word /tʃɑ:m/, the following OT representation of loanword / tʃɑ:m / will appear in Urduized English:

**Table 10. OT Analysis of the loanword / tʃɑ:r ə m / in Urduized English**

/ tʃɑ:m /	*Peak CON	* Align-R	DEP-IO	CONTIGUITY
a. / tʃɑ:m /	*!		*	
b. → / tʃɑ:r ə m /			**	
c. / tʃɑ: rəmi /	*!	*	*	*

Table 10 shows the representation of the word /tʃɑ: m/ in English. In Urduized English // tʃɑ: m /// becomes / tʃɑ:r ə m // because Urdu speakers insert a vowel segment / ə / between /r/ and /m/ at the word ending position of loanwords while communicating or speaking. In the input, the word has a CVC structure and the word is monosyllabic. When the Urdu speakers speak the word, the structure of CVC becomes CV.CVC and the output word will be bisyllabic. This is because in Urdu two consonants don't occur together in a word and consonant clusters are splinted with a vowel. The speakers apply the same constraints while speaking English.

Furthermore, the OT representation of the word shows that candidate 'a' violates the higher ranked constraint \*Peak-CON and the candidate is not optimal. Candidate b becomes optimal because it violates lower ranked constraints, DEP-IO, and it maintains the higher ranked constraints \*Peak-CON and Align-R. On the other hand, Candidate 'c' also violates higher-ranked constraints and is not optimal. Another thing that can be noticed in the above word, in the word input /r/ is not pronounced but in the output native speakers speak /r/. The constraint hierarchy will be:

\*Peak CON>> \*Align R>> DEP-IO>> Contiguity

If we take another loanword of English, the following OT representation can be observed in Pakistani English:

**Table 11. OT Analysis of the loanword /spə:rə m / in Urduized English**

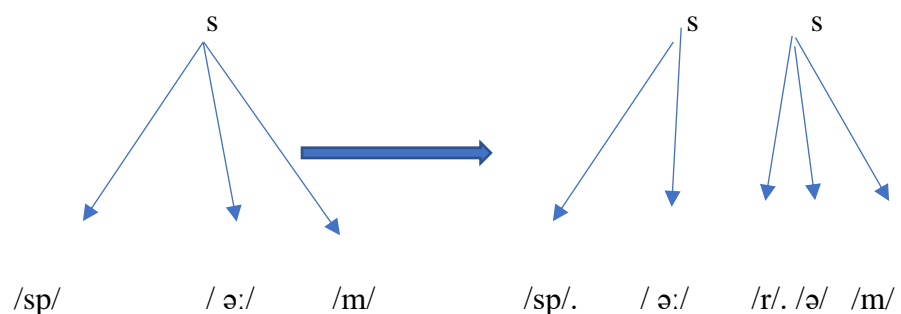
/spə:m /	*Peak CON	* Align-R	DEP-IO	CONTIGUITY
a. /spə:m /	*!		*	
b. → /spə:rə m /			**	
c. /spə:mi /	*!	*	*	*

Table 11 illustrates the representation of the word /spə: m /in English. In Urduized English /spə:m / / becomes /spə:rə m /, because Urdu speakers insert a vowel segment / ə/ between /r/ and /m/ at the word ending position of loanwords while communicating or speaking. In the input, the word has a CCVC structure and the word is monosyllabic. When the Urdu speakers speak the word, the structure CCVC becomes CCV.CVC and the output word will be bisyllabic. This is because in Urdu two consonants don't occur together in a word and consonant clusters are splinted with a vowel. The speakers apply the same constraints while speaking English.

Furthermore, the OT representation of the word shows that candidate 'a' violates the higher ranked constraint \*Peak-CON and the candidate is not optimal. Candidate b becomes optimal because it violates lower ranked constraints, DEP-IO, and it maintains the higher ranked constraints \*Peak-CON and Align-R. On the other hand, Candidate 'c' also violates higher-ranked constraints and is not optimal. Another thing that can be noticed in the above word, is in the word input /r/ is not pronounced but in the output native speakers speak /r/. The constraint hierarchy will be :

\*Peak CON>> \*Align R>> DEP-IO>> Contiguity

If we draw the syllabic template of the word /spə:rə m / in Urduized English, the following syllabification will appear:



**Fig 3: syllabic template of the word /spə:rə m / in Urduized English.**

If we take another loanword of English, the following OT representation can be observed in Pakistani English:

**Table 12. OT Analysis of the loanword /splaf / in Urduized English**

/ splaf /	*SSP	*COM-ONS	DEP-IO	CONTIGUITY
a. / sa.plaf /		*	*	*
b. → /səplaf /			*	
c. /spə laf /	*!	*	*	*
d. /spləaf /	*!	*	*	*
e. /spə laf a/	*!	*	*	*
f. /aspə laf /	*!		*	*
g. /splaf /	*!	*		

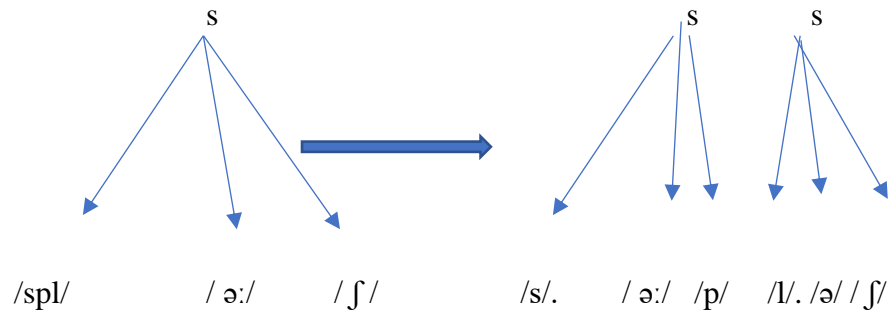
Table 12 illustrates the representation of the word / splaf /in English. In Urduized English / splaf / becomes / səplaf /, because Urdu speakers insert a vowel segment / ə/ between /s/ and /p/ at the word-initial position of loanwords while communicating or speaking. In the input, the word has a CCCVC structure and the word is monosyllabic. When the Urdu speakers speak the word, the structure CCCVC becomes CVC.CVC and the output word will be bisyllabic. This is because in Urdu two consonants don't occur together in a word and consonant clusters are splinted with a vowel. The speakers apply the same constraints while speaking English.

Furthermore, the OT representation of the word shows that candidate 'a' violates the higher ranked constraint \*SSP and the candidate is not optimal. Candidate b becomes optimal because it violates lower ranked constraints, DEP-IO, and it maintains the higher ranked constraints \*SSP and COMP-ONS. On the other hand, Candidate 'c' also violates higher-ranked constraints and is not optimal. Another thing that can be noticed in the above word,

is in the word input /r/ is not pronounced but in the output native speakers speak /r/. The constraint hierarchy will be :

\*SSP>> \*COMP-ONS>> DEP-IO>> Contiguity

If we draw the syllabic template of the word / səpləf / in Urduized English, the following syllabification will appear:



**Fig 4: syllabic template of the word / səpləf / in Urduized English.**

Furthermore, Tableau 12 incorporates the SYLLCON where conjunction with the [[ SY-CON, SSP>> \*Complex ONS, DEP-IO]]. The grammatical output candidate is b because it does not violate the higher ranked constraints. The other candidates (a), (c), (d) , (f) and (g) fatally violate the higher ranked constraints and are not optimal.

## 5. Conclusion

The main research question was to find out which clusters in Urduized English are problematic for Pakistani Urdu speakers. The current study investigated the process of epenthesis in the Urduized English used in Pakistan. The study discusses the phonological process of epenthesis with the application of optimality theory and briefly analyses the constraints that affect the process of epenthesis in the usage of loanwords in Urduized English. The study discovered that in Urduized English, speakers break consonant clusters by inserting or adding a vowel segment between the consonants at the beginning or end of the word. The insertion of a vowel sound takes place because in native languages like Urdu, CC combinations are not allowed, and speakers use loanwords of English with the same phonological constraints. The study also concludes that there is a pattern and ranking of epenthesis constraints that are violable under OT analysis in Urduized English. Through the current study, OT has provided a brief insight into the phenomenon of epenthesis in

Urduized English used in Pakistani society, and it has also briefly discussed how native speakers of Urdu add or insert certain vowels in loanwords. The study also concludes that a constraint that is not applied in native speaker grammar is applied in Pakistani English and is highly ranked in Urduized English. The study will help to improve communication and overcome communication barriers. Moreover, the study will further lead the researchers in the future to more in-depth investigations of phonological processes like epenthesis in other varieties of English. The study recommends a spectrographic investigation of the process for future empirical evidence.

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