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Phonological Diversity in Sindhi Dialects: A Comparative Analysis of Lari, Utraadi and Vicholi Sindhi

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ABSTRACT

Phonological variations among dialects of a language serve as a significant indicator of linguistic diversity and socio-cultural evolution. This study investigates the phonological differences among three primary Sindhi dialects—Lari, Vicholi, and Utraadi through a qualitative and comparative linguistic analysis. To capture the richness and complexity of phonological variations, the study employed a combination of semi-structured interviews, naturalistic observation, and audio analysis. In addition, the researchers observed the variation because they are native speakers. This research examines variations in consonantal and vowel sounds, phonetic shifts, and the socio-linguistic factors influencing these differences. This study employs a qualitative exploratory research design, ideal for capturing the intricate details of linguistic variation within specific socio-cultural contexts. Qualitative research excels at addressing subtle linguistic phenomena that might otherwise be overlooked in quantitative methods. In this study, the qualitative design was particularly effective in revealing the phonological distinctions among Lari, Vicholi, and Utraadi dialects, as well as the socio-cultural factors shaping these variations. The findings highlight key phonological processes such as aspiration and dis aspiration, consonantal deletion, and the insertion of phonemes across dialects. Lari exhibits a tendency towards phonetic simplification, often omitting aspirated consonants and reducing vowels. Utraadi speakers display distinct phonetic additions, including the insertion of rhotic sounds, while Vicholi, as the standardized dialect, maintains more traditional phonetic structures. Socio-linguistic

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factors such as regional identity, historical linguistic influence, and educational exposure contribute significantly to these phonetic distinctions. This study underscores the importance of documenting and preserving Sindhi dialectal diversity for linguistic research, education, and cultural identity.

Keywords: Sindhi Dialects; Phonological Variation; Lari; Vicholi; Utraadi; Phonetic Shifts; Linguistic Diversity; Socio-Linguistics

1. Introduction

Language is a dynamic process that involves constant interaction between various aspects of human socio-cultural and geographical environments. It serves as a primary means of exchanging information, asserting individual and group identity, and facilitating learning. Human oral and written languages capture and express the history and experiences of their users. Sindhi, an Indo-Aryan language, is spoken today by millions in Pakistan and India (Ali[1]). This language exemplifies the potential of linguistic systems to encapsulate cultural and historical richness. Sindhi is considered as ancient as the Indus Valley Civilization (Allana[2]) and has developed a remarkably diverse dialect structure over time.

Phonology—the study of the sound systems in a language—is perhaps even more relevant in studying the regional and cultural dialects within a specific language. Accents, intonations, stress, how vowels and consonants are produced, and how they change or are perceived in other dialects are described by phonological features. The components of phonological variation in Sindhi are plausible and significant not only for diatopic phonological analysis but also for insight into the diachronic factor that governs the socio-cultural settings in speaking a language. Knowledge of these phonological differences gives information about the patterns whereby the existing language develops and the processes through which they are formed (Hassan[3], Amin & Ali[4], Ali[1]) Sindhi generally has more dialects, but the tinted Vicholi Sindhi can broadly be regarded as the most standard one at this level because of its use in education, media and government parlance. Moreover, when used partially, it is preferred over local forms like Lari & Utraadi, where even the phonological properties usually stay unnoticed (Abbasi et al.[5]).

Language is a process that is dynamic and active and encompasses continuous engagement of the socio-cultural and geographical features of human society. Fundamentally, it is an important tool in sharing information and identity, as well as a channel of communication, and often learning. Any graphical language that people use encodes fragments of the history and experience of those who employ it. Sindhi, an Indo-Aryan Language that is spoken by millions of people of Pakistan and India at present, provides a good example in this regard. Sindhi language is believed to have originated as old as the Indus Valley civilization and spans a wide variety of dialects in due course (Jatoi[6]).

Phonology, which deals with the sound systems in a language, is appropriate in the analysis of the dialects between different regions or cultures in the same language group. Elisions, pronunciations, inflections, where stress falls, how vowels and consonants are pronounced and how they differ or are received in other varieties are explained phonologically. Those variants and features in the phonological variation subsystem of Sindhi, which are relevant to diatopic phonological studies, are also useful for the identification of diachronic factors and socio-cultural contexts of language usage. Understanding of these phonological differences sheds light on the possible emergent patterns that characterise language, and the processes involved (Hassan[3]) or (Amin & Ali[4], Ali[1]). Sindhi comprises more than one dialect; the most standard one, by virtue of being used in education, media, and government, is the Vicholi Sindhi. More importantly, there seems to be a preference for using Vicholi Sindhi instead of local forms such as Lari and Utraadi and phonological properties are often left unnoticed in most cases (Abbasi et al.[5]).

The purpose of this work is to provide a phonological characterization of Sindhi dialects, with a focus on Lari, Vicholi and Utraadi. In this regard, the purpose of the study is to better define phonological differences between these dialects and contribute to the overall understanding of Sindhi as the linguistic variety as well as explore socio-linguistic contexts that might have shaped its evolution and usage (Ali & Subiyanto[7]).

1.1. Objectives

The objectives of this study are as follows:

- To identify and analyse the phonological variations present in Lari, Vicholi, and Utraadi Sindhi dialects.
- To determine the socio-cultural and linguistic factors contributing to the observed phonological variations among the three dialects.

1.2. Phonological Diversity in Sindhi Dialects

Sindhi, indeed, has a rich and diverse variety, as shown in **Figure 1**, depending purely on the area it covers; new varieties arise in a new spectrum as learners pick up Sindhi with the current influences of regional, cultural and linguistic factors. Previous studies, such as those by (Ali[1], Ali et al.[8]), have identified and analyzed three primary Sindhi dialects: Vicholi, Lari, and Utraadi, which vary in phonological character and dynamics of usage across district territories in Sindh.

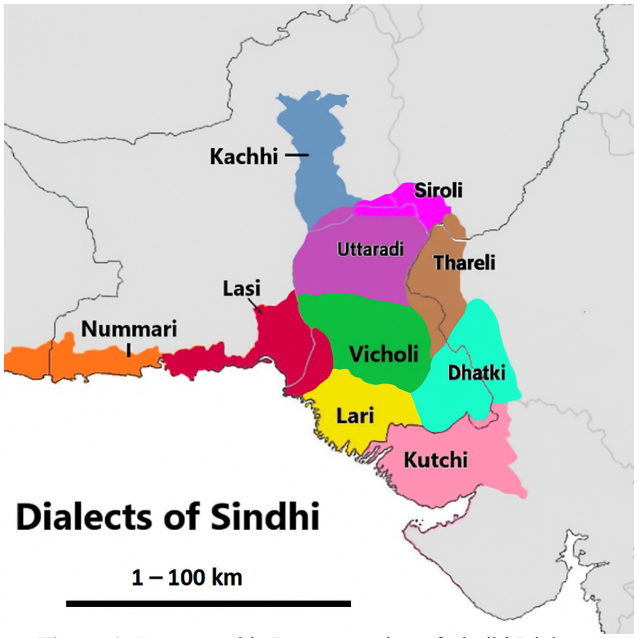


Figure 1. Demographic Representation of Sindhi Dialects.
Source: Wikipedia. https://en.wikipedia.org/wiki/Sindhi_language#/media/File:The_dialects_of_Sindhi_language.png.

Their work forms the basis for this study and it is the intention of this research to take the phonological differences of these dialects a stage further to try and establish socio-linguistic factors that may not have been explored.

Vicholi, Sindhi also known as Standard Sindhi, is mostly spoken in the middle area of Sindh, like Hyderabad, Sukkur and Karachi etc. As the dialect of education and media, it sets the pace in terms of how communication should take place. Nevertheless, the domination in these spheres of Vicholi did not result in the exclusion of other dialects like Lari and Utraadi which remain in their areas.

Vicholi Sindhi, being one of the two distinguished dialects, is distinguished as the standard Sindhi dialect. It reflects the phonological values of central Sindh, as the general standard in education and mass media. Moreover, Vicholi has lexical items of phonological borrowings from regional languages like Urdu, Punjabi and other languages of the Indo-Aryan Family. This dialect has relatively average phonological variation; for example, retroflex phonemes predominant in these languages are retained (Allana[2]).

Vicholi, as discussed earlier, contains higher phonological variation than Lari Sindhi, which is mainly used in South Sindh. A very striking and widespread phenomenon in Lari is that of short vowel raising, in which vowels are pronounced with a higher tongue position. For example, in Vicholi /a/ is similar to /æ/ in Lari, but the German phoneme is shorter. Except in vowels, Lari also involves phonological change in consonants by replacing one consonant with another. For example, Lari speakers may substitute aspirated phonemes /ʤh/ by the corresponding non-aspirated phoneme, /ʤ/, which is the voiced alveo-palatal affricate. This transition concerns differences with Vicholi that preserve aspirated consonants to a greater extent (Amin & Ali[4], Ali[1]). Furthermore, there are nasality features in Lari speakers; it occurs when vowels or consonants are articulated with nasal air REDIRECT to here; it is lost in transition, strengthened as prerequisites for our present study. Lari speakers also show distinctive phonetic feature of nasalization whereby vowels or consonants are produced with nasal air currents in certain linguistic conditions. Nasalization also occurs in Lari, where it is an expectation for some. One of the reasons is that phonological characteristics of spoken Utraadi Sindhi, such as the Northern Sindhi Living in Northern Sindh are influenced by the North Punjabi and Hindko language of Punjab. One of the main features of Utraadi is the melodic distribution of accents that involves relatively large fluctuations in pitch, so intonation is rhythmical (Arslan et al.[9]). All these phonological qualities differentiate Utraadi from the intonation characteristics of Vicholi. However, Utraadi has

some elements of historical phonology which has undergone change in certain other varieties of Sindhi.

1.3. Research Questions

The research seeks to answer the following key questions:

1. What specific phonological variations are observed among Lari, Vicholi, and Utraadi Sindhi dialects?
2. What socio-cultural and geographical factors influence the phonological differences in Lari, Vicholi, and Utraadi Sindhi?

2. Literature Review

2.1. Phonological Variations in Sindhi Dialects

The literature review looks at the body of literature with regard to the topic of study, displaying and analyzing findings and the identified gaps to provide context for the current research. Phonological differences in the Sindhi dialects have been discussed in many of the previous investigations. (Ali[1], Ali et al.[8]) discuss the contrasts and differences between three dialects, Vicholi, Lari, and Utraadi Sindhi, in terms of phonological features. Similarly, using Sindhi data, (Ali[1], Amin & Ali[4],) described vowel raising and consonantal substitution as some phonological processes that are relevant for Lari Sindhi. Although these works are useful, they contain morphological components with morphology and afford a phonological study a prospect. Hassan[3] discussed the borrowing and inadvertent phonological variation between Vicholi and Siroli dialects, with emphasis on geographical factors relating to sounds. Other works include (Mustafa et al.[10]) on the natural process of vowel insertion in Vicholi Sindhi and its relation to phonotactic processes of simplification. However, the present literature featuring investigations solely on the phonological differences of Lari, Vicholi and Utraadi is limited. This study fills this void by focusing and comparing phonological processes across these dialects.

2.2. Phonological Processes in Sindhi Dialects

The phonological mechanisms of insertion, conversion, epenthesis, aspiration, disaspiration, assimilation, deletion, and contraction in Sindhi dialects have been expounded by many writers in the field. These processes are not only indicative of the diachronic changes in Sindhi, but socio-linguistically, factors such as contact and status have also played a role.

2.2.1. Insertion

Insertion is found in many languages, especially in the Sindhi language in Vicholi. Although vowel insertion has gained attention as a strategy to manage phonological processes in the development of phonological-processing abilities and to enhance the production of consonant clusters for easier pronunciation, within the (Mustafa et al.[10]) systematic review, there is reasonableness in students inserting vowels for easy pronunciation of sounds. For instance, when the Sindhi-speaking Vicholi incorporates the English word “struggle”, “struggle” may beget an inserted vowel to transform to “sʌtrɪgl.” Thus, in Utraadi Sindhi, vowel breaking makes the sequences of consonants less workable to articulate while keeping the phonotactics well balanced. Borrowed adjectives from Urdu or English often undergone a process of adding vowels to make them conform to Sindhi phonetic systems (Aliani et al.[11]). For instance, while some of the borrowed words are altered by means of vowel addition, the changes implement the phonotactics of the Sindhi dialects. This process, as discussed by (Mustafa et al.[10]), exemplifies how linguistic contact influences phonological adaptation.

2.2.2. Conversion

Another phonological process is conversion or the change of the phoneme caused by the phonological context in which it is used (Hyman[12]). Some dialects tend to turn retroflex consonants to alveolar ones. In Vicholi Sindhi, the retroflex /ʈ/ in words is a change to an alveolar stop /t/ in Lari Sindhi (Noor et al.[13]). This phonetic distribution has been due to contact with languages like Urdu and Punjabi that do not have retroflex consonants (Abbasi & Hussain[14]).

In the case of conversion, the role of regional dialect affects the pronunciation pattern in a great way. For instance, a speaker of Lari Sindhi when facing the retroflex sounds of the Vicholi or Utraadi Sindhi may replace those retroflex phonemes with alveolar or dental phonemes, which is a commonplace if speaking of the general tendency to either restore the complexity of phonetic processes or weaken it. The ob-

served conversion of phonemes of this type occurs due to the phonetic environment of the surrounding language context in the process of speaking.

2.2.3. Aspiration and Dis Aspiration

Vicholi Sindhi seems to use aspiration most especially in the aspirated stops such as /pʰ/, /tʰ/ and /kʰ/. On the other hand, dis aspiration: the absence of aspiration in consonants, is observed in other dialects such as Lari Sindhi, the speech casual, or in a fast-moving situation (Pathan et al.[15]). These differences across dialects make a picture of phonological simplification in less formal variants.

While in colloquial or spoken Sindhi, aspiration can be lost easily, in formal or literary speech, there is a more strict way of preservation of aspiration found in Vicholi Sindhi, wherein this feature has been overemphasized to achieve the honorific status. Aspiration is indeed helpful in determining the variety of the sound inventory of Vicholi Sindhi, which maintains the clear difference between the aspirated consonants. On the other hand, in the Lari and Utraadi varieties, aspiration may be dropped in casual and fast speech or in any situation where the speaker wishes to minimize the distinctions of phonetic nature.

2.2.4. Deletion

Deletion involves the omission of sounds, typically in unstressed syllables or rapid speech (Hayes[16], Odden[17]). In rapid speech, particularly in Vicholi Sindhi, deletion frequently affects unstressed vowels and consonants, contributing to the fluidity of spoken language. This process is especially marked in the processes of clashing of short vowels in spoken Sindhi, which results from everyday idiolectal usage and is responsible for the continuity of spoken Sindhi. Lari Sindhi speakers tend to delete unstressed vowels more often, which are revelatory of the energy that is said to be saved when producing speech (Shar et al.[18]).

Intonation and deletion are noticeable in the spoken Sindhi both in casual and in fast speech. For example, in Vicholi Sindhi, /kʰoɾo/ meaning 'heart', may phonetically reduce to /kʰoɾ/ in casual conversation portions. Likewise, in the Lari Sindhi language, very often the vowels that come in the non-stressed syllables of the words are elided to facilitate ease and smoothness in the flow of communication. However, this phenomenon may occur less often in the formal or slow speech situation, when this kind of error, which interferes with clarity, should not appear.

2.3. Sociolinguistic Factors Influencing Phonological Variation

The phenomenon of variation in the phonological aspect of the Sindhi language is a deeper one encompassing more than mere configuration of sounds. These variations are socio-linguistically motivated to a very high degree, depending on language contact patterns, social status of languages, regional affiliations, and historical antecedents (Shah et al.[19]); Khubchandani[20]). These factors lead to such a plan of phonological characteristics of the various dialects of Sindhi as to give each of them its own phonological personality. In this broader discussion, further analysis is to be made in terms of language contact, social status, and regional affiliation with reference to the phonological processes in the variants of Sindhi.

3. Materials and Methods

3.1. Research Design

This study employs a qualitative exploratory research design, ideal for capturing the intricate details of linguistic variation within specific socio-cultural contexts. According to Hassan[3], qualitative research excels at addressing subtle linguistic phenomena that might otherwise be overlooked in quantitative methods. In this study, the qualitative design was particularly effective in revealing the phonological distinctions among Lari, Vicholi, and Utraadi dialects, as well as the socio-cultural factors shaping these variations. The exploratory nature of the research facilitated an open-ended investigation, allowing for unexpected linguistic features to emerge during the analysis. In addition, the researchers observed the variation because they are native speakers. For example, during interviews and observations, participants often introduced additional phonological variations not explicitly targeted in the research questions, such as region-specific intonational patterns. This flexibility is a key advantage of qualitative research. The study incorporates a comparative phonological analysis. While this methodology draws inspiration from prior research (Amin & Ali[4], Ali[1]), it is specifically tailored to explore the phonological features of Lari, Vicholi, and

Utraadi Sindhi dialects in the context of this study. By comparing the phonological features of the three dialects, this approach enabled the identification of distinct processes such as vowel raising, consonantal substitution, and aspiration. Additionally, the design ensured that both linguistic and socio-cultural factors were addressed comprehensively, providing a holistic understanding of Sindhi dialectal diversity. The findings have implications for language education, media representation, and inter-dialectal communication. For example, understanding the rhythmic intonation patterns of Utraadi can inform teaching strategies for Sindhi as a second language, particularly for learners from other dialectal backgrounds.

3.2. Sampling and Participants

The study employs purposive sampling, a non-probabilistic method widely recognized in sociolinguistic research (Shaikh et al.[21]) and (Ali[1], Amin & Ali[4]). This approach allows for the deliberate selection of participants who best represent the linguistic characteristics of Lari, Vicholi, and Utraadi dialects.

3.3. Sample Size

The sample consists of 30 participants, with ten speakers from each dialect. This size was deemed sufficient for in-depth qualitative analysis, aligning with the recommendations of Hassan[3]. While not statistically representative, this sample provided a rich dataset for exploring phonological variations and their socio-cultural underpinnings.

3.4. Selection Criteria

The following criteria were used to ensure the relevance and diversity of the sample:

1. Native Fluency: Only individuals who identified as native speakers of one of the three dialects were included. This ensured linguistic authenticity and minimized the influence of secondary language acquisition.
2. Age Range: Participants were aged 18 to 50 years, representing a balance between older speakers, who tend to retain traditional phonological features, and younger speakers, who might be influenced by modern linguistic trends (Shar et al.[18]).
3. Geographic Representation: Participants were required to reside in regions traditionally associated with their dialects:

- Lari: Southern Sindh
- Vicholi: Central Sindh
- Utraadi: Northern Sindh

Diverse Backgrounds: A mix of educational and professional contexts was sought to capture formal and informal speech variations. For instance, including educators and farmers allowed the study to observe language use in both structured and casual communication settings.

3.5. Participant Recruitment

Participants were recruited through local networks, referrals, and community contacts. The recruitment process prioritized individuals with extensive exposure to their dialects in daily life. This approach ensured that the sample reflected the linguistic norms of their respective communities, as recommended by Ali[1] and Amin & Ali[4].

3.6. Data Collection Methods

To capture the richness and complexity of phonological variations, the study employed a combination of semi-structured interviews, naturalistic observation, and audio analysis. This multi-method approach ensured a comprehensive dataset, enabling the triangulation of findings for greater validity and reliability (Ali[1], Hassan[3], Amin & Ali[4]).

3.7. Semi-Structured Interviews

Semi-structured interviews were chosen for their flexibility, allowing researchers to probe deeper into specific phonological features while maintaining a consistent framework for comparison (Ali[1], Amin & Ali[4]).

3.7.1. Interview Format

The interviews were designed to explore participants' use of specific phonological processes, such as vowel raising, aspiration, nasalization, and consonantal substitution. Questions were open-ended to encourage detailed responses, and follow-up questions were used to clarify and expand on participants' initial answers.

3.7.2. Examples of Questions

- How do you pronounce words containing aspirated sounds, such as /ʤh/ in your dialect?
- Do you notice differences in pronunciation when speaking formally versus informally?
- Are there specific words or phrases unique to your dialect that differ from standard Sindhi?

3.7.3. Audio Recording

All interviews were recorded with participants' consent, ensuring the accuracy of phonetic analysis. The recordings provided a valuable resource for revisiting and re-analyzing the data, particularly for identifying subtle phonological patterns.

The interviews aim to reveal significant phonological patterns, such as the tendency of Lari speakers to substitute aspirated sounds with unaspirated ones. This phenomenon, as discussed by Ali[1] and Amin & Ali[4] indicates the influence of regional linguistic norms on phonological processes.

3.8. Comparative Analysis

A comparative linguistic analysis was conducted to highlight distinctions among the three dialects. This approach builds on the methodologies used by Ali[1], Hassan[3], and Amin & Ali[4].

Key Comparisons:

- Lari's substitution of aspirated sounds (e.g., /ʤh/ to /ʤ/) with Vicholi's retention of aspiration.
- Utraadi's use of nasalization compared to Lari's vowel raising and Vicholi's standard forms.
- Differences in intonation patterns, with Utraadi exhibiting a rhythmic pitch variation absent in the other two dialects (Arslan et al.[9]).

The comparative analysis not only identified phonological distinctions but also contextualized these differences within the socio-linguistic environments of each dialect.

3.9. Analytical Framework

The data were analyzed using a combined phonological and socio-linguistic framework. This approach ensures a comprehensive understanding of both the linguistic and cultural factors influencing phonological variation (Shar et al.[16]).

Phonological Analysis:

- Focused on identifying and categorizing phonological processes, such as insertion, deletion, and substitution.

Socio-Linguistic Analysis:

- Examined the impact of social factors, such as education, profession, and regional identity, on phonological practices.
- Considered historical and geographical influences, as highlighted by Ali[1] and Amin & Ali[4].

The integration of these analytical approaches provided a nuanced understanding of Sindhi dialectal variations.

3.10. Data Validation

In order to avoid any social worker bias in the results, triangulation was done. This includes matching information gotten from the conducted interviews, observation and review of literature (Ali[1], Hassan[3], Amin & Ali[4]). Further, the identified phonological patterns were also confirmed with phonological experts and with the references of Sindhi language dictionaries available online.

3.11. Ethical Considerations

Consequently, before collecting data, ethical approval is sought from the appropriate authorities to adhere to research ethics requirements. Participants provide informed consent, ensuring they understand the purpose of the study and their right to withdraw at any time. The participants' identities remain anonymous and are identified only by reference numbers, as recommended by Ali[1] and Amin & Ali[4].

3.12. Limitations

While this study provides valuable insights into Sindhi dialectal variations, several limitations must be acknowledged:

- The qualitative nature of the study limits its generalizability to the broader Sindhi-speaking population.
- The small sample size, though sufficient for in-depth analysis, may not capture all phonological variations

across the dialects.

- The focus on three dialects excludes other Sindhi dialects, which may exhibit unique phonological features.

These limitations highlight the need for further research on Sindhi dialectology, particularly using larger samples and more diverse methodologies.

4. Results and Discussion

4.1. Overview of Phonological Variations

Phonological diversity among Sindhi dialects—Lari, Vicholi, and Utraadi—reveals significant variations in phoneme usage, pronunciation patterns, and phonetic transformations. These differences arise due to socio-linguistic, historical, and regional influences. Understanding these phonological variations helps in gaining insights into dialectal evolution, regional identity, and linguistic shifts. This chapter systematically examines the phonological processes present in each dialect, comparing them with standard Sindhi (Vicholi) to highlight key linguistic contrasts.

The phonological system of Sindhi dialects includes various phonetic transformations such as the addition, deletion, and modification of consonantal and vowel sounds. Among these, Utraadi and Lari exhibit significant deviations from Vicholi, which is considered the standard form. One of the notable phonetic changes includes the addition of the 'r' sound by Utraadi speakers, a feature that sets them apart from Vicholi and Lari speakers.

4.2. Phonetic Additions and Deletions

Phonetic additions and deletions represent a significant aspect of phonological variation in Sindhi dialects. These changes affect the pronunciation, articulation, and meaning of words, often reflecting historical language evolution and socio-linguistic influences.

4.3. Addition of the 'r' Rhotic Sound (Rhoticity) by Utraadi Speakers

One of the most striking phonetic variations in Utraadi Sindhi is the addition of an 'r' sound at the end of words that maintain a standard pronunciation in Vicholi and Lari. This feature differentiates Utraadi from the other dialects and contributes to the uniqueness of its phonetic structure.

The following table (**Table 1**) illustrates this phonetic addition across the three dialects:

Table 1. Addition of the 'r' Rhotic Sound (Rhoticity).

Sindhi Script	Vicholi	Phonetic Transcription	Lari	Phonetic Transcription	Utraadi	Phonetic Transcription	English
پٽ	Put	put̪	Put	put̪	putr	put̪r	Son
مائٽ	Mait	mɑ:ɪt̪	Mait	mɑ:ɪt̪	maitr	mɑ:ɪt̪r	Relatives
ڏاٽو	Dato	ɗɑt̪ɑʊ	Danto	ɗɑt̪ɑʊ	datro	ɗɑt̪rɑʊ	Grass Cutter
کنڊ	Khand	kʰʌɖ	Khand	kʰʌɖ	khandr	kʰʌɖr	Sugar
ڇٽي	Chhati	chɑ:tī	Chhati	chɑ:tī	chhatri	chɑ:trī	Umbrella
چنڊ	Chand	ʧɑ:nɖ	Chand	ʧɑ:nɖ	chandr	ʧɑ:nɖr	Moon
ڊيل	Daeel	ɖɑ:l	Daeel	ɖɑ:l	dareel	ɖrɑ:l	Peahen
ٽي	Tee	ʈī	Tee	ʈī	tre	ʈrī	Three

This phonological feature can be traced back to phonotactic constraints within the Utraadi dialect, which tend to insert the additional 'r' sound as a means of balancing consonant clusters and ensuring fluidity in pronunciation. This phenomenon is not just an isolated linguistic development but is deeply rooted in historical and socio-linguistic influences that have shaped the dialect over time.

The tendency to add an 'r' sound in Utraadi Sindhi may be linked to historical phonological stratification in Sindhi speech communities (Bughio[22]), where similar phonetic modifications occur as a result of phonotactic easing. By adding the 'r' sound, speakers ensure that words are pronounced more fluidly, particularly in rapid speech. This adaptation allows for smoother transitions between syllables and reduces articulation difficulties associated with abrupt consonant endings.

Furthermore, this phonetic shift plays a role in dialectal identity, distinguishing Utraadi speakers from those of Vicholi and Lari. It is not uncommon for regional dialects to develop unique phonetic markers as a way of reinforcing

group identity. The insertion of 'r' at the end of certain words may serve as a linguistic signature, signalling membership in the Utraadi-speaking community.

Linguistically, this addition may also be explained by the principle of hypercorrection. Speakers of Utraadi Sindhi, consciously or unconsciously, may insert an 'r' sound in an attempt to create a more distinct or pronounced articulation. This is particularly evident in environments where Utraadi Sindhi is in contact with Vicholi or other dialects, leading to a form of linguistic reinforcement that emphasizes unique phonological traits.

Additionally, historical phonological evolution suggests that such changes often stem from assimilation and compensatory lengthening. The presence of a strong rhotic sound at the end of words may have originated as a compensatory strategy to differentiate word-final syllables that might otherwise become indistinct in connected speech. Over time, this feature could have become a consistent phonetic trait in Utraadi Sindhi, reinforcing its phonological distinctiveness.

From a socio-linguistic perspective, phonological features such as this are often linked to regional prestige and language attitudes. In many speech communities, certain phonetic traits become associated with cultural authenticity or linguistic purism. The addition of 'r' may be perceived by Utraadi speakers as a marker of their distinct heritage, reinforcing the dialect's status as an important linguistic variety within the broader Sindhi language spectrum.

Phonological variation of this kind also has implications for language standardization and mutual intelligibility. While Vicholi Sindhi serves as the standard dialect for education, media, and official communication, phonetic deviations like the addition of 'r' in Utraadi Sindhi can sometimes lead to comprehension challenges. Speakers of Vicholi and Lari Sindhi might initially find certain Utraadi pronunciations unfamiliar, particularly in formal or written contexts where phonetic variations are less prevalent. However, within informal or conversational settings, these phonetic additions generally do not pose significant barriers to communication. In addition to sociolinguistic and historical factors, phonetic studies suggest that the addition of 'r' in Utraadi Sindhi aligns with broader phonological trends observed in other Indo-Aryan languages. Similar phonetic transformations can be found in languages like Marathi and Gujarati, where word-final consonants are often modified to facilitate articulation. The presence of such patterns across related languages highlights the interconnected nature of phonological evolution and the role of linguistic convergence in shaping dialectal diversity.

4.4. Deletion of the 'h' Sound by Lari Speakers

Lari speakers often omit the 'h' aspiration in words where it is retained in both Vicholi and Utraadi. This phonetic simplification is a key distinguishing feature of the Lari dialect and occurs in both word-initial and word-medial positions. The deletion of 'h' results in a smoother, more fluid pronunciation that aligns with the phonological tendencies of Lari Sindhi.

The following table (**Table 2**) illustrates this deletion across the three dialects:

Table 2. Deletion of the 'h' sound.

Sindhi Script	Vicholi	Phonetic Transcription	Lari	Phonetic Transcription	Utraadi	Phonetic Transcription	English
چڑھڻ	Charharn	ʧəɽhən̪	carharn	ʧəɽən̪	charharn	ʧəɽhən̪	Climb
آهيان	Ahyan	ɑ:hi:ja:n	Ayan	ɑ:ja:n	ahyan	ɑ:hi:ja:n	Am
ٻاهر	Bhair	ɓ̲ɑ:hır	Bair	ɓ̲ ɑ: r	bhair	ɓ̲ɑ:hır	Outside
لوهه	Hooh	Lo:h	Loo	lo:	looh	lo:h	Iron
چاڑهه	Chaarh	ʧa:ɽh	Char	ʧa:ɽ	chaarh	ʧa:ɽh	To climb

The omission of 'h' in Lari Sindhi reflects broader linguistic tendencies toward phonetic economy, wherein speech sounds that require additional articulation effort are simplified over time. This phenomenon is commonly observed in many languages where specific phonemes undergo weakening or deletion in informal or rapid speech.

One reason for this deletion is that Lari speakers prioritize ease of articulation. The 'h' sound, being a glottal fricative, requires additional airflow and vocal effort. Removing it makes pronunciation smoother and speech more rapid. Such a transformation is often found in dialects that undergo simplification for more efficient communication.

Another contributing factor is the influence of surrounding linguistic environments. Lari Sindhi, spoken predominantly in the southern regions of Sindh, has been in contact with other dialects and languages that favour phonetic simplification. Over generations, the 'h' sound has been dropped in specific lexical items, becoming a systematic feature of the dialect.

Additionally, this deletion can be attributed to historical phonological shifts within Indo-Aryan languages. In many South Asian languages, certain sounds have undergone reduction due to natural linguistic evolution. In Lari Sindhi, this pattern is seen not just in the deletion of 'h' but also in the simplification of consonant clusters and vowel modifications. This phonological variation can sometimes cause intelligibility challenges between dialect speakers. For instance, Vicholi and Utraadi speakers, who retain the 'h' sound, might initially find the Lari pronunciation unfamiliar or ambiguous in cases where the deleted 'h' could change word distinctions. However, within the Lari-speaking community, this deletion poses no difficulty in communication.

4.5. Conversion of the Aspirated Bilabial 'bʱ' to 'b' in Lari Dialect

Phonetic variations play a significant role in distinguishing dialects within the Sindhi language. The Lari and Utraadi dialects, while closely related to the standard Vicholi dialect, exhibit unique phonetic changes that set them apart. These changes occur systematically and provide insight into the linguistic evolution of regional speech patterns. This section examines two notable phonetic substitutions: the conversion of 'bʱ' to 'b' in Lari and the conversion of 'r' to 'l' in Utraadi.

One of the most distinguishing phonetic features of the Lari dialect is the tendency to replace the aspirated /bʱ/ sound with an unaspirated /b/. This phonetic shift is observed across various words and is a defining characteristic of the dialect. Aspirated sounds, which involve the release of a strong breathy exhalation, are often replaced with their unaspirated counterparts, making the pronunciation more straightforward.

The following table (**Table 3**) illustrates examples of this substitution:

Table 3. Conversion of the aspirated bilabial 'bʱ' to 'b'.

Sindhi Script	Vicholi	Phonetic Transcription	Lari	Phonetic Transcription	Utraadi	Phonetic Transcription	English
ڀاءُ	Bhau	b̪ʱāu	bau	Bāu	Bhau	bhāu	Brother
اڀارڻ	Abarrn	ʊb̪ʱɑ:rāɳ	abarrn	ʊbɑ:rāɳ	Abarrn	ʊb̪ʱɑ:rāɳ	Boil
نڀاڻ	Nabharrn	nɪb̪ʱɑ:ɪ̱ ɳ	nabarrn	nɪ̱bɑ:ɪŋ	nabharrn	nɪb̪ʱɑ:ɪ̱ ɳ	To carry out
لڀڻ	Labhrrn	lɑ:b̪ʱɑ:ɳ	labrrn	lɑ:bɑ:ɳ	Labhrrn	lɑ:b̪ʱɑ:ɳ	To find

The phonetic change from /bʱ/ to /b/ in Lari simplifies pronunciation, possibly as a result of linguistic efficiency and ease of articulation. Since aspirated consonants require more breath control, their replacement with unaspirated sounds makes speech smoother and less effortful.

4.6. Aspiration and Dis Aspiration in Lari Dialect

One of the most distinct phonological features of the Lari dialect is disaspiration—the removal of aspirated consonants such as gʰ, ʤʰ, ɖʱ, ʈʱ, and bʱ. Lari speakers simplify these aspirated sounds into their unaspirated counterparts (g, ʤ, ɖ, ʈ, and b), making their pronunciation different from Vicholi and Utraadi speakers.

The following table (**Table 4**) illustrates examples of this aspiration and dis aspiration

4.7. Socio-Linguistic Factors Influencing Phonology

The socio-linguistic dimension of phonological variation plays a crucial role in shaping dialectal distinctions. Language is deeply tied to identity, and phonetic differences among Sindhi dialects serve as markers of regional belonging and cultural heritage. Vicholi, as the standardized dialect, holds linguistic prestige due to its dominance in education, media, and governmental institutions. This status has led to socio-linguistic stratification, where speakers of Lari and Utraadi may perceive their dialectal variations as less prestigious.

Standardization has its benefits, such as facilitating communication and preserving linguistic cohesion, but it also

risks marginalizing non-standard dialects. The lack of formal representation of Lari and Utraadi in educational curricula and official discourse raises concerns about the preservation of Sindhi linguistic heritage. As a result, speakers of these dialects may experience linguistic insecurity, which could lead to language shift or dialect leveling over time.

Table 4. Aspiration and Dis aspiration.

Sindhi Script	Vicholi	Phonetic Transcription	Lari	Phonetic Transcription	Utraadi	Phonetic Transcription	English
ڊگھو	Digho	d̪ɪgʰəo	digo	d̪ɪgəo	digho	d̪ɪgʰəo	Tall
گھر	Ghar	gʰər	gar	gər	ghar	gʰər	House
گھڻو	Gharno	gʰəɳ̪ õ:	garno	gəɳ̪õ:	gharno	gʰəɳ̪ õ:	A lot/many
گھوڙو	Gharo	gʰəɽo:	garo	gəɽo:	gharo	gʰəɽo:	Horse
ڪڍ	Kadh	kʌd̪ʱ	kad	kʌd̪	kadh	kʌd̪ʱ	Remove/pull out
ننڍو	Nandho	nənd̪ʱo:	nando	nənd̪o:	nandho	nənd̪ʱo:	Small
چڑھيو	Charhyo	ʧəɽʱi:jo:	charyo	ʧəɽi:jo:	charhyo	ʧəɽʱi:jo:	Climb
ماڻهو	Marhu	mɑ:ɽho:n	maru	mɑ:ɽo:n	marhu	mɑ:ɽho:n	Person
لڌو	Ladho	lʌd̪ʱo:	lado	lʌd̪o:	ladho	lʌd̪ʱo:	Found
پنڌ	Pandh	pʌnd̪ʱ	pand	pʌnd̪	pandh	pʌnd̪ʱ	Walk/Distance
ڀاء	Bhau	bʱɑ:u:	bau	bɑ:u:	bhau	bʱɑ:u:	Brother
ڀريو	Bharyo	bʱɜ:ri:jo:	baryo	bɜ:ri:jo:	bharyo	bʱɜ:ri:jo:	Filled
ڀيڻ	Bhearn	bʱæ̃:ɳ	bearn	bæ̃:ɳ	bhearn	bʱæ̃:ɳ	Sister
پڻهي	Pirhaen	pɪɽhæ̃:	piraen	pɪɽæ̃:	pirhaen	pɪɽhæ̃:	Father

5. Discussion

5.1. Overview of Phonological Variations

The study of phonological diversity among the three primary Sindhi dialects—Lari, Vicholi, and Utraadi—has provided valuable insights into the linguistic landscape of Sindhi. These dialects exhibit distinct phonetic modifications, including vowel variations, consonantal shifts, and phonotactic restructuring. The research has revealed how regional identity, historical linguistic interactions, and sociocultural influences shape the phonological features of these dialects. By analyzing these phonetic characteristics, this study contributes to the understanding of how dialectal variations persist and evolve over time.

5.2. Phonetic Distinctions Across Dialects

One of the most significant findings of this research is the phonetic distinction between Lari and Vicholi, particularly in the simplification of consonantal clusters and vowel structures. Lari speakers tend to omit aspirated consonants, replacing them with their unaspirated counterparts, which contributes to a smoother and more rapid articulation. This pattern of phonetic simplification aligns with broader linguistic trends in phonological economy, where dialects tend to simplify articulation for ease of communication.

Utraadi, on the other hand, exhibits unique phonetic additions, including the insertion of the rhotic (/r/) sound in word-final positions, a phenomenon absent in Vicholi and Lari. This addition serves as a linguistic marker of regional identity and highlights the influence of historical language contact on phonological shifts. The presence of consonantal and vowel shifts in Utraadi suggests that the dialect has undergone phonological modifications influenced by neighboring languages such as Punjabi and Hindko. Differences in phonological realization may also vary across gender and exposure levels (Joyo & Memon [23]).

5.3. Socio-Linguistic Factors Influencing Phonology

The socio-linguistic dimension of phonological variation plays a crucial role in shaping dialectal distinctions. Language is deeply tied to identity, and phonetic differences among Sindhi dialects serve as markers of regional belonging and cultural heritage. Vicholi, as the standardized dialect, holds linguistic prestige due to its dominance in education, media, and governmental institutions. This status has led to socio-linguistic stratification, where speakers of Lari and Utraadi may perceive their dialectal variations as less prestigious. Contemporary bilingual contexts, especially among

Sindhi speakers who use English as a second language, further contribute to such phonological variation (Rehan et al.[24]). Standardization has its benefits, such as facilitating communication and preserving linguistic cohesion, but it also risks marginalizing non-standard dialects. The lack of formal representation of Lari and Utraadi in educational curricula and official discourse raises concerns about the preservation of Sindhi linguistic heritage. As a result, speakers of these dialects may experience linguistic insecurity, which could lead to language shift or dialect leveling over time.

6. Conclusions

In conclusion, the phonological variations among Lari, Vicholi, and Utraadi Sindhi dialects provide valuable insights into the dynamic nature of linguistic evolution. These variations, shaped by historical, socio-cultural, and phonetic factors, highlight the importance of preserving dialectal diversity. While Vicholi serves as the standardized form, Lari and Utraadi contribute to the linguistic richness of Sindhi by reflecting the historical and cultural landscape of its speakers.

Implications for Language Education and Media

The phonological variations observed in Sindhi dialects have implications beyond linguistic research acknowledged to foster linguistic inclusivity (Talpur et al.[25]). In educational contexts, these dialectal differences must be acknowledged to foster linguistic inclusivity. Currently, Sindhi language instruction is primarily based on Vicholi phonology, which may create challenges for Lari and Utraadi speakers. Educational materials should reflect dialectal diversity to ensure that students from non-Vicholi backgrounds do not experience linguistic disadvantages. Additionally, media representation of dialectal variations can promote linguistic equity and preserve Sindhi phonetic diversity. The inclusion of Lari and Utraadi dialectal features in broadcasting, literature, and digital content can help create a more comprehensive understanding of Sindhi's linguistic richness. Enhancing media representation of regional phonetic traits can contribute to the normalization and acceptance of dialectal differences.

Author Contributions

Conceptualization, M.Q. and R.A.M.; methodology, M.Q.; validation, R.A.M. and G.M.; formal analysis, M.Q.; investigation, M.Q.; resources, R.A.M. and G.M.; data curation, R.A.M.; writing—original draft preparation, M.Q.; writing—review and editing, R.A.M. and G.M.; visualization, R.A.M. and G.M.; supervision, R.A.M.; project administration, R.A.M. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data will be available upon request.

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Conflicts of Interest

The authors declare no conflict of interest.

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