

Substitution and Deletion in the Speech of Pre-School Missani Iraqi Arabic Children: A Generative Case Study

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Abstract :

The study explores the phonological development of Missani Iraqi Arabic children. The data of this study are twenty-four participants from Arabic language background (native speakers of Arabic). They are from 3 to 6 years of age. The recordings have been collected from these children lasting for about fifteen minutes for each sample, so the whole recording time is ten hours. It is a generative study to explore mainly substitution and deletion. The study includes consonantal segments only; vowel segments are excluded. The study concludes that the main phonological processes of Missani children's speech are substitution and deletion. These processes are made by children in order to make pronunciation easier. The study has displayed that substitution and deletion processes occur in voicing, place of articulation and manner of articulation. Additionally, these processes occur in the speech of children of three to six years of age. Sometimes, some words can be produced with more than one process.

Key words: (Optimality theory, Phonological Development Processes, Substitution, Deletion, Consonants).

الاستبدال والحذف في كلام أطفال ميسان العراقيين مرحلة ما قبل المدرسة: دراسة حالة توليدية
رباب قاسم ابراهيم / جامعة البصرة/ كلية الآداب/ قسم اللغة الإنجليزية
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المخلص:

تستكشف الدراسة التطور الصوتي لأطفال ميسان العرب العراقيين. تتكون بيانات هذه الدراسة من أربعة وعشرين مشتركاً من خلفية اللغة العربية (متحدثون أصليون للعربية) تتراوح أعمارهم بين ٣ الى ٦ سنوات. تم جمع التسجيلات من هؤلاء الأطفال لمدة خمسة عشر دقيقة لكل عينة، فكان وقت التسجيل الكامل عشر ساعات. تعتبر هذه الدراسة دراسة توليدية لاستكشاف الاستبدال والحذف بشكل أساسي. تتضمن الدراسة المقاطع الساكنة فقط فقد تم استبعاد مقاطع العلة. الاستنتاج الذي توصلت إليه الدراسة هو أن العمليات الصوتية الرئيسية في

خطاب أطفال ميسان هي الاستبدال والحذف. يتم إجراء هذه العمليات من قبل الأطفال من أجل تسهيل النطق. أظهرت الدراسة أن عمليات الاستبدال والحذف تحدث في اللفظة الصوتية ومكان النطق وطريقة النطق. يحدث الاستبدال والحذف بشكل كبير في عمر ثلاث سنوات ويستمر حتى سن السادسة. في بعض الأحيان يتم نطق بعض الكلمات بأكثر من عملية. الكلمات المفتاحية: (النظرية المثلى، عمليات التطور الصوتي، الاستبدال، الحذف، الحروف الساكنة).

1.Introduction

Child phonology specialists have sought to understand how young learners pick up the sound system of their language and create mental models of the phonological units that support it. In the early phonological hypotheses, biological and behavioral explanations were considered. For instance, the physiological approach proposed that the quantity of nerves, muscles, and the amount of energy expended by the articulatory system during sound generation would determine how the phonological system developed (Skinner, 1986). In other words, it was thought that sounds that require the least amount of power to make are produced first, and sounds that require more energy to produce are produced later. The behaviorist perspective, on the other hand, proposed that language development is based on a reinforcing system provided by caretakers. Correct productions are positively encouraged while incorrect ones are not as the youngster copies adult performances. It was anticipated that this ongoing stimulant scheme would finally result in the maintenance of the right productions and the removal of the wrong ones (Skinner, 1986).

In their model of generative phonology, Chomsky and Halle (1968), proposed that young toddlers had the innate capacity to conclude and produce phonological rules from the spoken language's adult surface forms. (Chomsky and Halle, 1968).

According to Jakobson (1968) the way speech is pronounced has an impact on how speech sounds are learned. Jakobson (1968) claims in his Rules of Implication that front consonants do not necessarily follow back

consonants in every language that include back consonants. Consequently, it is thought that the forward to back sequence of acquisition is a natural process. The same front-to-back technique is also proposed by him for vowels that are the same height. All languages have stops. The acquisition of stops came before fricatives, so languages with fricatives must also have stops, and as a result, only languages with both stops and fricatives have affricates. Additionally, in every language, there are more fricatives than affricates. As a result, affricates come after stops and fricatives in the order of acquisition (Jakobson, 1968; Jakobson and MacMahon, 1969)

Additionally, according to Jakobson's (1941) observation, children learn sound segments in a largely fixed order across all languages. Children typically learn the sound /f/ before /θ/ in English, for example, three /free/, /thumb /fumb/, etc; voiceless stops are learned before voiced stops. Thus, it is anticipated that /p, t, k/ will be gained before /b, d, g/. In addition, front consonants such as /p, t/ develop before rear consonants such as /k/ (Hyman, 1975).

2. Aim and Hypotheses

The study aims to describe preschool children's speech and the distinctive speech-related processes that accompany it, mainly substitution and deletion. The hypotheses of the study are the following:

1. Substitution and Deletion processes are found in the speech of pre-school Missani Iraqi Arabic children.
2. Substitution and Deletion processes mainly exist in most Missani Iraqi children speech, especially in consonantal segments.
3. Substitution and deletion processes occur in voicing, place of articulation, manner of articulation.
4. Deletion is relatively fewer than substitution process.
5. Substitution and deletion of a consonant sound occur in all positions of the word. Thus it occurs initially, medially and finally.

3.The Iraqi Arabic Phonological System

The majority of Arabic dialects have more sound segments than Modern Standard Arabic (MSA). In other words, their vowel system is more complex but their consonant system has been simplified and reorganized (Holes, 1995). Iraqi Arabic is one type of Arabic dialects that both educated and uneducated Iraqis use to interact with one another. It is similar to other variations in that it has a variety of consonants and vowels and has its own phonetic and phonological system (Jasim & Sharhan, 2013; Ibrahim, 2012).

There are 39 phonemes in Iraqi Arabic, including 8 monophthongal vowels and 31 consonants. There are 12 voiceless consonants and 19 voiced ones, together with 3 short vowels (/i, u, a/) and 5 long vowels (/i:, ee, a:, o:, u:/). These letters are /p, b, f, D, S, ş, T, t, x, h, H, t, k, g, q, j, d, 9, m, n, l, r, w, y/ (Abdul-Sattar, 2015). There are ten different syllable combinations that could be used: /cv, cvv, cvc, ccv, ccvc, cvcc, cvvc, cvvcc, ccvvc, ccvcc/. The first seven syllables are frequently utilized as opposed to the latter three, which are hardly employed, according to Ghalib (1984).

4. Phonetic Processes

The phonological processes which are found in the participants' speech are substitution, deletion, nasalization, metathesis and reduplication. The study is mainly concerned with exploring the phonological development processes substitution and deletion. In relation to children's phonological errors and processes, many academics have hypothesized that children's methodical simplification of adult speech that is done to fit their capacities follows a number of universal patterns. Regardless of the language they

speak, most children are likely to exhibit certain mistake tendencies (McIntosh and Dodd, 2008). On the other hand, phonological errors may be universal across languages, dialect- or language-specific, or child-specific, according to discrepancies between languages and typically growing children. According to Ingram (1986) children pick up these systematic norms on their own and gradually outgrow them over a set period of time. The child's speech becomes more regular as he moves away from his childhood, and a linguist can frequently identify the causes of his alterations to common terms. There is always some shared component in the production of two sounds when he substitutes one with another (McIntosh and Dodd, 2008). An explanation of each process is given in the sections that follow, along with examples that span multiple languages.

4.1 Substitution

When a youngster uses substitution, he/she changes difficult sounds with simple ones. As a result, "r" (as in story) becomes "w" as in "stowy." Generally speaking, replacement errors happen when an element in the target word is changed to facilitate production by changing one or more properties (place, method, voice, and in Arabic, pharyngealization). Although they might sometimes be linguistically motivated, substitution errors show how the child's phonological representations are growing. Those mechanisms are often present in children ages 2-4 who perform normally (Walliamson, 2014).

4.2 Deletion

The term "deletion" describes the removal of one or more parts of a target word in an effort to make it simpler, shorter, and easier for children to

produce. A syllable or a solitary consonant which is called singleton deletion is the most prevalent type of deletion which can happen in all word locations but is most frequently observed at word borders and in consonants rather than vowels (Al Ajroush, 2019).

4.3 Nasalization

Whenever the soft palate is dropped to allow audible air escape through the nose, the nasal sounds /m, n, g/ are produced. All vowels and additional consonants can be nasalized by adding one of the nasals after them. When nasals are followed by /s/ as in snooze, they lose their voice. One nasal plosion results when a plosive is followed by one of the nasals because the nasal is released through the nose rather than the mouth, giving the sound of sudden rather than /sdn/. (Crystal, 2003).

4.4 Metathesis

Metathesis is the process of rearranging succeeding sounds. Phonetic rules allow segments to be switched around. For instance, the word ask is pronounced /aks/. (Hyman, 1975). It is the alteration of the typical order of sentence components. These components could be words, syllables, sounds, or other types of units. Adult speech frequently contains metathesis, which is not regarded as a mistake. Metathesis mistakes, on the other hand, are uncommon, noticeable in early children, and one of the first processes to disappear. This kind of procedure can be seen in ordinary conversation (Crystal, 1992)

4.5 Reduplication

Reduplication is one of the earliest patterns in speech that has been observed in children, notably in the first year of life and maybe continuing into the second year as it aids in the formation of the majority of their first actual words. Reduplication is a common technique for breaking down big

words into much easier patterns that are more child-friendly. Reduplication is frequently used in sentences that include more than one syllable (Al Ajroush, 2019). Unexpectedly, reduplication happens in every language. The two most obvious instances are [dada] or [baba] for dad, daddy, father or [abuj] in Arabic, and [mama] for mother, mum, mummy, mom.

5. Methodology

This section outlines the research methods used to determine the phonological development of Missani Iraqi children from 3 to 6 years old. It presents all the details of the practical part of the study, the methodology, study design and the children who took part in the study. The procedures for gathering data and the recording methods are also described.

5.2 Research Design

The study at hand employed a case study as a research strategy. Thus, it adapted the qualitative research method. The proposed strategy is organized by execution of audio-recorded interviews as well as other data collection examinations for the participants joining in the study. The exploration of the phonological development phenomenon seeks to understand the phonological development of children's speech in an inductive way. The results were examined via the Optimality Theory Model.

5.3 Participants Selection

In this study, the participants are chosen based on a number of factors, including linguistic, demographic, and age criteria. The participants are all monolingual Missani Iraqis who reside in Missan. At the test time, the suggested age range is 3 to 6 years old. Additionally, they do not have any pronunciation problems.

5.4 Recording Techniques and Data Collection

The recording of the participants' speech began in December 2022, and continued to March 2023. There were 24 participants interviewed: 12 of them were males and 12 of them were females. The locations for the recording sessions were the participants' schools, kindergarten classes, and their nurseries. In order to calm down the participants and get them away from noise and worry, all of the recordings were conducted in a quiet room within the aforementioned locations. The interviews were captured Using a high sensitivity audio recorder (Galaxy M52 5G). Finally, it is important to note that each child took 10 to 15 minutes to record.

6.Data Analysis and Discussion

As optimality-theoretic analysis, the samples were picked for the OT model to analyze. In the elicited data, the substitution and deletion processes were found. However, the purpose of this section is to provide an optimality-theoretic analysis of the phonological errors made by Missani participants and to explain the numerous changes that have been noted in such errors. A ranking that takes an Optimality Theory (OT) approach (Prince & Smolensky, 1993/2004) could present the phonological errors as connections of a collection of violable universal constraints onto the other to show their significant characteristics. There are two main issues in this section. The first issue relates to the substituting of the different sounds with other sounds. The second issue concerns the deletion of consonants.

6.1 Optimality Framework's Analysis of Phonological Consonant Substitution

Consonant substitution is the important issue that needs to be taken into consideration in this section. As demonstrated previously, certain Missani Iraqi Arabic children substitute numerous consonants with different consonants. Given so, the researcher separated the consonant sounds in order to analyze the Missani participants' substitution process of specific Arabic consonants with other consonants. These consonants are therefore

seen as limitations in OT terminology that rule out their existence in Arabic. The Arab participants thus substitute many sounds with others.

In the elicited data, substitution process is frequently occurred. The examples focus on examining the consonant segments only while the vowel segments are excluded. Wherefore, the substitution process is chosen to be addressed first from the OT perspective. Moreover, this section focuses on examining this process in various IA consonants. Tableau (1) below provides an example of substitution in manner of articulation.

Tableau (1): The voiced bilabial plosive /b/ is substituted by the voiced bilabial nasal /m/ in the output Word /ʔamdilha/ from the Input /ʔabdilha/ "replace it".

/ʔabdilha/	Plosive	nasal	IDENT[manner]
(a)ʔabdilha	*!		
(b)ʔamdilha		*	*

Plosive>>Nasal>>IDENT[manner]

The fatal violation mark (!) concerning the Plosive restriction is attached to the usual candidate (a), excluding this candidate from contention. The most energy-efficient output (b) is [+nasal], which means that the articulation is followed by a partial constriction of the air passage rather than a complete closure that requires more energy to generate. This is because it breaches the lower-ranked limitations. The consonant /b/ is changed to /m/ at the onset of the second short syllable, and the manner in which it is altered.

Tableau (2) below provides an example of substitution in voicing.

Tableau (2): The voiced denti-alveolar plosive /d/ is substituted by the voiceless denti-alveolar plosive /t/ in the optimal Candidate word /baɛat/ from the Input Form /baɛad/ "after".

/baɛad/	*d	*t	IDENT[voicing]
(a)baɛad	*!		
(b)baɛat		*	*

d* >> *t >> IDENT[voicing]

The candidate (a) is eliminated from the competition because it contains the segment /d/, which is regarded as the top-ranking constraint. By failing to preserve (the voicing feature from the input form), which led to the coda's conversion in the second syllable from /d/ to /t/, the winning candidate (b) violated the faithfulness condition, which led to its election. [-voiced] indicates the winning candidate. The second syllable's coda, which changes from /d/ to /t/ in this table, indicates the transition. Despite being extrametrical, the final segment is considered to be an element of the second syllable, which is bimoraic and comprises two moras

Substitution in the place of articulation is provided in Tableaus (3) and (4) below.

Tableau (3): The voiced velar plosive /g/ is substituted by the voiced denti-alveolar plosive /d/ in the Output word /ʔadoo/ from the input /ʔagool/ " I say".

/ʔago:l/	Velar	Denti-alveolar	IDENT[place]
(a)ʔago:l	*!		
(b)ʔado:l		*	*

Velar>>Denti-alveolar>>IDENT[place]>>IDENT[manner]

Candidate (a) in this tableau is eliminated from contention for disturbing the highest constraint, which is the expected output. In candidate (b), the Voiced Velar Plosive (/g/) changes into the Voiced Denti-alveolar Plosive (/d/), indicating a shift in the location of articulation while sparing the manner and voicing features. The applicant in question is ideal based on this ranking. This table's transition from the second syllable beginning with /g/ to /d/ is audible

Tableau (4): The voiced velar plosive /g/ is replaced by the voiced denti-alveolar plosive /d/ in the Optimal Word /daaε/ from the Input /gaaε/ "earth"

/ga:ε/	Velar	Denti-alveolar	IDENT[place]
(a)ga:ε	*!		
(b)da:ε		*	*

Velar>>Denti-alveolar>>IDENT[place]

Since the well-formed output involves the top-ranked constraint, it is not included. On the other hand, candidate (b) disturb the lowest-ranked restrictions by changing /g/ to /d/, leading to the form /daae/ being recognized as the successful output. In this example. The initial-word position is the context in which the process of replacement is seen. The denti-alveolar /d/ is formed from the velar /g/ sound. The beginning of the first syllable is the changed part

6.2 Optimality Framework's Analysis of Phonological Consonant Deletion

Deletion means omitting one or more parts of a target word in an effort to make it simpler, shorter, and easier for the child to pronounce. There are two main issues concerned with the deletion in phonological errors generated by Missani Participants: Firstly, the deletion of a consonant sound that occurs in all positions of the word. Secondly, the process of deletion causes the MAX constraint to flag the winning candidate with a violation mark (*). The following Tables will summarize these processes.

Tableau (5): The Voiced Alveolar Lateral /l/ is deleted in the Output Form /kiʃi/ from the Input Form /Kilʃi/ "everything".

/Kilʃi/	Lateral	No Lateral	MAX
(a)Kilʃi	*!		
(b)Kiʃi		*	*

Lateral>> No Lateral>>MAX

The competition is over since the standard form (a) has the highest rank limitation. Candidate (b) is the best output form since it violates the restriction with the lowest ranking.As seen in the example, the produced

segment just has one syllable according to the consonant /l/ being reduced, whereas the well-formed output contains two syllables. Due to this, the word's structure was changed from cvccv into cvcv, where the word's final consonant is a geminate one.

Tableau (6): The Voiced Denti-alveolar Nasal /n/ is deleted in the output /ɛedi/ from the input /ɛendi/ " I have".

/ɛendi/	Nasal	No Nasal	MAX
(a)ɛendi	*!		
(b)ɛedi		*	*

Nasal>>No Nasal>>MAX

The segment /n/ is the bilabial nasal left out of the best output (b), which causes the MAX constraint to designate the winning candidate with a violation mark (*). The evaluation process results in the typical output (a). As seen in the example, the omitted segment is /n/ and both the input and output words have the same amount of syllables. Thus, there is no change in word structure. The removal of the first syllable's coda causes the syllabification to change from /cvccv/ to /cvcv/. Once more, this shows a reduction in syllables, which means the term took less time to develop.

Tableau (7): The Voiced Denti-alveolar Nasal /n/ is deleted in the output /figar/ from the input /fengar/ "potato finger".

/fengar/	Nasal	No Nasal	MAX
(a)fengar	*!		
(b)fegar		*	*

Nasal>>No Nasal>>MAX

The successful option is marked with a violation mark (*) provided by the MAX constraint since the bilabial nasal /n/ is omitted from the optimal output (b). The evaluation process results in the typical output (a). As seen in the example, the omitted segment is /n/ and both the input and output words have the same amount of syllables. Thus, the word structure is not changed. The elimination of the first syllable's coda causes the changing in the syllabification from /cvccvc/ to /cvcvc/.

Tableau (8): The Voiceless Interdental Fricative /θ/ is deleted in the Optimal Output form /manya/ from the Input Form /θmanya/ "eight".

/θmanya/	Fricative	No Fricative	MAX
(a)θmanya	*!		
(b)manya		*	*

Fricative>>NoFricative>>MAX

The Voiceless Interdental Fricative /θ/ is left out of the optimal output (b), which causes the MAX constraint to flag the winning candidate with a violation mark (*). The evaluation process results in the typical output (a). The given example only has two syllables: "ccv cvv," By skipping the beginning of the first syllable, the syllable is condensed into the pattern /cv cvv/.

6.3 Discussion of Phonological Development Processes according to the OT

The OT model and ranking of constraints models were used to assess the phonological development processes found in the elicited data in order to explore and examine the context in which these processes occur. It is important to note that only chosen samples were examined.

6.3.1 Discussion of the OT Analysis of Substitution

The corresponding tableaux from 1 to 4 depict the process of substitution in the various settings discovered in the data, starting with the consonantal substitution process. Substitution process makes up a large portion of speech, accounting for 100% of all instances. It is limited to the faithfulness of the constraints conflict in consonantal substitution. Constraints of identity relating to manner and place of articulation, voice, and emphatic features. The faithfulness constraints that interacted with the substitution process are IDENT[place], IDENT[manner], and IDENT[voicing]. Given so, the most prevalent constraint in the examples above is IDENT[place], which is repeated many times of all the constraints used. The IDENT[manner] constraint follows. Finally, the constraint for voicing IDENT [voicing] is also present.

6.3.2 Discussion of the OT analysis of Deletion

In relation to the deletion process. The faithfulness constraint MAX happens in the given data for many times, as is illustrated. The appropriate tableaux from 5 to 8 depict the deletion process in the various data situations. The process of deletion is not accompanied by any instances of insertion. The constraints that apply to the process of addition are MAX and DEP constraints.

7. Conclusions

The ultimate conclusions of the present study are:
Substitution and deletion processes are found in the speech of pre-school Missani Iraqi Arabic Children. These processes are made by participants in order to make the pronunciation easier.

1. Substitution and deletion are the most pervasive among other processes, which occurred throughout the analysis of the data.
2. The study has displayed that substitution and deletion processes occur in voicing, place of articulation, manner of articulation.
3. Substitution and deletion of a consonant sound occurs in all positions of the word. Thus it occurs initially, medially and finally.
4. Substitution and deletion occur in the speech of children of three to six years of age.

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Appendix A

Iraqi Arabic Phonemic Inventory

1. The Consonants

Symbols	Description	Example	Meaning
/b/	A voiced, bilabial plosive	ba:ba	Dady
/t/	A voiceless, denti-alveolar plosive	kitab	(Book)
/t̤/	A voiceless Denti-alveolar emphatic plosive	ʔaʔfa:l	(Children)
/d/	A voiced denti-alveolar plosive	daris	(Lesson)
/d̤/	A voiced denti-alveolar emphatic, plosive	biḍa	(Egg)

/k/	A voiceless velar plosive	kyka	(Cake)
/g/	A voiced velar plosive	agilla	(I told him)
/q/	A voiced velar plosive	qadi:m	(Old)
/ʔ/	A glottal stop	ʔamis	(Yesterday)
/f/	A voiceless labio-dental fricative	fi:l	(Elephant)
/θ/	A voiceless interdental fricative	θlaθa	(Three)
/ð/	A voiced interdental fricative	ðaka	(That is it)
/ð̤/	A voiced interdental emphatics fricative	ð̤a:lim	(Oppressor)
/s/	A voiceless denti-alveolar fricative	ʔaswad	(Black)
/s̤/	A voiced denti-alveolar emphatic fricative	ʂabaḥ	(Morning)
/z/	A voiced denti-alveolar fricative	ǧaz	(Gas)
/ʃ/	A voiceless palato-alveolar fricative	li:ʃ	(Why?)
/x/	A voiceless uvular fricative	xamsa	(Five)
/ǧ/	A voiced uvular fricative	ǧrab	(Crow)

/ħ/	A voiceless pharyngeal fricative	ħaia	(Snake)
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/ɛ/	A voiced pharyngeal fricative	baɛad	(After)
/h/	A glottal fricative	ħadi:θ	(New)
/ʃ/	A voiceless palato-alveolar, fricative	ʃurba:ya	(A bed)
/dʒ/	A voiced palato-alveolar fricative	diɖʒa:dʒ	(Chickens)
/m/	A voiced bilabial nasal	ahmar	(Red)
/n/	A voiced denti-alveolar nasal	lawn	(Color)
/r/	A voiced alveolar flap	ɛaʃir	(Juice)
/l/	A voiced alveolar lateral	ɛasal	(Honey)
/w/	A voiced velar approximant	sanawat	(Years)
/y/	A voiced palatal approximant	yakil	(He eats)

2.vowels

Symbols	Description	example	Meaning
/i/	Short, close-mid, front, spreading vowel	mieda	(Stomach)
/i:/	Long, close, front spreaded vowel	okai:	(Ok)
/ee/	Long, central, neutral vowel	Beet	(House)
/a/	Short, open-mid, central vowel	far	(Mouse)
/a:/	Long, open, central vowel	sa:lim	(Safe)
/o:/	Long, central, back vowel	to:ba	(Ball)

/u/	Short, close-mid, rounded back vowel	ʔawo:s	(Peacock)
/u:/	Long, close, rounded back vowel	ku:b	(A cup)

Appendix B

The Data gathered from the samples

ʔago:l → ʔado:l (I say)

muty → mudy (donkey)

far → fal (mouse)

gae → daae (Earth)

okai: → otai: (Ok)

ro:ba → lo:ba (yogurt)

karrar → tarrar (A name of a boy)

yakil → yatil (He eats)

kafy → dafy (enough)

li:f → li:d (why?)

ʃofy → hofy (Look)

mxabal → mhabal (crazy)

kyka → tytay (cake)

kabira → habira (big)

agilla → adilla (I told him)

Tabla → tabla (table)

ashal → athal (easier than)

ʔaswad → ʔaswat (black)

ahmar → ahmal (red)

aeruf → aeluf (I know)
imfy → imsy (walk)
baead → baeat (after)
θlaθa → tlata (three)
lawn → nawn (Color)
qiṭa → eiṭa (Cat)
sanawat → θanawat (Years)
easal → eaθal (Honey)
xamsa → xamθa (Five)
Sǧayron → ?anon (a little boy)
ṣabaḥ → sabaḥ (Morning)
θabit → tabit (Fixed)
simṭa → nimṭa (Fish)
eaṣir → easir (Juice)
ǧabah → dabah (forest)
ḥaia → haia (Snake)
ḥamudi → hamudi (A name of boy)
xala → ?ala (Maternal aunt)
qird → qild (Monkey)
Ruma:n → luma:n (Pomegranate)
xiaar → ḥiaar (Cucumber)
ǧaz → qaz (Gas)
idak → idat (your hand)
?adǧib → ?adib (Bring)
ṭawo:s → tawo:s (Peacock)
baṭa → bata (Duck)
mawz → maws (Bananas)
bazuna → baḏuna (Cat)
Kilfi → kiṭi (Everything)
tilifon → tifon (Mobile)

endi → edi (I have)
Sadiq → didiq (honest)
fengar → figar (Finger)
xiyar → hiyar (cucumber)
ħusayn → sayn (A name of a boy)
θmania → mania (Eight)
kanto:r → tanto:r (cupboard)
ʔatfa:l → ʔafa:l (Children)
bardan → badan (I feel cold)
azraq → adrad (blue)
ʔarbea → ʔabea (Four)
ʔarnab → ʔanab (Rabbit)
ʔadris → ʔadis (I am studying)
ʔanam ʔanamn (sleep)
didza:d3 → dʒidza:d3 (chickens)
aktub → atub (I'm writing)
darad3 d3arad3 (ladder)
Dubana → tubana (insect)
kita:b tita:b (book)
Toba → doba (ball)
tisea titea (nine)
dard3 tart (ladder)
ħadiqa ħakika (garden)
ðakħwa ðatnħwa (That is it)
şandwq sandwd (box)
asad → atad (lion)
biða → bida (egg)
laymon → naymon (lemon)
lahma → nahma (meat)
idak → idat (your hand)

ħilwa hiwa (beautiful)

arş → ard (ground)

yiri:d → yili:d (He wants something)

einab εimam (grapes)

burtiqal butieal (orange)

alkitab → altitab (the book)

