

TRANSITION FROM HOLOPHRASTIC TO TELEGRAPHIC STAGE: URDU L2 ACQUISITION IN A PREDOMINANTLY PUNJABI-SPEAKING ENVIRONMENT

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ABSTRACT

Children in Pakistan grow up mostly in bilingual or multilingual environments, where they tend to make unique phonological errors as they acquire Urdu as a second language. This research aimed to identify and examine the phonological errors made by children while transitioning from holophrastic to the telegraphic stage in a predominantly Punjabi-speaking environment. For this small-scale observational research study, convenience sampling was used to collect data from 9 children, aged 12 to 30 months, across three phases. The research findings reveal that the most dominant theme in the children's language errors was 'segmental sound errors', with consonant substitution being the most frequent phonological error. The analysis of phonological errors during the transition from the holophrastic to the telegraphic stage offers valuable insights into the acquisition of Urdu as a second language. It also highlights the strategies such as syllable/sound omission, consonant substitution, and consonant cluster simplification, children adopt to overcome phonological challenges.

Keywords: Phonological Errors, Holophrastic Stage, Telegraphic Stage, Urdu, Second Language Acquisition

INTRODUCTION

Language acquisition is a dynamic process involving passive learning, particularly when a child is raised in an environment exposed to more than one language. Linguistic development often involves unique patterns and language errors in speech, especially in a multilingual or bilingual environment (Long, Granena, & Yilmaz, 2016). In Pakistan, children are exposed to multiple languages as they are raised in bilingual and sometimes multilingual settings such as Punjabi-Urdu families (Shah, & Anwar, 2015). The diversity in learning

language impacts their acquisition of Urdu phonological structures, which they acquire as a second language (L2) instead of a mother tongue. In the process of language development, children pass through typical stages of transition that include the holophrastic (one-word) and telegraphic (two to three-word) stages. The examination of phonological errors made by the children during such transition helps in understanding the complexity of linguistic features in L2 acquisition.

The transition from the holophrastic to telegraphic stages becomes significant due to the phonological challenges experienced by the children. At the holophrastic stage, children typically use one word to convey a complete idea or sentence (Menggo, 2017). For example, the child might use the word “toy” instead of saying “I want my toy” or “Give me my toy.” During the telegraphic stage (from the age of 24 to 30 months), the children start forming sentences by joining two or more words but their utterances remain simplified such as “give toy” instead of fully formed sentences (Halili, 2017). Phonological errors in children’s utterances indicate the gradual shift that helps the researchers understand L2 acquisition (Mehawesh, 2014).

Urdu's rich phonological structures present challenges for children in L2 acquisition in an environment where Punjabi is the dominant language, including but not limited to aspirated and geminated sounds as well as retroflex consonants (Sharif, 2015). Considering the phonological inventory, the two languages (Urdu and Punjabi) differ despite being part of the same Indo-Aryan family (Kamran & Saghir, 2019), these differences lead the children to make phonological errors during language acquisition. The research on Hindi, another Indo-Aryan language, by Kaur et al. (2017) demonstrates similar patterns of phonological challenges such as the omission of syllables, the substitution of consonants, and the simplification of consonant clusters. Therefore, phonological development does not occur in isolation, it is interlinked with a variety of other linguistic phenomena necessary for L2 acquisition in children.

Rationale

L1 acquisition in monolingual environments and English as L2 acquisition in bilingual environments have mainly been the focus of the previous research. Limited research has been conducted to understand the acquisition of Urdu phonological structures (Saddiqa, 2018), even though it is acquired as an L2 by the majority of people in Pakistan, a multilingual society. This study addresses the research gap by examining the acquisition of Urdu phonological patterns in children learning it as an L2, specifically in environments where Punjabi is the dominant language.

According to Bari and Ajmal (2016), idiosyncratic simplification patterns are observed in the acquisition of Urdu by children as they transition from the holophrastic to the telegraphic stage. The research aims to identify the types of phonological errors made during these stages and determine the strategies children use to overcome these phonological challenges.

Previous Research

Extensive research exists on L2 acquisition in bilingual and multilingual environments where children are exposed to more than one language as they acquire the target language. Studies suggest that children manage linguistic complexities by employing various strategies in accordance with the challenges they face in their linguistic home environment (Derakhshan & Elham, 2015; Khanam and Hussain, 2017). Phonological challenges arise not only during the holophrastic stage but also when children transition from the holophrastic to telegraphic stages (Naveed & Raza, 2018). Olson (2019) concluded that the transition from the holophrastic to the telegraphic stage is accompanied by simplifications, specifically during L2 acquisition in environments dominated by another language.

Researchers, Malghani and Bano (2020) have found that simplification of consonant clusters, syllable deletion, and sound reduction are common phenomena that occur during the early stages of language acquisition. According to Hassan (2019), unique patterns of phonological errors are observed during the acquisition of Urdu as L2 by children in Pakistan. Besides the key differences, Urdu and Punjabi languages share a high level of phonological similarities and the children experience issues due to language interference (Saleem & Rukh, 2014). The influence of the phonemic inventory of Punjabi on the language acquisition of Urdu is one of the significant examples that can be noticed in the case of the word “cycle/سائیکل” (/saɪkl/) which is pronounced actually in Urdu as /sæɪkəl/ but Punjabi speakers pronounce it /sækəl/ (Hussain, Mahmood & Mahmood, 2011). One of the main focuses of this research is to identify and examine the categories of phonological errors made by children during the acquisition of Urdu. Khan et al. (2018) argue that children, while

progressing from the holophrastic to the telegraphic stage, continue to face difficulties and their speech errors become more apparent, including various types of syllable structure errors. Segawa et al. (2019) conclude their research that consonant cluster errors emerge as children begin to produce longer utterances. Another phonological issue is the omission of one consonant from the consonant cluster, a commonly observed phenomenon exhibited by L2 learners (Ranjha, 2014). Mathur and Banik (2016) researched the L2 acquisition of Hindi which is similar to Urdu, and concluded that consonant substitutions were commonly observed in children's speech.

Natural Phonology Theory

This research is grounded in the Natural Phonology Theory, developed by Donegan and Stampe (1979, 2009). Donegan and Stampe (2009) state that phonological processes occur in response to the difficulties children experience when producing different sounds. The theory further emphasizes that there is no need for children to learn such phonological processes because they occur universally and are a built-in part of phonological development.

This framework theorizes that children simplify phonological structures when encountering challenging sound patterns while developing their vocal apparatus to overcome linguistic challenges in their target language. Natural Phonology Theory relates to L2 acquisition as it explains the phonological processes as natural responses to ease the difficulties children face when acquiring unfamiliar sounds (Donegan & Nathan, 2015). The theory explains that the simplification of phonological structures by L2 learners occurs naturally when difficult sound patterns are substituted with comparatively easier sounds (Pepito, 2019).

Methods

This is a small-scale observational study to examine the phonological errors in children's speech while they acquire Urdu as L2 in a predominantly Punjabi-speaking home environment. A

convenience sampling procedure is used to select participants for this study.

Study Sample

This study selected nine children and divided them into three age groups to collect data in three phases. During the first phase (initial phase of the holophrastic stage), data were collected from three children aged 12 to 18 months. For the second phase of the holophrastic stage, data collection involved three children aged 18 to 24 months. Finally, for the telegraphic stage (third phase), data were collected from three children aged 24 to 30 months.

Data Collection

Data were collected using two primary methods:

- **Audio recordings:**

Audio recordings were used to capture the children's utterances during the observation period.

- **Field notes:**

Field notes were taken to provide a detailed account of the context and behaviors observed in the home environment, enriching the understanding of the phonological errors in their natural settings.

Data Processing

The recorded utterances were transcribed into Urdu script and subsequently translated into English. The transcriptions were then analyzed using the International Phonetic Alphabet (IPA) to identify phonological errors. This process allowed for a thematic analysis of the various types of phonological challenges encountered by the children as they progressed from the holophrastic to the telegraphic stages of L2 acquisition. The study focused on categorizing and understanding the strategies children adopted to overcome these errors.

Findings of the Study

As shown in Table 1, this research identified three major themes from twelve types of phonological errors made by the participants: syllable structure errors, segmental sound errors, and consonant cluster errors, with segmental sound errors being the most dominant. Of the twelve error types, only four persisted in the telegraphic stage.

Table 1: Phonological error types

| Sr.# | Error Type | Themes | No of Errors (Age Group 12 - 18 Months) | No of Errors (Age Group 18 - 24 Months) | No of Errors (Age Group 24 - 30 Months) |
|------|-------------------------------------|----------------------|---|---|---|
| 1 | Syllable Modification Error | | 0 | 1 | 2 |
| 2 | Syllable Production Error | Syllable | 1 | 0 | 0 |
| 3 | Syllable Reduction | Structure | 2 | 2 | 0 |
| 4 | Initial Syllable Deletion | Error | 2 | 1 | 0 |
| 5 | Syllable Merger | | 0 | 2 | 0 |
| 6 | Initial Vowel Omission | | 0 | 1 | 0 |
| 7 | Consonant Deletion | Segmental | 2 | 2 | 0 |
| 8 | Consonant Production Error | Sound | 1 | 0 | 2 |
| 9 | Consonant Substitution | Errors | 0 | 9 | 14 |
| 10 | Consonant Modification | | 0 | 1 | 0 |
| 11 | Final Consonant Cluster Deletion | Consonant Cluster | 1 | 0 | 0 |
| 12 | Consonant Cluster Reduction | Errors | 0 | 0 | 2 |

Following phonological errors are recorded during the first phase of the holophrastic stage:

Syllable production error

More complex errors were also observed, such as /da:/ for /dɒl/ ("doll ڈول"), where the final consonant /l/ is deleted, and the vowel /ɒ/ is replaced with /a:/. This results in a syllable production error, as both consonant deletion and vowel substitution disrupt the production of the syllable.

Final consonant cluster deletion

Another unique error happened when the child uttered /ɖu:/ instead of /ɖu:ɖɦ/ ("milk دُودھ") while the final consonant cluster /ɖɦ/ was deleted.

Syllable reduction

As shown in Table 2, errors like /ba:/ for /ba:ba:/ ("father با با") and /ja/ for /bɦəja/ ("brother بھیا") are

examples of syllable reduction observed during the first phase of the telegraphic stage. The children dropped one of the syllables, resulting in simplified word forms. In these cases, the second syllable was omitted in /ba:ba:/, and the first syllable was omitted in /bɦəja/ demonstrating early-stage attempts to simplify multisyllabic words. Syllable reduction also played a significant role during the second phase of the holophrastic stage. For example, in /la:s/ for /gila:s/ ("glass گلاس"), the entire first syllable /gɪ/ was dropped, resulting in a simpler form. A similar reduction occurred with /baɪ/ for /moʊbaɪ/ ("mobile موبائل"), where the first syllable /moʊ/ was deleted, significantly reducing the complexity of the word.

Table 2: The first phase of the holophrastic stage

| Urdu (Before Correction) | Urdu (Corrected) | English Translation | IPA Transcription Before Correction | IPA Transcription after Correction | Type of Error |
|--------------------------|------------------|---------------------|-------------------------------------|------------------------------------|----------------------------------|
| می | امی | Mother | /m:i:/ | /ə.m:i:/ | Initial Syllable Deletion |
| با | با با | Father | /ba:/ | /ba:ba:/ | Syllable Reduction |
| دُو | دُودھ | Milk | /ɖu:/ | /ɖu:ɖɦ/ | Final Consonant Cluster Deletion |
| کا | کار | Car | /ka:/ | /ka:r/ | Final Consonant Deletion |
| یا | بھیا | Brother | /ja/ | /bɦəja/ | Syllable Reduction |

| | | | | | |
|----|-----|-------|-------|---------|----------------------------|
| پی | آپی | Elder | /pi:/ | /a:pi:/ | Initial Syllable Deletion |
| ڈا | ڈول | Doll | /da:/ | /dɒl/ | Syllable Structure Error |
| م | مم | Water | /mə/ | /məm/ | Final Consonant Deletion |
| ای | چیز | Candy | /i:/ | /tʃi:z/ | Consonant Production Error |

Following are the error types recorded during both phases of the holophrastic stage:

Initial syllable deletion

Errors like /m:i:/ for /ə.m:i:/ ("mother امی") and /pi:/ for /a:pi:/ ("elder sister آپی") reveal initial syllable deletion, where the initial syllable /ə/ and /a:/ are dropped respectively by the children in the first phase of the holophrastic stage.

In the second phase, it was observed that /nəma:z/ ("prayer" نماز) was mispronounced as /ma:dʒ/ where the first syllable /nə/ is completely omitted, and the voiced alveolar fricative /z/ was substituted with the voiced postalveolar affricate /dʒ/.

Final consonant deletion

As observed during the first phase, instances of final consonant deletion were prevalent. For example,

/ka:/ for /kɑ:r/ ("car کار") shows the children omitting the final consonant /r/ (voiced alveolar approximant). Another instance of final consonant deletion occurred when the child dropped the final /m/ while pronouncing the label word /məm/ (مم) for water. These deletions simplify the word by removing the final consonant, a common strategy in early speech to reduce the complexity of pronunciation.

Table 3 shows that consonant deletion was observed in two more cases in the second phase. The children omitted a critical consonant from the word. For instance, in /gəmi:/ for /gərmi:/ ("hot گرمی"), the child dropped the final consonant /r/ in the first syllable, simplifying the structure. Another example is /kəpeɪ/ for /kəpɾeɪ/ ("clothes"), where the retroflex initial consonant /ɾ/ was dropped from the second syllable.

Table 3: The second phase of the holophrastic stage

| Urdu (Before Correction) | Urdu (Corrected) | English Translation | IPA Transcription Before Correction | IPA Transcription after Correction | Type of Error |
|--------------------------|------------------|---------------------|-------------------------------------|------------------------------------|----------------------------|
| گورا | گھوڑا | Horse | /gora:/ | /gʱoɾa:/ | Consonant Modification |
| بولے مون | ڈورے مون | Cartoon character | /boleɪ mon/ | /dɔreɪ mon/ | Consonant Substitution |
| او | آؤ | Come | /o/ | /a:o/ | Initial Vowel Omission |
| با ما | با با | Father | /ba:.ma:/ | /ba:.ba:/ | Consonant Substitution |
| بار | باہر | outside | /ba:r/ | /ba: fɪr/ | Syllable Merger |
| چولو | چھوڑو | leave it | /tʃolo/ | /tʃʱoɾo/ | Consonant Substitution |
| ماماچی | ماماجی | Mother | /ma:ma: tʃi:/ | /ma:ma: dʒi:/ | Consonant Substitution |
| کا | کیا | What | /ka:/ | /kija:/ | Syllable Merger |
| دانا | گانا | Song | /ɖa:na:/ | /ga:na:/ | Consonant Substitution |
| لاس | گلاس | Glass | /la:s/ | /gɪla:s/ | Syllable Reduction |
| پانی | پانی | Water | /ba:ni:/ | /pa:ni:/ | Consonant Substitution |
| لوٹی | روٹی | Bread | /loʈi:/ | /roʈi:/ | Consonant Substitution |
| ماج | نماز | Prayer | /ma:dʒ/ | /nəma:z/ | Syllable Structure Error |
| گمی | گرمی | Hot | /gəmi:/ | /gərmi:/ | Final Consonant Deletion |
| اے شی | اے سی | AC | /eɪ ʃi:/ | /eɪ si:/ | Consonant Substitution |
| کپے | کپڑے | Clothes | /kəpeɪ/ | /kəpɾeɪ/ | Initial Consonant Deletion |
| ارو | الو | Potato | /a:ru/ | /a:lu/ | Consonant Substitution |

| بائل بوتلا | موبائل بوتل | Mobile Bottle | /baɪl/ /boʊtəːl/ | /ˈmoʊbaɪl/ /boʊtəl/ | Syllable Reduction Syllable Structure Error |
|---------------|----------------|------------------|---------------------|------------------------|--|
|---------------|----------------|------------------|---------------------|------------------------|--|

The following three error types are recorded only during the second phase of the holophrastic stage:

Syllable merger

Some more complex processes like syllable merger were also identified. For example, /ba:r/ for /ba: fɪr/ ("outside" با پر) merged the two syllables into one by dropping /fɪ/ and /r/, combining the elements of both syllables into one as shown in Table 3. When uttering /kɪja:/ ("what" کیا) the child dropped the vowel /ɪ/ of the first syllable and the voiced palatal approximant /j/ of the second syllable and then joined the remains of both syllables to form /ka:/.

Initial vowel omission

The children tend to omit the initial vowel of the single-syllable word. The data, in Table 3, show that the word /a:o/ ("come" آو) was mispronounced as /o/ after dropping the initial vowel /a:/.

Consonant modification

As recorded in Table 3, consonant modification was one of the most unique types of errors during this stage, including /gora:/ for /gʱoɾa:/ ("horse" گھوڑا). The child dropped the voiced glottal fricative /h/ from the first syllable and replaced the initial consonant /t/ (of the second syllable) with the voiced alveolar approximant /r/.

Following are the types of errors, common in the second phase of the holophrastic and telegraphic stage:

Syllable modification error

The word /boʊtəːl/ for /boʊtəl/ ("bottle" بوتل) indicates the final consonant dropping in the second syllable, with the deletion of /l/, and vowel substitution, where /ə/ was replaced with /a:/ hence modifying the final syllable of the target word /boʊtəl/.

Syllable modification errors that happened during the telegraphic stage:

Syllable modification errors in syllable structure also appeared during the telegraphic stage. For example, /gai: fɪr/ for /ga:ɾi: fɪr/ ("This is a car." گاری ہے) reflects the deletion of the retroflex /ɾ/ and the geminated vowel /a:/, altering the syllable

structure. In /n: kɛɪltə/ for /nəɦi: kɦeɪltə/ ("don't want to play" نہیں کھیلنا), the child drops both weak vowel /ə/ and voiced glottal fricative /ɦ/ sounds, and substitutes consonant cluster /kɦ/ with voiceless velar plosive /k/, further reflecting attempts to simplify word formation. In both cases, the child modifies the syllable (s) while trying to produce the target words.

Consonant substitution

Consonant substitution was one of the most frequent error types during this stage. Examples include /gora:/ for /gʱoɾa:/ ("horse" گھوڑا), where the child dropped the voiced glottal fricative /ɦ/ and replaced /ɾ/ with voiced alveolar approximant /r/. Similarly, in /boɪɪ mon/ for /dɔɪɪ mon/ (a cartoon character ڈورے مون), the child substituted the voiced retroflex /d/ with /b/ and /r/ with /l/. This pattern of consonant substitution continued with words like /ma:ma: tʃi:/ for /ma:ma: dʒi:/, where the voiced postalveolar affricate /dʒ/ was replaced by voiceless postalveolar affricate /tʃ/.

In /loʊti:/ for /roʊti:/ ("bread" روٹی) and /tʃolo/ for /tʃɦoɾo/ ("leave it" چھوڑو), the lateral consonant /l/ replaced the voiced alveolar approximant /r/ and the voiced retroflex /ɾ/, respectively whereas /ɦ/ is dropped by the child while pronouncing /tʃɦoɾo/. Conversely, in /a:ru/ for /a:lu/ ("potato" آلو), the consonant /l/ was replaced by /r/. The child substituted the voiced velar plosive /g/ with /d/ when saying /da:na:/ instead of /ga:na:/ ("song" گانا). Similarly, in /ba:ni:/ for /pa:ni:/ ("water" پانی), /p/ was replaced with /b/. While referring to /eɪ si:/ ("AC" اے سی), the child uttered /eɪ ʃi:/, where the consonant /s/ was replaced with /ʃ/. The same is the case with /ba:ma:/ pronounced by the child when trying to say /ba:ba:/ (father با), where the bilabial consonant /m/ substitutes another bilabial consonant /b/.

Following errors of Consonant Substitution happened on the Telegraphic Stage:

Consonant substitution was a dominant error type during this stage, observed in multiple instances. For example, /tə:tʊ: a:eɪ/ for /tʃa:tʃu: a:eɪ/ ("uncle has arrived" چاچو آئے) and /nə kɦi:ntʃo/ for /nə kɦi:ntʃo/ ("Don't pull" نہ کھینچو) show the

replacement of /tʃ/ with /t/, a common simplification of complex consonant clusters.

Another case, /je ma:ɾta: fiaɪ/ for /je ma:ɾta: fiaɪ/ ("he hits" (یہ مارتا ہے) and /əlla:h pəlɦio/ for /əlla:h pəɾɦio/ ("Recite Allah" (اللہ پڑھو)) involves the substitution of /t/ for /r/ and /l/ for /ɾ/ respectively, reflecting difficulties in producing more challenging sounds. In /ɪdɦəl a:o/ for /ɪdɦəɾ a:o/ ("Come here" (ادھر آؤ)), /ʃol fiaɪ/ for /ʃor fiaɪ/ ("Its noisy" (شور ہے)) and /meli: ba:l/ for /meri: ba:l/ ("My ball" (میری بال)), voiced

alveolar approximant /r/ took the place of voiced alveolar lateral approximant /l/.

The data show three instances such as the child uttered /bɦia:ɗo/ instead of /bɦia:go/ ("run" (بھاگو)) and spoke /ɦeɦia: a:ɗai:/ rather than /feɦia: a:gai:/ ("Faiha has come" (فیہا آگئی)) where voiced velar plosive /g/ was substituted with voiced dental plosive /ɗ/ in both utterances of two children. However, the voiceless labiodental fricative /f/ in /feɦia:/ was replaced with the voiceless dental fricative /θ/ and was mispronounced as /ɦeɦia:./.

Table 4: Phonological errors made by children in the telegraphic stage

| Urdu (Before Correction) | Urdu (Corrected) | English Translation | IPA Transcription Before Correction | IPA Transcription after Correction | Type of Error |
|--------------------------|------------------|--------------------------|-------------------------------------|------------------------------------|-----------------------------|
| ادھل آؤ | ادھر آؤ | Come here | /ɪdɦəl a:o/ | /ɪdɦəɾ a:o/ | Consonant Substitution |
| گای ہے | گاڑی ہے | This is a car. | /gai: fiaɪ/ | /ga:ɾi: fiaɪ/ | Syllable Structure Error |
| کارتون دیکھنا | کارتون دیکھتا | I want to watch cartoons | /ka:ɾu:n dɦeɦkɦta:/ | /ka:ɾtu:n dɦeɦkɦɦta:/ | Consonant Production Error |
| شول ہے | شور ہے | Its noisy | /ʃol fiaɪ/ | /ʃor fiaɪ/ | Consonant Substitution |
| میلی بال | میری بال | My ball | /meli: ba:l/ | /meri: ba:l/ | Consonant Substitution |
| بھادو | بھاگو | Run | /bɦia:ɗo/ | /bɦia:go/ | Consonant Substitution |
| نیں کیلتا | نہیں کھیلتا | Don't want to play | /ñ: keɦɦlɦta/ | /nəɦi: kɦeɦɦlɦta/ | Syllable Structure Error |
| تھیہا آئی | فیہا آگئی | Faiha has come | /ɦeɦɦa: a:ɗai:/ | /feɦɦa: a:gai:/ | Consonant Substitution |
| نہ کھینتو | نہ کھیئو | Don't pull | /nə kɦi:nhɦo/ | /nə kɦi:nhɦfo/ | Consonant Substitution |
| تاتو آئے | چاچو آئے | Uncle has arrived. | /ɦa:ɦu: a:ɦeɦ/ | /ɦa:ɦfu: a:ɦeɦ/ | Consonant Substitution |
| گنا اے | گندا ہے | It's bad | /gəna: fiaɪ/ | /gəndɦa: fiaɪ/ | Consonant Cluster Reduction |
| مانی دو | پانی دو | Give water | /ma:ni: dɦo/ | /pa:ni: dɦo/ | Consonant Substitution |
| اللہ پلھو | اللہ پڑھو | Recite Allah | /əlla:h pəlɦio/ | /əlla:h pəɾɦio/ | Consonant Substitution |
| بایا گئے | بابا گئے | My father has left. | /ba:pa: gəɦeɦ/ | /ba:ba: gəɦeɦ/ | Consonant Substitution |
| یہ مارتا ہے | یہ مارتا ہے | He hits. | /je ma:ɾɦa: fiaɪ/ | /je ma:ɾɦa: fiaɪ/ | Consonant Substitution |
| پارا ہے | پیارا ہے | It's beautiful. | /pa:ra: fiaɪ/ | /pɦa:ra: fiaɪ/ | Consonant Cluster Reduction |

| | | | | | |
|-------------|------------|--------------|----------------|---------------|----------------------------|
| شوتا اوں | سوتا ہوں | I am sleepy. | /ʃoʈa: ũ:/ | /soʈa: fũ:/ | Consonant Production Error |
| میری گار | میری کار | My car | /meeri ga:r/ | /meeri ka:r/ | Consonant Substitution |
| اُسکا تِیلا | اُسکا کیلا | His banana | /ʊska t̪eila:/ | /ʊska keila:/ | Consonant Substitution |
| دے کون | بے کون | Who is this | /d̪ei kon/ | /jei kon/ | Consonant Substitution |

Data, in Table 4, show that children uttered /meeri ga:r/ instead of /meeri ka:r/ ("My car" میری کار) and /ʊska t̪eila:/ in place of /ʊska keila:/ ("His banana" اُسکا کیلا) where substitution happened between voiceless velar plosive /k/ and voiced velar plosive /g/ as well as voiceless velar plosive /k/ and voiced dental plosive /t̪/. In /d̪ei kon/ for /jei kon/ ("Who is this" کون بے) voiced palatal approximant /j/ is replaced with the voiced dental plosive /d̪/.

Data show the substitution of voiceless bilabial plosive /p/ with voiced bilabial nasal /m/ when a child uttered /ma:ni: do/ instead of /pa:ni: do/ ("Give water" پانی دو). Also, in /ba:pa: gaei/ for /ba:ba: gaei/ ("my father has left" بابا گئے), voiced bilabial plosive /b/ was replaced with voiceless bilabial plosive /p/.

The types of errors which only occurred during the telegraphic stage:

Consonant cluster reduction

As shown in the data, consonant cluster reduction is a process where children simplify consonant clusters by omitting one or more consonants. For instance, /gə:n:a: ai/ for /gənda: fia/ ("it's bad" گندا بے) involves the reduction of the consonant cluster /nd/ to voiced alveolar nasal /n/ whereas voiced glottal fricative /ɦ/ (the second syllable) is dropped. Similarly, /pa:ra: fia/ for /pja:ra: fia/ ("it's beautiful" پیارا بے) reduces the consonant cluster /pj/ (voiceless bilabial plosive and voiced palatal approximant) to /p/.

Error types experienced by the children during the first phase of the holophrastic stage as well as in the telegraphic stage are given below:

Consonant production error

Consonant production errors were evident, such as /i:/ for /tʃi:z/ ("candy" چیز), where both the initial consonant /tʃ/ and the final consonant /z/ are omitted. This type of error highlights difficulties with more complex consonant clusters or individual

consonants during this stage of language development.

Consonant production errors at the telegraphic stage

Occurrences of consonant production errors were also observed, especially when the children attempted more complex consonant clusters such as /ʃota: ũ:/ for /sota: fũ:/ ("I am sleepy" ہوں سوتا). It involves substituting voiceless alveolar fricative /s/ with voiceless postalveolar fricative /ʃ/ and dropping the voiced glottal fricative /ɦ/, showcasing the child's difficulty with both producing certain consonants and maintaining the integrity of complex syllable structures. Similarly, /ka:tu:n d̪eik̪ta:/ for /ka:rtu:n d̪eik̪ta:/ ("I want to watch cartoons" کارٹون دیکھتا) shows errors in consonant production, where voiced alveolar approximant /r/ is dropped and consonant cluster /kɦ/ is substituted with voiceless velar plosive /k/.

Thematic Analysis

The data analysis focuses on the phonological errors observed in children spanning ages 12 to 30 months as they transition from the holophrastic stage to the telegraphic stage. The collected data highlights three major themes based on phonological errors: Syllable Structure Errors, Segmental Sound Errors, and Consonant Cluster Errors.

Syllable Structure Errors

Syllable Structure Errors, which include syllable production, syllable modification syllable reduction, syllable merger, and initial syllable deletion errors, demonstrate developmental changes between the holophrastic and telegraphic stages.

Syllable production error

Notably, syllable production error was observed exclusively in the first phase of the Holophrastic Stage, indicating that as children progress beyond

this stage, they typically gain better control over syllable formation.

Syllable modification errors

Occurring once in the second phase of the Holophrastic Stage and twice in the Telegraphic Stage, these errors reflect the children's attempts to modify syllable structures as they experiment with language. This indicates an understanding of syllable construction, even if the execution is flawed. The modification is often due to simplification strategies as children grapple with articulatory demands.

Syllable reduction

The syllable reduction appearing twice in both phases of the Holophrastic Stage indicates that children utilize this strategy as they deal with the complexities of syllable structures during early language development.

Initial syllable deletion

The presence of initial syllable deletion twice in the first phase and once in the second phase of the Holophrastic Stage indicates that children often simplify complex words by omitting initial sounds as they experiment with language.

Syllable merger

The fact that syllable merger occurred twice during the second phase of the Holophrastic Stage indicates that children may attempt to simplify word forms by combining syllables, reflecting their developing phonological processing skills.

The non-occurrence of errors related to Syllable Production, Syllable Reduction, Initial Syllable Deletion, and Syllable Merger in the Telegraphic Stage indicates that as children gain greater mastery over their speech production, they are less likely to resort to such simplification strategies, resulting in more accurate and distinct syllable articulation.

The results, depicted through the Syllable Structure Errors, align with the findings of recent research studies (Malghani & Bano, 2020; Kaur et al., 2017; Khan et al., 2018) examining child language phonology.

Segmental Sound Errors

Segmental Sound Errors, which include consonant production errors, consonant substitutions, consonant modification, consonant deletion, and initial vowel omission, illustrate how children manage the intricacies of consonant sounds during language development.

Consonant production errors

Findings of the present research suggest that children faced issues with consonant production not only during the holophrastic but telegraphic stage as well. For instance, difficulty with the production of the consonants /tʃ/, /z/, and /h/ is an indication of children's struggle in articulating complex consonant sounds. These developmental hurdles indicate the progression in challenging phonetic contexts during the transition from the holophrastic to the telegraphic stages of language acquisition.

Initial vowel omission

Initial vowel omission occurred only once during the second phase of the holophrastic stage which is an indication that the children started simplifying the complex word structures. The absence of such errors in the telegraphic stage is a sign of improvement in phonological development and children's ability to produce accurate syllables.

Consonant deletion

The findings of the research show that the children omit consonants to simplify words in their speech during both phases of the holophrastic stage. However, no such errors are made by the children in the telegraphic stage reflecting the maturation of their phonological skills.

Consonant modification

The consonant alteration is a universal phenomenon that became apparent when the participants experienced complexities of language in the second phase of the holophrastic stage. The child altered the consonants in both syllables of the word /gɦoɽa:/ by simplifying the consonant cluster /gɦ/, omitting the /ɦ/ sound, and replacing the challenging voiced retroflex flap /ɽ/ with the easier-to-produce sound /r/. The rarity of this type of error indicates that the children have started exhibiting their phonological

awareness even before they entered the telegraphic stage.

Consonant substitution

Notably, consonant substitution was the most frequent error, occurring nine times during the second phase of the Holophrastic Stage, and increasing to fourteen instances in the Telegraphic Stage. This is an indication that as children's vocabulary expands, so do their attempts at sound manipulation, leading to a higher frequency of errors. The increase in these errors could indicate children's experimentation with sounds as they develop more robust linguistic skills.

Hence children learn to use simpler sounds in place of difficult phonemes which is in line with Natural Phonology Theory by Stampe (Donegan & Stampe, 2009). The results describing segmental sound errors are not only confirmed by the Natural Phonology Theory but are also consistent with previous research (Ranjha, 2014; Sharif, 2015; Mathur & Banik, 2016).

Consonant Cluster Errors

Consonant cluster errors, particularly consonant cluster reduction, were observed exclusively in the Telegraphic Stage. In the earlier phase of the Holophrastic Stage, producing final consonant clusters proved challenging for the children.

Consonant cluster reduction

The consonant cluster reduction error signifies a child's ability to identify consonant clusters but highlights their struggle with articulating them fully. For example, reducing a cluster from /pja:/ to /pa:/ is a simplification strategy as children attempt to produce longer or more complex sound sequences.

Final consonant cluster reduction

The final consonant cluster deletion appeared solely in the first phase of the Holophrastic Stage and is the reflection of children's tendency to reduce complex clusters as they begin acquiring speech capabilities. These are their early attempts to tackle articulatory challenges associated with producing multiple consonant sounds in succession.

The findings of this research on Consonant Cluster Errors are supported by the research (Kaur et al.,

2017; Segawa et al. 2019; Malghani & Bano, 2020) conducted in recent years.

Dominant Theme and Its Significance

Based on the data, Segmental Sound Errors emerge as the most dominant theme in phonological development. The higher number of consonant substitutions and some production errors, particularly during both phases of the Holophrastic Stage and into the Telegraphic Stage, indicates that mastering individual sounds is a significant challenge for children. This aligns with research (Naveed & Raza, 2018; Khan et al. 2018) suggesting that segmental features may be more complex for young children during the transition from the Holophrastic Stage to the Telegraphic Stage.

The significance of different errors occurring at specific stages highlights the dynamic nature of phonological acquisition. Errors exclusive to the Holophrastic Stage indicate initial attempts to communicate using simplified forms while errors that transition into the Telegraphic Stage suggest that children are ready to experiment with more complex structures but still face articulatory challenges.

Reasons for Phonological Errors and Overcoming Strategies

Phonological errors during these developmental stages can be attributed to several factors:

Articulatory complexity

Many phonemes and clusters require specific articulatory configurations that young children may not yet be capable of producing accurately until the telegraphic stage is over (Safitri, 2020). For instance, consonant cluster errors, such as Final Consonant Cluster Deletion observed during the first phase of the Holophrastic Stage, indicate that children struggle with the fine motor control necessary for producing complex sounds, like /dʒi/. As they progress to the Telegraphic Stage, such errors no longer occur, indicating improved articulatory skills and motor coordination.

Phonological awareness

As children develop phonological awareness, they begin to recognize and manipulate sounds. However, this awareness is still evolving, which

leads to errors as they attempt to implement their growing knowledge. For example, the Initial Syllable Deletion occurred twice during the Holophrastic Stage, demonstrating how children simplify words by omitting initial sounds (e.g., /ə/ and /a:/). As their phonological awareness matures, such errors diminish, reflecting a stronger understanding of sound structures.

Cognitive load

As children's vocabulary expands, they face the cognitive load of processing and producing more complex utterances (Gildersleeve-Neumann, et al. 2009). This increased demand can lead to simplifications as a coping strategy. For instance, the consistent occurrence of Syllable Reduction in both phases of the Holophrastic Stage indicates that children may reduce syllables in words (e.g. /ba:.ba:/ pronounced as /ba:/ and /'moʊbaɪl/ uttered as /baɪl/) to manage their cognitive load. The absence of such errors in the Telegraphic Stage signifies their improved ability to handle complex linguistic demands as their language skills develop.

Strategies Adopted by Children

To deal with phonological challenges, children often employ several strategies. The strategies identified in this research that the participants adopted are outlined below:

- **Simplification:**

Children simplify complex sounds and structures, as seen in the frequency of consonant cluster reductions (e.g., /gəna:/ for /gəŋɖa:/ and /pa:ra:/ for /pja:ra:/) and substitutions (such as substituting /m/ with /b/, /r/ with /l/, /tʃ/ with /t/). This natural tendency allows them to communicate more easily as they build their phonetic inventory.

- **Repetition and Imitation:**

During the process of language acquisition, the children employ the trial-and-error approach while they repeat and imitate sounds acquired from the environment they are surrounded with. As a result, they tend to produce both correct and incorrect reproductions.

- **Overgeneralization:**

Broadening the application of phonological rules acquired by the children leads them to make more errors. As shown by the results of the present study, the substitution of a consonant cluster with a single

consonant such as /p/ for /pj/ and /n/ for /ŋ/ indicates the progress in their phonological awareness. However, the execution can be flawed at this stage.

Limitations and Implications of the Current Research

Being a small-scale observational study, examining the utterances of only nine children is a limitation that restricts the generalizability of the results. The results could be affected and would offer a broader understanding of phonological development among children in L2 acquisition in case of large sample size with diverse demographics.

The execution of this research in a home environment is another limitation as external variables could affect language acquisition. Future researchers may expand on this research in a more structured environment such as preschool to see how language development is influenced by the change in such settings.

Future research may also examine the impact of various other factors that influence L2 acquisition such as demographic details of the caregivers and parents. The educational background of the parents can be one of the most influential factors impacting the language acquisition by children in bilingual environments.

Conclusion

The present research focused on the identification and analysis of the phonological errors made by the children in the acquisition of Urdu as L2 in a predominantly Punjabi-speaking home environment. Segmental sound errors, syllable structure errors, and consonant cluster errors were the identified themes as broader categories of phonological errors found by this research in the recorded speech of nine children. The theme, 'Segmental sound errors', was found the most dominant one, specifically consonant substitution appeared consistently throughout the transition from holophrastic to the telegraphic stages.

As highlighted by the findings of this research, children adopt strategies influenced by natural phonological processes of simplification to overcome challenges in L2 acquisition. These strategies align with the concepts of Natural Phonology Theory (Donegan & Stampe, 1979;

Donegan & Stampe, 2009) such as substituting easier sounds for complex ones during the process of language acquisition. The results of the present research reveal that these coping strategies adopted by the children play a significant role in acquisition of Urdu as L2 in a bilingual home environment where predominantly spoken language is Punjabi.

- The findings of the current research contribute valuable knowledge to the field of acquisition of Urdu as L2 in a bilingual home environment. Specifically, the contribution of this research to understanding phonological development in a diverse linguistic environment should help future research to apply these findings on a broader scale.

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