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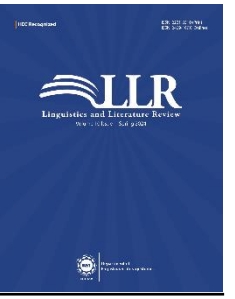

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Phonological Variations of Standard British English (SBE) in Pakistani Preschool Teachers' Speech

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Abstract

The interplay of Urdu and diverse regional accents influences spoken English, which has led to the creation of Pakistani English (PakE). It is crucial that bilingual assessments addressing speech sound disorders where English may be a second language for Pakistani children, are culturally sensitive and linguistically appropriate. The present study aims to identify the patterns that distinguish PakE from Standard British English (SBE). A picture naming test with all English phonemes was created comprising of 65 English words. Ten Pakistani multi/bilingual female teachers from an urban private school in Pakistan participated in the study. The findings highlight distinct phonetic variations in PakE, encompassing substitutions and rhoticity. Consonant patterns include stopping (/ð→d̲, θ→t̲^{h}/) as seen in (mother) and [t̲^{h}ʌmb] (thumb), as well as affrication (/ʒ →ʤ/) observed in [gərɑ:ʤ] (garage). PakE, recognized as a rhotic language, exhibits rhoticity through a palatal trill (/ɷ→r, ɹ→r/) in [wɔʈər] (water) and [ɔrəndʒ] (orange) and retroflexion in consonants (/t→ ʈ, d→ɖ/) found in [ʈiʃʊ] (tissue) and [ɖɪʃ] (dish). Vowel patterns involve monophthongization (/ei→e, əʊ→o/) in [res] (race), [noz] (nose); alterations (/ə→ɪ/, /æ→ə/, /ɔ:→o:/) as in [pɪdʒɑ:mɑ:z] (pajamas), and [gərɑ:ʤ] (garage). Epenthesis was absent in the teachers' speech, contrary to previous literature. This study confirms distinctive PakE phonemes providing a vital reference for speech sounds and their variations, in the speech of Pakistani adults. It offers valuable evidence in the absence of normative references for establishing a baseline reference of English consonants, consonant clusters and vowels for phonological assessments of young bilingual and multilingual Pakistani

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children.

***Keywords*:** Pakistani English (PakE), Standard British English, phonology, bilingualism/multilingualism

Introduction

English is spoken by nearly 1.5 billion people across 146 countries worldwide. Among these, over 370 million are native speakers, while the remaining approximately 1 million are bilingual or multilingual (Eberhard, 2023.; Farooq & Mahmood, 2021). World Englishes (WE) represent a distinctive amalgamation of native accents, dialects, and intonations. WE have been classified into three circles, namely the inner, outer, and expanding circles, which emphasize the linguistic diversity and variations in the English language spoken worldwide. This classification highlights the importance of legitimizing the varieties of English spoken worldwide, which accentuates its role as a global language. The three circles foster an inclusive, and pluralistic understanding of English use among speakers around the world. The inner circle includes regions where English is spoken as the native language and enjoys official language status. It sets the standard for other varieties of English; and is often referred to as Standard British English (SBE) or British Received Pronunciation (BRP). The outer circle encompasses countries where although English is not the primary language, it holds official language status such as in Malaysia, Singapore as well as India, and Pakistan. English spoken in these countries is evidently different from SBE. The third or the expanding circle has countries where English is spoken as a foreign language, and is primarily taught in schools, colleges, and universities just as a subject. Although English is neither the first nor the official language in these regions, the globalization in business and educational needs compel individuals to learn English (Soomro, 2022).

The term employed to describe indigenized or nativised forms of English in various countries is "New Englishes" (NE). Examples include Singlish in Singapore and Manglish in Malaysia. These NE are readily distinguishable due to their distinctive characteristics, setting them apart from SBE. Pakistani and Indian Englishes are varieties of NE that emerged in the post-British-colonial era. Despite sharing some similarities, they possess distinct characteristics that distinguish them, making them significantly different from the sound system of SBE. Their uniqueness comes from the interference of the multilingual speakers' native language/s

along with Urdu in Pakistan, and Hindi in India, with English. Table 1 shows some common consonants between Urdu, Hindi and English (https://www.asha.org/siteassets/uploadedFiles/Urdu-Phoneme-charts.pdf.).

Research Questions

- Does the speech of bilingual Urdu-English preschool teachers show phonetic variations in the consonants, consonant clusters, vowel monophthongs and diphthongs of SBE?
- Do cross-linguistic influences lead to distinctive consonantal and vowel variants that uniquely characterize PakE?

Literature Review

The Languages of Pakistan

Pakistan has an inherently diverse linguistic environment. Urdu is the national and official language of Pakistan (Farooq & Mahmood, 2021). English is also the official as well as the language of education for most Pakistanis. The four provincial languages in Pakistan, namely Pashto, Punjabi, Sindhi, and Balochi are the third language in each province that enjoy official status. These languages have varied dialects in each province (Cheema & Baloch, 2021).

Multilingualism is a common feature in Pakistani society, as most urban Pakistanis speak their native language, along with Urdu and English. Urdu is the native language of 8% of Pakistanis who migrated from India at the time of partition in 1947. Sindhi is the official language in the province of Sindh in southern Pakistan which is spoken by about 21%, whilst Pashtu by 8% of the people in Khyber Pakhtunkhwa. Punjabi is the provincial language of Punjab which is the native language of about 44% of Pakistanis and is spoken by around 61% of people in the country, followed by Seraiki, spoken in South Punjab and Baluchistan by nearly 21% of Pakistanis (Atta et al., 2022). Pashto is spoken primarily in Pakistan's Khyber Pakhtunkhwa (KPK) province, Gilgit Baltistan, and neighboring Afghanistan.

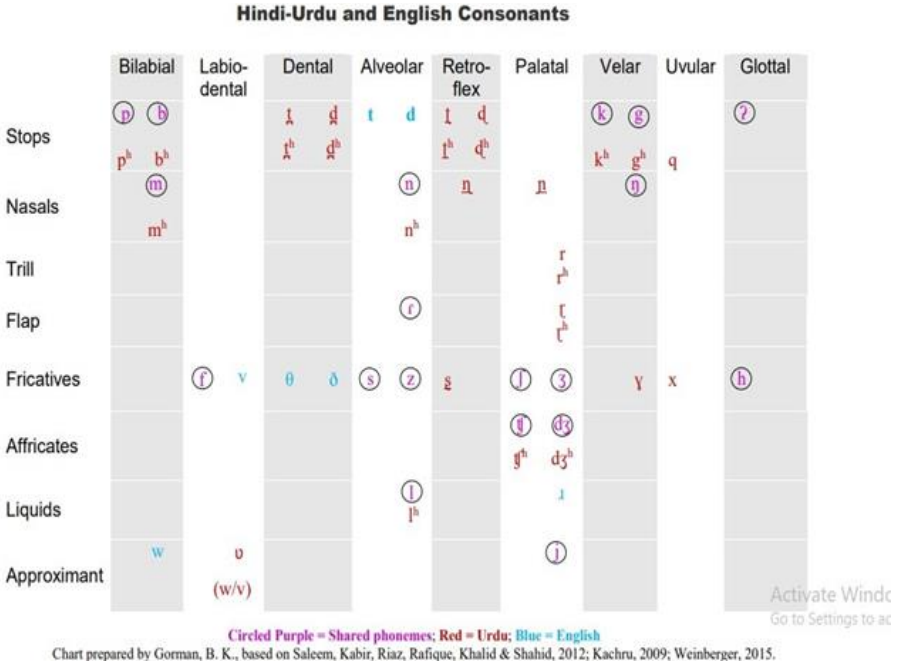
There is a rapid increase in the use of the English language among native Pakistanis pursuing business, economic and intellectual growth. English is used in offices, banks, educational institutions, and courts, along with Urdu, as the official language in Pakistan. It is considered a language of the elite and the educated, who belong to Pakistan's upper and upper-

middle socioeconomic strata. Social media has played a crucial role in motivating and empowering people to learn and speak English (Abbas et al., 2022; Abbasi et al., 2022).

English pronunciations have also been categorized according to their differences in comparison with SBE. The acrolects form the smallest category of English speakers whose pronunciations closely resemble SBE, as they are the elite from the highly educated stratum of society. Mesolect speakers are educated officegoers, students, and teachers. It is their speech that essentially displays the unique features of English spoken in Pakistan referred to as Pakistani English (PakE), here. Deviant productions that are vastly different from SBE are usually in the speech of the basilect speakers, who are uneducated daily wage earners. Epenthesis is usually seen in the speech of basilect speakers (Farooq & Mahmood, 2021b; Mahmood, 2022; Shahid et al., 2023). The heterogeneity of PakE is because of differences in the geographical, socio-economic, and educational status of the speakers (Yasir et al., 2021).

Figure 1

Phonemes Common to English, Urdu and Hindi



Fluency in English is considered as a means of social upliftment. Primary and secondary academic institutions in Pakistan are known as the 'English medium' and 'Urdu Medium' schools depending upon the language of academic instruction. English is taught as a compulsory subject in Urdu medium schools. The Higher Education Commission (HEC) of Pakistan makes it compulsory for all academic instruction in Higher Education Institutions (HEIs) to be in English, with two mandatory courses in the English language taught in every undergraduate program (Yasir et al., 2021).

The first language influences subsequent language acquisition (Jadoon & Ahmad, 2022). Cross-linguistic effects lead to significant differences in the PakE phonology of Pakistani multilingual speakers. Studies of the interference of indigenous native Pakistani languages with English indicate more significant variability in the vowels of PakE. They also indicate an alteration in syllabic stress across bi-syllabic and polysyllabic English words, manifesting phonological changes to SBE. Together all these variations characterize the features of PakE of the native speakers and are not considered as speech errors but, instead, are now recognized as a unique new English among the many South Asian Englishes (Abbasi et al., 2022; Asghar et al., 2021; Bilal, Azher, Ishafaq, et al., 2021; Haidar & Manan, 2021; Rahman, 2020).

Other factors of consequence are the intensity of exposure to the English language through parents, siblings, friends, teachers and others. The language policy in school is critical to the 'use' of English among students. Exposure to English through movies and social media also influences the acquisition of English.

Investigating Cross-Linguistic Influences and resultant Phonological Variants in PakE

PakE lexicon, phonology and morphosyntax, have been studied by researchers for over three decades, gathering substantive momentum over the last ten year. Influence of regional languages on PakE is seen as (a) Phonological transfer, (b) Lexical borrowing (c) Syntactic influences.

(a) Phonological transfer: Phonological features of Urdu and other indigenous Pakistani languages e.g. Urdu, Seraiki, Pashto, Sindhi, and Balochi, uniquely affect the phonemes of English spoken by native Pakistani multilinguals. PakE phonology varies from SBE in consonants

and vowels. The essence of cross-linguistic transfer lies in this tiered multilingualism across Pakistan. Retroflexion is a prominent feature in Urdu, Punjabi, Sindhi, and Pashto, which reinforces the use of retroflexed consonants in PakE. For example, the alveolar stops of SBE /t/ and /d/ are often spoken as retroflex [ʈ] and [ɖ]. The literature indicates that PakE phonology varies from SBE in consonants and vowels (Jadoon & Ahmad, 2022). It also provides evidence that some phonemes of Urdu, Punjabi, Sindhi, Pashto, Balochi, and Seraiki /b, p, m, n, ŋ, k, g, ʧ, dz, h, s, z, ʃ, r/, are common with SBE (Atta et al., 2022).

Aspiration of stop plosives is a distinctive feature of Pakistani languages that contributes to phonemic differences, [bhɑ:lu means a grizzly bear, whilst [bɑ:lu] means 'dry sandy soil' in Urdu. In comparison, aspirated plosives are allophones in SBE and do not alter the word's meaning. /θ/ is spoken as an aspirated dental /t̪^{h} /, whilst /ð/ is replaced by the dental plosive /d̪/ in PakE, i.e. stopping and dentalization of the fricative of SBE. Retroflexion is seen in the alveolar /ʈ/ and /d/ of SBE which are spoken as strongly articulated palatal stops /ʧ / and /ɟ/ in Urdu and other native Pakistani languages due to the absence of alveolar stops in local languages (Jadoon & Ahmad, 2022; Raza, 2023; Yasir et al., 2021). Substitution of the consonant /ʒ/ of SBE is seen in the words measure, treasure and pleasure spoken as /j/ by Pakistanis who speak Punjabi as L1 i.e. [mɛʒə → mɛʒər]. It may also be spoken as /ʤ/ in PakE in words such as 'garage' i.e. [gærɑ:ʒ → gərɑ:ʤ]. The consonants /v/ and diphthong /w/ of SBE, are represented by the letter /و/ in Urdu. Native Pakistanis tend to speak these phonemes in an undifferentiated manner as the phoneme /ʋ/ (Abbasi et al., 2022; Bajwa et al., 2022; Bilal, Azhar, Anam et al., 2021; Farooq & Mahmood, 2021; Jadoon & Ahmad, 2022; Rahman, 2020; Yasir et al., 2021). Another feature of PakE is the insertion of an epenthetic vowel or a schwa in words having a consonant cluster. Speakers having Urdu as L1 are likely to say [ɪskuːl] and [ɪsteɪʃn], whilst those having Punjabi as L1 would say [səkuːl] and [səteɪʃn] for the words *school* and *station* respectively. Apart from cross-linguistic interference, this also characterizes the educational background of the speaker and the amount of exposure they have had to English since childhood (Farooq & Mahmood, 2021; Jadoon & Ahmad, 2022; Mir et al., 2023; Raza, 2023; Yasir et al., 2021).

Greater variability is reported in the literature in relation to vowel alterations. Three diphthongs are often monophthongised in PakE

i.e./əʊ→o/ as in *the nose*, and /eɪ→e/ as in *gate*, are commonly seen, whilst /ʊə→ʊ/ as in *poor* is a rare substitution. Several variations among the monophthongs exist between PakE and SBE (Bilal, Azhar, et al., 2021; Farooq & Mahmood, 2021; Jadoon & Ahmad, 2022; Raza, 2023; Yasir et al., 2021).

(b) Lexical borrowings: Everyday Urdu incorporates Punjabi and Sindhi words, in colloquial speech. For instance, terms of kinship, food, and rural life often enter Urdu from Punjabi. Several loanwords from English are heard in everyday conversations involving education, technology, and business such as school, computer, file. English words are often nativized in Pakistani colloquial speech by using morphemes from Urdu, such as ' [pleɪʈeɪn] ' for 'plates'. English loanwords are adapted phonologically to local pronunciations by using the epenthetic vowels, making it easier for the native Pakistani to speak the consonant clusters, which do not occur in Urdu e.g., [səˈku:l] or sometimes [ɪsˈku:l] for 'school'. Code-switching: Educated urban Pakistanis who may belong to the elite socioeconomic stratum often alternate or code-switch between Urdu and English. Their spoken languages is often regarded as a hybrid variety and is sometimes referred to as 'Urdish'. (c) Syntactic influence: Pakistan's regional or provincial languages typically have a similar morphosyntactic structure, hence syntactic influence is not of major consequence for a native when using informal speech.

The data collection procedures used by researchers in previous studies of PakE phonology have mainly employed tasks involving reading aloud written word lists, sentences and passages; or conversations with the researcher. These data collection procedures provide a written cue, and do not cater to people who cannot read. Atta et al. (2022) used pictures to collect data. The use of pictures as stimuli in psycholinguistic experiments is significantly different from the use of written sentences and word lists. When the participants see a picture, they can access and associate it with the corresponding meaning more quickly, bypassing the word-retrieval process for comprehension, contextual information, and spatial relationships that may not be easily conveyed by words alone. Pictures can bridge the gap between linguistic and visual processing, helping to link and retrieve words with their corresponding referents.

Natural spontaneity of picture-naming is critical when assessing children's phonological development. Speech-language therapists in

Pakistan are forced to use speech assessment tools standardised on English-speaking children, that employ pictures for spontaneous elicitation of words (names of the pictures). Children with speech, language and/or literacy impairments tended to perform better on traditional picture-naming speech tests than on the other aforementioned speech tests. Whilst differing testing paradigms are associated with variations in speech accuracy, the present study employed an English Single-Word Phonology Picture-Naming Test, emphasizing the significance of gathering phonemic data from adults in a society as it serves as a foundation for understanding speech sounds and their variations, which aids in establishing norms of phonological development for bilingual children. The use of an accurate method for testing is vital.

Literature highlights the role of a child's environment on their acquisition of speech and language. The language/s they hear from their parents and other adults (including teachers) influence their productions (Lim & Chieng, 2022). Children spend a substantial amount of time with teachers in their early years, therefore, collecting samples of the phonemes spoken by them, can provide a baseline for speech sounds and their variants acquired by children.

Children growing up in bilingual societies hear and use different phonological systems simultaneously, whilst the adults around them often code-switch and borrow words from other languages they know, and in everyday speech. Consequently, the use of regional languages, Urdu and PakE in most Pakistani homes, exhibits Pakistan's plural linguistic identity. The objective of this research is to determine the phonology of English spoken by bilingual/multilingual Pakistani preschool teachers.

Methodology

This is cross-sectional, descriptive and qualitative study, conducted with ten teachers who were teaching children in the age range of 3;0-6;11 years. They had to spontaneously name the pictures of an English Single-Word Phonology Picture-Naming Test. This test was developed with culturally appropriate pictures for multi/bilingual Pakistani children. This test was to be standardised for assessment of phonological skills of typically developing multi/bilingual Pakistani children. The phonological features of SBE served as a benchmark for comparison, in the absence of norms of reference for phonological development of Pakistani children's English

phonology. The speech of ten teachers served as a baseline for development of norms for scoring the responses of children on whom the English Single-Word Phonology Picture-Naming Test was to be administered. The rationale for selecting preschool teachers was on the premise that collecting specimens of English phonemes spoken by adult teachers can provide a baseline for speech sounds and their variants acquired by children, who spend a substantial amount of time with teachers in their early years.

Research Participants

The primary eligibility criteria of selecting the teachers were their fluency in Urdu and English, and that they worked with children in preschool and grade one. They were aged 27 – 46 years. All teachers held an undergraduate or graduate degree and had a teaching experience of five to eight years within the English-medium preschool set-up. The teachers reported the hierarchical use of languages in their everyday lives at home and at work. Their linguistic demographics are shown in Table 1, as demographics of the participating teachers. However, they habitually used English and Urdu predominantly in their daily repertoire.

Table 1

Linguistic Demographics of Participating Teachers

Teachers' Initials	Academic Qualification	Native language L1	Other languages spoken by the teachers (L2, L3, L4)
T1	Graduate	Sindhi	Urdu(L2), English (L3), Farsi(L4).
T2	Graduate	Urdu	English (L4), Gujrati(L3), Kuchi(L4).
T3	Graduate	Sindhi	Urdu(L2), English (L3)
T4	Post-graduate	Urdu	English (L2), Arabic(L3), Sindhi(L4)
T5	Graduate	Urdu	English (L2), Gujrati(L3).
T6	Graduate	Urdu	English (L2)
T7	Graduate	Urdu	English (L2), Punjabi (L3)
T8	Undergraduate	Punjabi	English(L2), Urdu(L3)
T9	Graduate	Urdu	English (L2) Punjabi (L3)
T10	PhD scholar	Urdu	English (L2) Sindhi (L3)

Research Instrument

An English Single-Word Phonology Picture-Naming Test containing 65

English words, including common verbs, nouns and adjectives used by Pakistani speakers. The test design is the same as that initially developed to access English spoken by bilingual Malaysian children in Malaysia. It was a phonological assessment tool, developed for the larger research to establish norms of bilingual children's English phonology. The test consisted of a set of hand-drawn pictures each representing a word, in English, and was designed to elicit the pronunciation of all ambient consonants (singletons and clusters) and vowels (monophthongs and diphthongs), from the participants (Lim & Chieng, 2022). Each picture was drawn in colour, on a separate page as a close representation of its natural form in the real-world, to elicit spontaneous naming. These pictures offered more holistic and context-rich stimuli that aligned with the complexity of language processing. By using pictures to elicit words spontaneously (names of pictures) the researcher aimed to simulate more naturalistic language processing, gaining valuable insights into the dynamic relationship between language and visual perception as well as the psycholinguistic mechanisms that underlie receptive and expressive language, and the integration with other cognitive processes.

Through the pictures in this test, the study assessed the teachers' speech production for consonants and vowels in at least two positions (initial or medial or final), across two or more words, in a diversity of consonant-vowel environments, because of the varied syllable structure of the monosyllabic, bi-syllabic and polysyllabic words (Lim & Chieng, 2022). The responses of the teachers were collected on a scoring form. All phonemes consonant singletons (plosives, nasals, fricatives, affricates, trills, liquids, deletions, approximants), consonant clusters and vowels (monophthongs and diphthongs) of the 65 words were written in IPA based on SBE on the scoring form. The responses (speech sounds) of the participating teachers were audio and video recorded; as well as transcribed within the scoring form, for data analysis and comparison with SBE. The variants of SBE in PakE were later to be included in the scoring form.

Testing Procedure

The procedure for assessment of bi/multilingual phonological speech using the English Single-Word Phonology Picture-Naming Test was proposed by Lim and Chieng, and was replicated in this study (Lim & Chieng, 2022)**.**

Ethical Considerations

The ethical approval, was obtained from the Research Ethics Committeeof a public university in Malaysia with reference code: JEP-2022-138 (29-04-2022); and from the Ethical Review Committee of a private university in Pakistan with reference code 5330422ASSLT (04-07-2022). Ethical protocols and considerations, including informed consent and privacy of participants, were adhered to throughout the research. Consent was obtained before making a video-recording of the teacher's speech.

Data Collection

The teachers named the pictures one at a time in a quiet, private space. They were asked to pronounce the words corresponding to the pictures in their habitual pronunciation, as used in the classroom setting. Spontaneous picture naming was the key feature of the English single-word phonology picture-naming test. All the teachers named each picture spontaneously, confidently and without haste. The test took approximately 15 minutes.

The testing sessions were video recorded using a JVC GR DVL805 digital video camera to capture the teachers' pronunciation. The recorded data were transcribed using IPA and diacritics on the datasheet by the researcher, a native speech-language therapist fluent in English and Urdu, followed by three other speech clinicians for inter-rater reliability, to represent the phonological features and pronunciation of each teacher accurately. Each teacher's pronunciation was considered the standard local adult pronunciation for each word. For example, if a teacher pronounced the English words 'hat' and 'dish' as [hæʈ] and [ɖɪʃ]; instead of [hæt] and [dɪʃ] respectively as in SBE; the pronunciation of [hæʈ] and [ɖɪʃ] was considered as the local standard. The scoring form had provision for transcribing the standard and nonstandard linguistic variants, such as when retroflex /ʈ, ɖ/ are spoken instead of the alveolar /t, d/ by the teachers. These were incorporated in the scoring form with a slashe in between the consonant and its variant e.g. 'ʈ/t'. For instance, retroflexion of plosives /t→ ʈ, d→ ɖ / in PakE are variants, hence the phonemes 'ʈ/t' and ɖ/d are indicated as correct baseline targets for the test words 'hat' and 'dish' respectively with the left target to the slash being the nonstandard production (variant) and the right target, the standard production (SBE). Either of the two productions of the phonemes ʈ/t, ɖ/d were regarded as correct productions in the teachers'

speech and given a score in the test.

Inter-Rater Reliability

Three more speech-language therapists who were fluent bilingual Urdu-English native speakers, used the video recordings to establish the reliability of responses by independently transcribing the words spoken by the teachers using IPA and diacritics. There was 90-95% agreement between all the speech-language therapists transcribing the words, which provided high inter-judge reliability for the data collected.

Results

A nonparametric one-way ANOVA was performed using the IBM Statistical Package for Social Sciences (SPSS) Version 26.0 on a Windows 10 machine to investigate a statistically significant difference between the phonemes spoken by the teachers in English, highlighting the features of PakE versus SBE. This was followed by the application of the Kruskal–Wallis H test to conduct pairwise comparisons between the English phonemes spoken by the teachers.

Table 2

Total Distribution of Phonemes in the Teachers' Repertoire

	Frequency	Percent
Plosive	390	16.5
Nasal	180	7.6
Fricative	310	13.1
Affricate	110	4.7
Liquid	60	2.5
Trill	90	3.8
Approximants	112	4.7
Monophthong	760	32.2
Diphthong	138	5.8
Consonant Cluster	190	8.1
Deletion	20	.8
Total	2360	100.0

The teachers presented a nearly homogenous linguistic identity. Most of the teachers used Urdu (L1) and English (L2) in their conversational repertoire. The phonemes used by the teachers were similar to the phonemes of PakE in the literature reviewed above. The cross-linguistic interference

of native and regional languages was evident in both the consonants and vowels of the teachers' speech.

A statistical analysis was carried out to investigate the phonemes spoken by the teachers in English. **Table *2***Table 2 shows all categories of phonemes targeted by the English Single-Word Phonology Picture-Naming Test, with the highest proportion of plosives (16.5%) among the consonants, and more monophthongs (32.2%) than diphthongs (5.8%) in the vowel class.

Table 3 suggests variations in the consonants and vowels spoken by the teachers. The non-parametric one-way ANOVA revealed that there was a statistically significant difference in the distribution of 2360 consonants and vowels across the phonemes spoken by the teachers (H (9) = 23.959, p = 0.004), categorizing them as SBE and PakE.

Table 3

Distribution of phonemes in PakE and SBE in teachers' speech

	Frequency	Percent
PakE	410	17.4
SBE	1950	82.6
Total	2360	100.0

Table 4

Pairwise Comparisons of Teacher

S.No.	Comparison between two teachers	Value of significance (p-value)
1	T1-T7	0.005
2	T1-T9	0.005
3	T2-T7	0.008
4	T2-T9	0.008
5	T3-T7	0.005
6	T3-T9	0.005
7	T4-T7	0.008
8	T5-T7	0.008
9	T6-T7	0.005
10	T6-T9	0.005
11	T8-T7	0.005
12	T8-T9	0.005

Using the Kruskal–Wallis H Test, a total of 38 comparisons were made between the 10 teachers included in this study, of which 12 comparisons had a *p* value < 0.05, i.e.,nine teachers had statistically significant differences between some of their phonemes, as shown in Table 4, clealy showing that the teachers' speech had unique phonemic features of PakE which is an Asian English, different from SBE.

Table 5

Distribution of phonemes in PakE

PakE Phonemes	Frequency	Percent
Plosive	126	30.7
Fricative	10	2.4
Affricate	10	2.4
Trill	40	9.8
Approximants	22	5.4
Monophthong	170	41.5
Consonant Cluster	32	7.8
Total	410	100.0

Table 6

Distribution of phonemes in SBE.

SBE Phonemes	Frequency	Percent
Plosive	264	13.5
Nasal	180	9.2
Fricative	300	15.4
Affricate	100	5.1
Liquid	60	3.1
Trill	50	2.6
Approximants	90	4.6
Monophthong	590	30.3
Diphthong	138	7.1
Consonant Cluster	158	8.1
Deletion	20	1.0
Total	1950	100.0

Table 5 and Table 6 show that PakE had variants of SBE in the phonemic categories of plosives, fricatives, affricates, trills, approximants, and consonant clusters. There is an increase in plosives in PakE (30.7%) in

compared with plosives in SBE (13.5%) and sharp rise in the proportion of trills in PakE to 9.8% giving evidence that PakE is a rhotic language. The fricative and affricate variants of PakE are (2.4%) each, in comparison with fricatives (15.4%) and affricates (5.1%) of SBE. Among PakE vowels there were variants of SBE showing only monophthongs. Several diphthongs of SBE were spoken as monophthongs in PakE, as shown in Table 9. Both SBE and PakE shared the same nasals, liquids, diphthongs and deletions.

Table 7

Distribution of PakE Phonemes Spoken by the Teachers

Teachers	Frequency	Percent
T1	46	11.2
T2	45	11.0
T3	46	11.2
T4	45	11.0
T5	45	11.0
T6	46	11.2
T7	23	5.6
T8	46	11.2
T9	23	5.6
T10	45	11.0
Total	410	100.0

Table 8

Distribution of SBE spoken by the teachers

	Frequency	Percent
T1	190	9.7
T2	191	9.8
T3	190	9.7
T4	191	9.8
T5	191	9.8
T6	190	9.7
T7	213	10.9
T8	190	9.7
T9	213	10.9
T10	191	9.8
Total	1950	100.0

Table 7 and Table 8 show the distribution of PakE and SBE, respectively, as spoken by the teachers. Frequencies of the responses made by only two teachers (T7 and T9) show that they used more phonemes of SBE than PakE.

Descriptive Analysis of Teachers' Speech

Table 9

Consonant Variants in the Teachers' Speech

#	Words with target phonemes used in the single-word phonology naming test	English Consonants in SBE	Consonant Variants in Pakistani English
1	*tissue, water, teacher, teeth, head, gate, hat, sand, yogurt, window, drum, truck, star, toy, dish, road.*	t, d, tr, dr, nd.	Retroflexion t → ʈ, d → ɖ, tr → ʈr, dr → ɖr
2	*teeth, thumb, mother, these.*	θ, ð.	Deaffrication (Stopping fricatives) θ → t̲ʰ, ð → d̲ʰ
3	w*ater, teacher, mother, sugar, measure, finger, flower, star, pear, chair, ear, ring, race, road, orange, garage, and truck, drum, crayon, green, fridge, brush, pray.*	ɹ	Rhoticity (palatal trill) ɹ → r
4	*garage*	ʒ	Affrication ʒ → dʒ
5	*van, beehive, five*	v	Approximation v → ʋ
6	*window, water, watch*	W	Approximation w → ʋ

Consonants

The variations in the consonants of SBE, determined through the

teachers' speech in this study using the English Single-Word-Phonology Naming test are shown in table 9. There is *lack of aspiration* observed in speech of the teachers in stop consonants /t,d,k,g,p,b/, which are spoken with an aspiration in the initial position of a word in SBE. *Retroflexion* was seen in the alveolar stops /t/ and /d/ of SBE, which were spoken as retroflexed palatal stops /ʈ/ and /ɖ/ in the initial, medial and final positions of the words and in the clusters, by all teachers except two. *Stopping:* was seen in fricatives /ð/ and /θ/ of SBE which were spoken as dentalized stop /d̪/ and dentalized aspirated stop /t̪^{h}/ respectively. The /t^{h}/ is an Urdu consonant. Rhoticity was observed when the phoneme /ɹ/ appeared in the final position. Only one teacher spoke these words with the deletion /r→ ø / consonant in the final position. The /r/ was spoken as a trill in the initial, medial and final positions of a word and clusters. *Affrication:* The consonant /ʒ/ was spoken as an affricate ʒ → dʒ in the final position of the word *garage* by seven teachers, whilst three of the teachers used /ʒ/ as in SBE. In the word measure it was spoken as /ʒ/ by all the teachers. *Approximation* was seen in the consonants /v/ and /w/ in the initial position of the words which were spoken as a bilabial, with minimal lip-rounding and lack of differentiation, hence can be written as /ʋ/.

Vowels

The teachers' use of vowels showed a deviation from SBE similar to those reported in the literature, as seen in Table 10

Monophthongisation of Diphthongs

A significant difference was that the SBE diphthongs were realized as monophthongs. The diphthongs were reduced to monophthongs as /ei→e/, / əʊ→o/ and /ɔi→ɔe/ by all teachers. The diphthongs /ɑʊ/ in the words *house* and *cow* and /ɑi/ in the words *beehive* and *sky* remained unchanged.

Vowel Variations

Based on the liprounding, tongue position and its hump in the oral cavity, we see the phonological process of *fronting* /ə →ɪ / where a mid-central vowel is realized as a close-front vowel. The process of vowel raising occurs when the open mid-back vowel is realized as a close mid-back vowel /ɔ → o/. *Backing* is seen when the open mid-front vowel is spoken as a mid-central vowel /ǽ→ ə/ and lowering when the mid-central vowel is realized as an open mid-back vowel /ə → ɔ/. Whilst *backing and*

lowering is seen when the mid-central vowel is spoken as an open back vowel /ə → ɑ/ as in the words.

Table 10

Vowel Variants in the Teacher's Speech

#	Words with target phonemes used in the Single-Word Phonology Naming Test	English Vowels in SBE	Vowel Variants in Pakistani English
1	*Nose, road, sofa, window, yellow, fate, race, pray, crayon, baby, toy, boy.*	ei əʊ ɔi	Monophthongisation ei → e əʊ → o ɔi → ɔe
2	*Orange, pyjamas, crayon.*	ə	Fronting ə →ɪ Backing ə → ɔ Lowering ə → ɑ
3	*Yogurt*	ɔ	Raising ɔ → o
4	*Garage*	Ǽ	Backing ǽ → ə

Discussion

The phonological features of PakE, as observed in the results of this study, align with the findings of previous research, demonstrating similar consonant and vowel variants. However, an exception is noted in the form of absence of epenthesis, which may be attributed to the fact that all participating teachers hold graduate and undergraduate degrees.

All teachers in this study were multilingual, except one who was bilingual, using only Urdu and English, as seen in table 1. Teachers who had been exposed to Pakistani native languages (L1) identified themselves as 'heritage speakers', because societal demands and their pursuit of academic careers in English led them to use English much more frequently as L2 than their use of native languages (Isasa, 2022; Rahman, 2020). As heritage speakers, all the teachers reported using their native language (L1)

only when communicating with older family members. Literature shows that heritage learners' speech perception and phonological skills for the phonemes of their native language remain strong even after pervasive exposure to societal languages like Urdu in Pakistan and English during their academic upbringing from an early age.

Some teachers belonged to the acrolectal group, where English became their primary language of use for professional needs. Urdu, spoken in the community, became their second most frequently used language, although it was the native language (L1) of eight of the participating teachers. Seven of the teachers, along with one teacher whose native language (L1) was Punjabi ranked English as the second most spoken language after Urdu. There were two teachers whose native language was Sindhi, who ranked Urdu as L2 and English as L3, and said they used Urdu and English predominantly. They were heritage speakers of Sindhi. Table 1 shows a comparison of the teachers' language status, which provides evidence for the variants of SBE seen, in their repertoire of PakE phonemes.

This study highlights that PakE shares some consonants with SBE and with Urdu. It possesses a distinct set of phonological rules that bear some resemblance to the influence of Hindi on Indian English (Farooq & Mahmood, 2021; Haidar & Manan, 2021; Rahman, 2020), as seen in tables 9 and 10. Native multilingual Pakistanis often 'mispronounce' SBE words due to the acoustic effects of Urdu phonological rules and/or other local languages on their speech. Based on the acoustic characteristics of people's speech across the four provinces of Pakistan, these differences can be characterized as dialectal variations in PakE. The interference of the native language's (L1) phonology when acquiring or learning the sound system of another language (L2, or L3 or L4) must be taken into account (Isasa, 2022).

The use of the rhotic /r/ in final position instead of the approximant /ɹ/ or deletion /ø/ in SBE, as in words such as 'water' [wɔtə], are examples of cross-linguistic influence or language interference in the speech of bi/multilingual English speakers, since Pakistani languages characterize rhoticity. Unlike the alveolar approximant /r/ in SBE, /r/ is a palatal trilled consonant in native Pakistani languages. Similarly, deaffrication is seen in the speech of the participating teachers, where dentalized stops /t̪, d̪/ are substituted for fricatives /ɵ, ð/ respectively in SBE (i.e. (stopping of fricatives). These phonemes exist in Urdu as voiceless and voiced dental stops /t̪, d̪/. The fricative /θ/ in SBE is substituted with the aspirated dental

stop /t̪ʰ /, and the fricative /ð/ becomes dentalized to the stop consonant /d̪/. In Urdu, all stops have an aspirated counterpart /pʰ, bʰ, ʈʰ, ɖʰ, t̪ʰ, d̪ʰ, kʰ, gʰ/. For example, in Urdu, / t̪/ and /t̪ʰ / are two distinct phonemes. The Urdu word [t̪oɽɑ] means 'to break,' while with an aspirated [t̪ʰ] as [t̪ʰoɽɑ], it means 'less' or 'reduced in quantity.' None of the consonants in SBE have an aspirated counterpart. Urdu and other Pakistani languages have retroflexed stops / ʈ /, /ɖ/, but do not have the alveolar stops /t/ and /d/ found in SBE. All teachers substituted the retroflexed consonants /ʈ/ and /ɖ/ with the alveolar /t/ and /d/.

The cross-linguistic effects of Pakistani languages spoken as the first language have altered the production of consonants and vowels in SBE, as observed in PakE (Atta et al., 2022).

All the PakE variants observed in the speech of the participating teachers were scored as "correct" phonological productions. The existence of these variants in adult phonology provides a baseline against to access the phonological skills of young Pakistani multi/bilingual children. It is crucial to emphasize the use of pictures in this research as stimuli for spontaneous word elicitation. When participants view a picture, they can access and associate it with its meaning much faster, bypassing the word-retrieval process for comprehension, contextual information, and spatial relationships that may not be easily conveyed by words alone. This research underscores the significance of picture stimuli in the test used to elicit teachers' speech, as it will be used to assess the phonological development of young Pakistani multi/bilingual Urdu-English-speaking children.

Conclusion

This study contributes to the expansion of knowledge and enhances the credibility of PakE as a distinct variety of Asian Englishes within the realm of New Englishes. The findings of this study reiterate the phonological characteristics of PakE, in the existing literature. The naming of pictures ‘spontaneously,’ to elicit the spontaneous production of English phonemes at the word level, which is used in this study, is an important approach used in assessments targeting speech sound disorders. The impact of cross-linguistic variations is evident in the pronunciation of both consonants and vowels in PakE, influenced by the phonetic features of Urdu on the phonetic characteristics of SBE in the teachers’ speech. All the teachers consistently exhibited similar variations in both consonants and vowels across the

English Single-Word Phonology Picture-Naming Test items. The phonological variations in the teachers' pronunciation and are commonly documented features of PakE in literature which serve as the appropriate benchmarks for scoring the responses in the English. PakE variants identified in the study, and should be included in the scoring sheet of the test.

Considering adult speech as a model for babies and young children acquiring speech and language skills, we conclude that the results of this study also provide an essential reference point for evaluating and scoring the phonological skills of multi/bilingual children of Pakistani origin for whom English is a second or third language, because all teachers in this study worked with primary school children.

Recommendations

It is strongly recommended to assess the speech of a larger number of multilingual Pakistani adults, from a wider socio-economic range and educational background to re-iterate the acceptable variants of PakE as established through this research. An assessment of adult Pakistanis using Pashto, Punjabi, Sindhi, Balochi and Urdu as L1, is more complex, since these languages also have several dialectal variations, and would require a much larger group of subjects. This information will dictate the phonological acquisition of English among young Pakistani children.

Author Contribution

Amina Asif Siddiqui: conceptualization, investigation, writing - original draft, funding acquisition. **Ayesha Kamal Butt:** methodology, writing - review & editing. **Farheen Naz Anis:** validation, writing – review & editing. **Cila Umat:** project administration, supervision. **Mr. Muhammad Shaheer Mirza:** data curation, visualization, formal analysis.

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

Data supporting the findings of this study will be made available by the corresponding author upon request.

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