Substitution in Child Speech

Umayya Idrees Younis (1)

Abstract
This study investigates one of the phonological processes used by children which is substitution in the speech of a two – year – old child speaking Mosuli Arabic. It is used by children as other processes such as Metathesis, Consonant harmony and so on to simplify their speech. Substitution occurs in all consonantal features which are voicing, place of articulation, manner of articulation and tafxim. It occurs initially, medially and finally.

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Received: 17-12-2007
Accepted: 20-05-2008
Key of symbols used in the paper

**A. Consonants**

**Mosuli Arabic Consonants**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>as in:</th>
<th>Arabic</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ʔ/</td>
<td>as in:</td>
<td>أسود</td>
<td>/ʔaswad/ Black</td>
</tr>
<tr>
<td>/b/</td>
<td>as in:</td>
<td>بطاطا</td>
<td>/bata:ta/ Potato</td>
</tr>
<tr>
<td>/p/</td>
<td>as in:</td>
<td>باتريات</td>
<td>/pa:trijjat/ Batteries</td>
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<tr>
<td>/t/</td>
<td>as in:</td>
<td>تمر</td>
<td>/tamir/ Date</td>
</tr>
<tr>
<td>/Θ/</td>
<td>as in:</td>
<td>ثلاثة</td>
<td>/Θala:Θa/ Three</td>
</tr>
<tr>
<td>/dʒ/</td>
<td>as in:</td>
<td>جنة</td>
<td>/dʒanna/ Paradise</td>
</tr>
<tr>
<td>/t̪j̪/</td>
<td>as in:</td>
<td>جاي</td>
<td>/t̪ja:j/ Tea</td>
</tr>
<tr>
<td>/h/</td>
<td>as in:</td>
<td>حبر</td>
<td>/hiba / Ink</td>
</tr>
<tr>
<td>/x/</td>
<td>as in:</td>
<td>خبز</td>
<td>/xibiz/ Bread</td>
</tr>
<tr>
<td>/d/</td>
<td>as in:</td>
<td>دلال</td>
<td>/dala:l/ A female name</td>
</tr>
<tr>
<td>/ʔ/</td>
<td>as in:</td>
<td>ذكي</td>
<td>/ʔaki/ Intelligent</td>
</tr>
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<td>/r/</td>
<td>as in:</td>
<td>رياض</td>
<td>/rija:ʔ/ A male name</td>
</tr>
<tr>
<td>/z/</td>
<td>as in:</td>
<td>زواج</td>
<td>/zawa:dʒ/ Marriage</td>
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<tr>
<td>/s/</td>
<td>as in:</td>
<td>سارة</td>
<td>/sa:ra/ A female name</td>
</tr>
<tr>
<td>/j̪/</td>
<td>as in:</td>
<td>شارع</td>
<td>/j̪a:riʃ/ Street</td>
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<tr>
<td>/s/</td>
<td>as in:</td>
<td>صمون</td>
<td>/sammu:n/ Kind of bread</td>
</tr>
<tr>
<td>/t̪/</td>
<td>as in:</td>
<td>طباعة</td>
<td>/t̪ama:ta/ Tomato</td>
</tr>
<tr>
<td>/ʔ/</td>
<td>as in:</td>
<td>ظاهر</td>
<td>/ʔa:fir/ A male name</td>
</tr>
<tr>
<td>/s/</td>
<td>as in:</td>
<td>عسل</td>
<td>/ʔasal/ Honey</td>
</tr>
<tr>
<td>/l/</td>
<td>as in:</td>
<td>غالي</td>
<td>/ a:li/ Expensive</td>
</tr>
<tr>
<td>/f/</td>
<td>as in:</td>
<td>فادي</td>
<td>/fa:di/ A male name</td>
</tr>
<tr>
<td>/q/</td>
<td>as in:</td>
<td>قلم</td>
<td>/qalam/ Pencil</td>
</tr>
<tr>
<td>/k/</td>
<td>as in:</td>
<td>كتاب</td>
<td>/kita:b/ Book</td>
</tr>
</tbody>
</table>
Substitution in Child Speech

/g/ as in: كراج /gara:d/ Garage
/l/ as in: هاتفه /laha:na/ Cabbage
/m/ as in: مدرس /madraisi/ School
/n/ as in: ناغ /na: / Fire
/h/ as in: هذا /ha?:a/ This
/w/ as in: ولد /walad/ Boy
/j/ as in: يلعب /jilab/ Plays
(for sing. Masc.)

A. Vowels
Mosuli Arabic Vowels

Short Vowels

1- /i/ as in: سن /sin/ Tooth
2- /a/ as in: ولد /walad/ Boy
3- /u/ as in: اشن /?a:jnu/ What?

Long Vowels

1- /i:/ as in: فيل /fi:l/ Elephant
2- /e:/ as in: كيك /ke:k/ Cake
3- /a:/ as in: قام /qa:m/ Stood
(for sing. Masc.)
4- /u:/ as in: بوم /bu:m/ Owl
5- /o:/ as in: فوق /fo:q/ On

1. Introduction:

Substitution, as a phonological process, has been studied by many phonologists (e.g.: Ingram, 1978: 67; Lock, 1980: 201; Nwokah,

Children usually acquire [f] before [θ] so they substitute [θ] for [f] in the word "three" [θri:] which becomes [fri:]. They acquire front consonants such as [p] and [t] before back consonants such as [k]; so they say [ta] instead of [kar] (see Hyman, 1975: 16f). The most difficult sounds for children speaking English are fricatives and affricates. The children avoid these sounds even if they acquire one or more of them by substitution (see Ingram, 1978: 64 ff).

2. The Aim and Hypotheses:

This study aims at exposing one of the phonological processes used to simplify children speech. This process is substitution.

The following hypotheses will be tested in this study:

1. Substitution can occur in all consonantal features which are voicing, place of articulation, manner of articulation, and taffim.

2. It occurs initially, medially and finally.

3. Sometimes a word may consist of more than one type of substitution.
4. Fricatives are the most difficult sounds to acquire in Arabic.

3- Data Collection and Methodology

The data needed for this study have been collected from the speech of five children of the researcher's relatives, two of them are females and the others are males. Their dialect is Mosuli Arabic*. We have collected a number of words which are used by those children who are at the age of two.

We have analyzed these words according to the consonantal features (see the following table). The consonant phonemic system of Mosuli Arabic contains a set of 30 phonemes where most of them are found in standard Arabic except /d/, /g/, /p/ and /tʃ/ (see Rahim and Farjo, 1985). The sessions held were direct and the children who were tested are normal. We observed them for more than two months and noticed their pronunciations carefully and transcribed their utterances phonemically.

4. Analysis and Findings:

Consonantal features can be divided into voicing, place of articulation, manner of articulation (see Roach, 2001: 20ff) and tafkim

* Mosuli dialect: It is a dialect among many dialects in Iraq, it is spoken in Northern Iraq, which stands out from other Iraqi dialects in many crucial respects: phonological, lexical and grammatical. (see Sa'eed, 2006: 69f).
which plays an important role in Arabic phonology (see Rahim, 1980: 187 ff).

**4.1. Voicing:**

In Mosuli Arabic both voiced ~ voiceless and voiceless ~ voiced substitutions exit.

**4.1.1. Voiced ~ Voiceless:**

1. **z ~ s**
   
   /bazzu:n/ ~ /passu:n/ (cat) بسون-بزون

2. **? ~ f**
   
   /ha:ki?/ ~ /ha:tif/ (in a like manner) هتف-مکذ

3. **z ~ ñ**
   
   /zu:zu:/ ~ /fu:zu:/ (a female name) شوزو-زورو

4. **? ~ ?**
   
   /amma:r/ ~ /?amma:r/ (a male name) امار-عمر

5. **m ~ ?**
   
   /minu:/ ~ /?inu:/ (who) انو-منو

**4.1.2. Voiceless ~ Voiced**

6. **h ~ ?**
   
   /hasan/ ~ /?asan/ (a male name) عسن-حسن
4.2. Place of Articulation:

There are sixteen types of substitution of place of articulation which are:

4.2.1. Bilabial ~ Labio – dental
7.  p ~ f
/paːtriːjaːt/ ~ /faːtlɪjaːt/ (batteries)

4.2.2. Interdental ~ Labio – dental
8.  ð ~ f
/kθiː/ ~ /kfiː/ (very much)
/θaiː?ir/ ~ /faː?ir/ (a male name)

4.2.3. Interdental ~ Velar
9.  ? ~ g
/beː?a/ ~ /beːɡa/ (egg)

4.2.4. Denti-alveolar ~ Glottal
10.  t ~ ?
/tiʃaːʔ/ ~ /ʔiʃaːʔ/ (apple)

4.2.5. Denti-alveolar ~ Interdental
11.  z ~ ?
4.2.6. Denti-alveolar ~ Glottal

12. s ~ ظ

/xibiz/ ~ /?ibi?/ (bread)

13. s ~ ظ

/sammu:n/ ~ /?ammu:n/ (kind of bread)

4.2.7. Palato-alveolar ~ Denti-alveolar

14. d3 ~ d

/tid3e:n/ ~ /tide:n/ (are you coming)

/wid3a:n/ ~ /wid)a:n/ (sick)

15. ḧ ~ t

/?a:jnu ha:?a/ ~ /?atnu ?a:da:/ (what is this)

16. ṭj ~ t

/taj/ ~ /ta:j/ (tea)

4.2.8. Palatal ~ Glottal

17. j ~ ظ

/ji:jti il/ ~ /?i:jti il/ (works)

(Stress marks are used to indicate the stress on the vowels.)

(For masculine singular.)
4.2.9. Velar ~ Denti-alveolar

18. k ~ t

/ka:sa/ ~ /ta:Θa/ (bowl)
/kahrab/ ~ /ta?lab/ (electricity)

4.2.10. Velar ~ Uvular

19. k ~ q

/ke:ka/ ~ /qe:qa/ (cake)

4.2.11. Uvular ~ Denti-alveolar

20. q ~ t

/qalam/ ~ /talam/ (pencil)

4.2.12. Velar ~ Denti-alveolar

21. ~ n

/da o:h/ ~ /dano:h/ (I am leaving)

4.2.13. Velar ~ Glottal

22. x ~ ?

/xibiz/ ~ /?ibi?/ (bread)

4.2.14. Uvular ~ Velar

23. q ~ k
4.2.15. Uvular ~ Glottal

24. q ~ ?

/qu:m/ ~ /?u:m/ (stand up)

(stand up) (for imp. masc. sing.)

4.2.16. Pharyngeal ~ Glottal

25. ? ~ ?

/amma:r/ ~ /?amma:r/ (a male name)

آمار-عمر

26. h ~ ?

/hiسا:n/ ~ /?isa:n/ (horse)

إحصان-حصان

27. h ~ h

/hajra:n/ ~ /hajra:n/ (bewildered)

هيران-حيران

4.3. Manner of Articulation

There are nine types of substitution of manner of articulation which are:

4.3.1. Plosive ~ Fricative

28. p ~ f

/pa:trijja:t/ ~ /fa:tlijja:t/ (batteries)

فاتئيات-باتريات
4.3.2. Fricative ~ Plosive

29. $z ~ d$

/moːz/ ~ /moːd/ (Pl. banana)

/zaraːfa/ ~ /dalaːfa/ (giraffe)

/?anzal/ ~ /?andal/ (go down)

30. $? ~ d$

/?iːb/ ~ /diːb/ (wolf)

31. ŋ ~ t

/?aʃnu haːʔa/ ~ /ʔatnu ?aːda/ (what is this)

32. s ~ t

/jaːsiːn/ ~ /jaːtiːn/ (a male name)

33. s ~ t

/soːsadʒ/ ~ /toːtadʒ/ (sausage)

/sammoːn/ ~ /ʔammuːm/ (kind of bread)

34. $ʔ ~ g$

/beːʔa/ ~ /beːɡa/ (egg)

4.3.3. Fricative ~ Nasal

35. $~ n$

/daʊʔaː/ ~ /danoːʔaː/ (I'm leaving)

Future Studies Centre- Al-Hadba’ Un. College 45
4.3.4. Affricate ~ Plosive
36. dʒ ~ d
/widʒaːn/ ~ /widʒaːn/ (sick) ودائع- وجعان
/ idsil/ ~ / idil/ (foot) غفل- غفل

37. tʃ ~ t
/tʃaːj/ ~ /taːj/ (tea) تاي- جاي

4.3.5. Nasal ~ Plosive
38. m ~ ?
/minuː/ ~ /?inuː/ (who) انو- منو

4.3.6. Lateral ~ Nasal
39. l ~ n
/leːj/ ~ /neːj/ (why) نيش- ليش

4.3.7. Tap ~ Lateral
40. r ~ l
/zaraːfa/ ~ /dalaːfa/ (giraffe) دلافة- زرافه
/sajjaːra/ ~ /sajjaːla/ (car) سيالة- سيارة
/paːtrijjaːt/ ~ /faːtlijjaːt/ (batteries) فاتلية- باتريات

4.3.8. Glide ~ Plosive
41. j ~ ?
/jjtiː il/ ~ /iːjtiː il/ (works) إشتقـ يشتكـ
(for masc. sing.)
4.4. Tafxim

There is only one type of substitution of tafxim, which is:-

4.4.1. Mufaxxam ~ Non-Mufaxxam

42. s ~ t
/sɔː:sadʒ/ ~ /tuːtadʒ/ (sausage) توتچ-صوصج

43. s ~ ?
/sammuːn/ ~ /ʔammuːn/ (kind of bread) امون-صمون

44. t ~ t
/tajjaːra/ ~ /tajjaːla/ (plane) تياة-طيرة
/?ʔintiːniː/ ~ /ʔintiːniː/ (give me) إنيتي-إنيتي (for imp. sing.)
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<tbody>
<tr>
<td>Clitic</td>
<td>Prepos</td>
<td>Pronom</td>
<td>Refl</td>
<td>Direct</td>
<td>Indi</td>
<td>Place</td>
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<td>Case</td>
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</tbody>
</table>

Note: The symbol on the left in every column is voiced while the symbol on the right is voiceless.
Table (2): Substitution in Voicing

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Voiceless ~ Voiced</th>
<th>Voiced ~ Voiceless</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>2 years and 8 months</td>
<td>√</td>
</tr>
<tr>
<td>Male</td>
<td>2 years and 7 months</td>
<td>×</td>
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<tr>
<td>Female</td>
<td>2 years and 6 months</td>
<td>√</td>
</tr>
<tr>
<td>Female</td>
<td>2 years and 5 months</td>
<td>×</td>
</tr>
<tr>
<td>Male</td>
<td>2 years and 4 months</td>
<td>√</td>
</tr>
<tr>
<td>Female</td>
<td>2 years and 3 months</td>
<td>×</td>
</tr>
<tr>
<td>Male</td>
<td>2 years and 2 months</td>
<td>√</td>
</tr>
<tr>
<td>Female</td>
<td>2 years and 1 months</td>
<td>×</td>
</tr>
<tr>
<td>Male</td>
<td>2 years and 0 months</td>
<td>√</td>
</tr>
<tr>
<td>Female</td>
<td>2 years and 9 months</td>
<td>×</td>
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<tr>
<td>5 months</td>
<td>7 months</td>
<td>9 months</td>
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<tr>
<td>Female</td>
<td>M1</td>
<td>M2</td>
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<table>
<thead>
<tr>
<th>7 years and</th>
<th>9 years and</th>
<th>11 years and</th>
<th>13 years and</th>
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<tbody>
<tr>
<td>Male</td>
<td>M1</td>
<td>M2</td>
<td>M3</td>
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Table (5): Substitution in Place of Information
<table>
<thead>
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<th>Place of Articulation</th>
<th>h</th>
<th>t</th>
<th>d</th>
<th>n</th>
<th>s</th>
<th>Z</th>
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<td>Velar - Velar</td>
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<td>Velar - Dento-alveolar</td>
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<td>Velar - Labial</td>
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<td>Velar - Labio-dental</td>
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<td>Palatal</td>
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<td>Table (4): Substitution in Manner of Articulation</td>
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<td>Age</td>
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<td>Female</td>
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<tr>
<td>8 months</td>
<td>2 years and 8 months</td>
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<td>7 months</td>
<td>2 years and 6 months</td>
<td>2 years and 4 months</td>
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<td>6 months</td>
<td>2 years and 4 months</td>
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<td>5 months</td>
<td>2 years and 2 months</td>
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<td>4 months</td>
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<td>1 year and 10 months</td>
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<td>3 months</td>
<td>1 year and 10 months</td>
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<td>0 months</td>
<td>1 year and 4 months</td>
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- Th - Thalal
- L - Lateral
- Nasal
- Affricate
- Plosive
- Rhotic
- Voiced Fricative

Note: The table provides a visualization of the substitution patterns in the manner of articulation for different age groups and genders, highlighting the typical stages of phonological development in early childhood.
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<td>Male</td>
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</tbody>
</table>

Table (2): Substitution in Children
Conclusion

This study has investigated one of the phonological processes which is substitution. It is a tendency among children to simplify their speech. The results show that substitution occurs initially, medially and finally and occurs in all consonantal features. In voicing substitution occurs in both voiced ~ voiceless and voiceless ~ voiced. In place of articulation most instances of substitution occur in dental (alveolar), velar and uvular. This means that these sounds are more difficult than other sounds for children. However, substitution here is obvious in cases of changing most features to glottal and denti-alveolar, particularly /t/ and /d/ for these two sounds are the easiest for children. Fricative sounds in manner of articulation seem more difficult than other sounds; for almost six of them change to other sounds in child speech. On the other hand plosive sounds become a shelter for children because they are quite easy. What is noteworthy is that substitution from mufaxxam to non-mufaxxam also occurs in child speech. Sometimes, more than a feature of substitution change, for example s ~ t where three features change and more than one substitution occur in one word, e.g. : /kahrab/ ~ /ta?lab/ (electricity) → (كهربا) ~ تالب k ~ t, h ~ ?, r ~ l.
References


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