حذف المقطع في كلام الطفل

Syllable Reduction in Child Speech

Zena Matty Khidhir
Lecturer
University of Mosul
College of Education for Humanities
Department of English

زينة متي خضر
مدرس
جامعة الموصل- كلية التربية للعلوم الإنسانية- قسم اللغة الإنكليزية

z.matty@uomosul.edu.iq
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الملخص

تتناول الدراسة الحالية حذف المقطع لدى (٤٠) من الاطفال الذين يتحدثون اللهجة الموصلية والذين تتراوح اعمارهم ما بين سنتين الى اربع سنوات. وقد تناولت الدراسة حذف المقطع ضمن مستويين : مستوى الكلمة ومستوى العبارة و الجملة، حيث تمت دراسة حذف المقطع في بداية الكلمة ووسطها وفي نهايتها وفيما اذا كان هذا الحذف يتأثر بعدد المقاطع في الكلمة، او بعبارة اخرى، هل ان نسبة الحذف تكون اعلى في الكلمات التي تتكون من مقطعين، ثلاثة مقاطع او المتعددة المقاطع؟ ولهذا تم اختيار عدد من الصور التي تم تقديمها للأطفال وتسجيل كلامهم وتحليله ضمن نسب مئوية. ولقد تبين ان الاطفال يقومون بحذف المقاطع غير المشددة تبسيطاً لكلامهم. وكانت نسبة استخدام الحذف اعلى في الكلمات المتعددة المقاطع مقارنة بالكلمات التي تتكون من مقطعين او ثلاثة مقاطع. اضافة الى ذلك كانت نسبة الحذف للمقاطع غير المشددة اعلى في بداية الكلمة منها في الوسط والنهاية.

Abstract

The present study deals with syllable reduction in the speech of (40) Mosuli children aged between (2) and (4) years. The study has tackled reduction on both levels: word and sentence. It tries to study weak syllable deletion in different word positions, i.e. Initially, medially and finally and to see whether the occurrence of syllable deletion is affected by the number of the syllables in a word, i.e. is the deletion higher in disyllabic words, tri-syllabic or poly syllabic words? A number of pictures (48 pictures) was presented for the children. Their speech has been recorded, analyzed and dealt with in terms of percentages. It is found that the children omitted unstressed syllables to simplify their speech. The occurrence of weak syllable deletion WSP is higher in poly syllabic words than in disyllabic and tri-syllabic. Moreover, the deletion of unstressed syllables was higher in initial position than in medial and final positions.

Key of Mosuli Arabic Symbols

A. Consonants:

/ ʔ /	as in :	/ ʔaħmaɤ / "red"
/ b /	as in :	/ ba:b / "door"
/ p /	as in :	/ parda / "curtain"
/ t /	as in :	/ taməɤ / "dates"
/ θ /	as in :	/ θu:m / "garlic"
/ ʤ /	as in :	/ ʤamal / "camel"
/ tʃ /	as in :	/ tʃa:j / "tea"
/ ħ /	as in :	/ ħabəl / "rope"
/ x /	as in :	/ xɔ:x / "peach"
/ d /	as in :	/ damm / "blood"
/ ð /	as in :	/ ðe:l / "tail"
/ r /	as in :	/ ri:m / a girl's name
/ z /	as in :	/ ze:t / "oil"
/ s /	as in :	/ samaki / "fish"
/ ʃ /	as in :	/ ʃarbat / "juice"
/ ṣ /	as in :	/ ṣa:bu:n / "soap"
/ ṭ /	as in :	/ ṭe:ɤ / "bird"
/ð /	as in :	/ ðaffa:r / "a boy's name"
/ ʕ /	as in :	/ ʕe:n / "eye"
/ ɤ /	as in :	/ ɤaza:l / "deer"
/ f /	as in :	/ farra:ʃa / "butterfly"
/ q /	as in :	/ qaləb / "heart"
/ k /	as in :	/ kita:b / "book"
/ g /	as in :	/ gla:ṣ / glass
/ l /	as in :	/ laban / "yogurt"
/ ḷ /	as in :	/ ḷaṭi:f / a boy's name
/ m /	as in :	/ ma:j / "water"
/ n /	as in :	/ naba:t / "plant"
/ h /	as in :	/ hiba / "a girl's name"
/ w /	as in :	/ waɤəd / "flowers"
/ j /	as in :	/ ja:sir / "a boy's name"

B: Vowels :

Short vowels :

/ ə /	/ sənn /	"tooth"
/ a /	/ samm /	"poison"
/ u /	/ hudhud /	"hoopoe"
/ i /	/ ħanafijji /	"faucet"

Long Vowels:

/ i: /	/ ti:n /	"figs"
/ e: /	/ be:t /	"house"
/ a: /	/ na:ɤ /	"fire"
/ u: /	/ Ɵu:m /	"garlic"
/ ɔ /	/ ṣɔ:m /	"fasting"

1- Introduction:

When all young childrenare learning to speak, they mispronounce words. They omit syllables when they produce words that are polysyllabic (Snow, 1998 and Kinnane, 2015). Children modify words, replace, add and remove word bits to make them conform to a general pattern that they find easier to tackle(Internet:1)**.**So, when young children attempt to imitate and learn adult speech, they will use certain processes that help to simplify some speech sounds.Children do this because their speech patterns are not yet at a mature level; therefore, they will often omit unstressed syllables in polysyllabic words (Snow, 1998 Internet:2).

Hence, children's speech does not sound like adults' because they make typical, systematic, child-like sound replacements. These sound replacements are called phonologicalprocesses or phonological patterns(1)(Internet:3). Speaking with all of the sounds of an adult is too overwhelming to a young child's brain. To overcome this, the child's brain creates rules to simplify speech sounds and make words easier to say (Williamson, 2016 and Internet:4).

The present study deals with syllable reduction or weak-syllable deletion (WSD) in the speech of Mosuli children between 2 and 4 years of age. Syllable reduction or (WSD) is considered one of the typical phonological simplification processes that is being used when young children omit unstressed syllables or the syllables found in words of more than one syllable. For example /ba:jəl/ instead of /mɔ:ba:jəl/ "mobile", /tu:tal/ instead of /kDmpiju:tar/ "computer" and /ta:ħ/ instead of /məfta:ħ/ "key".Syllable reduction is the omitting of the unstressed or weak syllable of a multi-syllabic word (Ingram,1976;Bowen1999; Farjo, 1999:28; Merkel,2001;Younis,2008:18;Williamson2016;Internet:5;Internet:6

(1)Phonological processes are patterns of sound errors that typically developing children use to simplify their speech as they are learning to talk or, they are rules that the child's brain creates to simplify speech sounds and make words easier to say (Ingram, 1976; Bowen;1999 and Williamson, 2016).

andInternet:7). WSD is one of the structural simplifications used by children(1). This means that for the normal child, a simple way to alter the structure of a word is to omit particular speech segments(2). Thus, the child may simplify the production of complex words. However, in the typically developing child, this simplification is not random, but farily predictable (Oller,1974: 299).

In this respect, (Oller,1974:299) says that if a phonological error reduces the total number of contrastive phonetic elements or strings which would occur in the child speech, it can be said that the error is one of simplifications. He also says that all types of phonological errors in child speech are a result of simplification.Thus, the phonological errors made by children systematically simplify the childes inventory of phonetic elements and strings.

(1)Other structural simplifications that are used by children involve: reduplication, metathesis and epenthesis (Internet:5).

(2)There are two main speech segments that are typically deleted: consonants and weak syllables (Williamson,2016).

2- Aims of the Study: The present Study has the following aims:

a) To describe the occurrence of syllable deletion in the speech of Mosuli children between 2 and 4 years old on the word level and on the phrase and sentence level .

b) To study the occurrence of syllable deletion in different word positions, i.e. initially, medially and finally.

c) To see whether the structure of the word or the number of the syllables affects the frequency of occurrence of syllable deletion in the speech of those children. That is to say, is the occurrence of syllable deletion higher in disyllabic trisyllabic or poly syllabic words?

d) To examine and analyse this process of simplification, i.e. syllable deletion taking into consideration the extension of the produced words.Preference is qiven to stressed or unstressed syllables and the position of the syllable within the word where syllable deletion occurs.

3- Method:

a) **The subjects:** The subjects needed for this study have been 40 Mosuli. children. The children speak the MosuliArabic dialect [(1)]. All of them have beennormal. That is, none of them suffers from any defects in articulation. They have beenof both sexes.The children ranged in age from 2-4 years. One of the children have been the researcher's own son who was at the age of two and six months and the other children were interviewed individually with the help of their governess at some nurseries.

b) **The Data:**On the word level, the materal used in this study has been a number of pictures (48 pictures). These pictures are ofentities are of different syllable structures. The words are divided into three groups: disyllabic (15 words), trisyllabic (22 words) and poly syllabic(11 words). The pictures include words which are familiar to the children, i.e. names of animals, objects, food, etc. The list of the words used in this paper was given in (Appendix1).

On the utterance level, on the other hand, a number of phrases and sentences in which (WSD) occurred has beenheared in the spontaneous speech of the children.That is, some children have been subjected to intensive language observation for a period of two years. The children's realization of utterances was compared with adult's pronunciation, Since all children's realization is dependent on the phonology of the adults. As regards this point, Grunwell (1982: 58) says:

"An analysis of the correspondences between the patterns of the adult units and the patterns in the child's realization of these units is a necessary procedure if one is to pinpoint in detail the differences between the two".

c) **The procedure:**The procedure followed in this study has been as follows:

A group of pictures has been presented tothe children. The children have been asked to say what they see in the pictures. The

(1)Mosuli dialect: is a dialect spoken in the city of Mosul, which is one of the biggest cities in the north of Iraq.

pronunciation of the children has been immediately recorded by using a mobile phone, transcribed phonemically and then analysed.In addition, the spontaneous connected speech of the children has also been recorded and analysed.

The childrenhave been divided according to their ages into eight groups. Each group contains five children as follows :

1st Group	2-2:3	Two years – two years and three months.
2nd Group	2:4-2:6	Two years and four months–two years and six months.
3rd Group	2:7-2:9	Two years and seven months-two years and nine months.
4th Group	2:10-3	Two years and ten months-three years.
5th Group	3:1-3:3	Three years and one months-three years and three months.
6th Group	3:4-3:6	Three years and four months-three years and six months.
7th Group	3:7-3:9	Three years and seven months-three years and nine months.
8th Group	3:10-4	Three years and ten months–four years.

4) Data Analysis and Discussion:

The analysis of the data has been divided into two parts. The first part is related to the occurrence of deletion in the speech of children on the word level. The second part on the other hand is concerned with the occurrence of deletion in the speech of children on the sentence level.

Throughout the analysis of the data, it has beenobserved that when children produce multi-word utterances and words that are polysyllabic,they usually omit certain unstressed syllables to make words easier for them. They modify words, replace, add, and remove word bits to make them conform to a general pattern that they find easier to tackle:see (Appendix2)

The results have showed that weak syllable deletion is a common phonological process in the speech of children between two and four years old. The children often make (WSD) because their speech patterns are not yet at a mature level; therefore, they often delete weak syllables from words of more than one syllable.

Besides, children delete the weak syllable in a word because they donot have the ability to co-ordinate the lips, tongue, teeth, palate and jaw for clear speech. As a result, they simplify complex words in predictable ways until they develop the co-ordination required to articulate clearly.

On the word level, it has been found that there has been preference for the production of disyllabic words. The occurrence of syllable deletion has beensignificantly higher in polysyllabic words in initial syllable. These resultshave been in accordance with the resultsof previous studies of some scholars such as (Klein, 1985; French, 1988;Young, 1991; and Snow, 1998).

The children usually omit unstressed syllables because these syllables are less audible than stressed ones. They omitted syllables initially,medially and finally in the words, for example, /ħafijji/ instead of /ħanafijji/ "faucet",/tazlɔ:n/instead of /talifizjɔ:n/ "television" and /sa: li / instead of /ʁassa:li/ "washing machine".

Thus, such a process of simplification apparently results in a reduction of the number of syllables in a word . In other words, a child unintentionally, tries to be more economic as regards the number of syllables. But, while children approach the acquisition of their target phonology, i.e. the adult phonology, they employ less weak syllable reduction in connected speech .

The predominance of unstressed syllable deletion indicates the preference for producing the nucleus of words where emphasis is given to the stressed syllable during language expression.

Regarding the occurrence of syllable deletion according to syllable position, results have indicated a higher number of syllable reduction at the beginning of words, i.e. in initial position, for example the children produced/ ta: r /; / za: l /; / ta:b/ and / θanna / instead of / qita: r / "train", / ɤaza:l /"deer"/ kita:b/ "book" and /muθanna / "aboys name"; respectively, compered to the incidence of syllable deletion in medial and final positions for example,in medial positionthe children produced / bindʒa: n/; / labu:n / and / dʒalab / instead of / ba: ðindʒa: n / "eggplants" /jilʕabu: n / "the play" and / dʒuwe: ɤib /"socks";respectively. In final position the children also used weak syllable deletion as in: / niffa: /; / mɔ:ð /; / ta: / and / ħanaf / instead of / niffa:xa /"ballon"
/ mɔ:za:ji/"banana" / tama: ta /"tomatoes" and / ħanafijji / faucet, respectively.

In addition, it has been found that syllable deletion can take place in more than one syllable in a single word as in, for example /sa: / instead of /ɤassa: li / "washing machine" and / θal / instead of / θalla: dʒi / "fridge" .

Moreover, children leave out the syllables of some words because they are still mastering all the sounds in their language and they need to simplify some of theadult speech in such a process. Besides, syllable deletion has beeninfluenced by word length and its occurrence was higher in poly syllabic words than in trisyllabic and disyllabic words (see Appendix 4) .

The most commonly deleted weak syllables are those that appear immediately before the stressed syllables. These are called pre-

tonic syllables,for example: /mifta:ħ / - /ta:ħ/ "key", /ṣammu:n/ - /mu:n/ "bread" and / mDba: jəl /; / ba:jəl / "phone" (See, Ingram, 1976).

In addition, unstressed syllables that occur in any position after the stressed syllables may also be deleted for example /niffa:xa / - /niffa:/ "ballon", /ʤawe:ɤib/ - /ʤawe:b/ "socks", /mDba:jəl/ - /ba:j/ "phone", and /tama:ta/ - /ta:/ "tomatoes". These results are in accordance with the results of a previous study by (Williamson,2016).

Some children have produced new different words as a substitution for the words presented to them, especially those children between two and three years, for example theyhave said:

تيتي	/ ti: ti / instead of / ʕaṣfɔ: ɤ / "sparrow"
باع	/ ba: ʕ / instead of /xaɤu: f / "sheep"
عن	/ ʕann / instead of /qiṭa: r / "train"
بي شي	/ pi: ʃ / instead of / bazzu: ni / "cat"
تيتي	/ti: ti / instead of / ħama: ma / "dove"
تيتي	/ti: ti / instead of / ʤe: ʤi / "hen"
دودي	/ du: di /instead of / nəmma: li / "ant"
پپا or بالون	/ pappa / / ba:lɔ: n / instead of / nəffa: xa / "ballon
ماي	/ ma: j / instead of / ħanafijji / "faucet"
لابتوب	/ la: ptop / instead of / kDmpiju: tar / "computer"

Some other children have produced some of the words presented to them in Standard English and not in Mousli Arabic, such as[1]:

(1)The children presented some word in English and not in Mosuli Arabic although they are not nativespeakers of English. This may be

"bike" for have /pa:jsəgəl/ "bicycle" and "tomatoes" for /tama:ta/ "tomatoes"

Some children used Standard Arabic and not Mousli Arabic in producing words.For example, they have said:

دراجة	/ darra: ʤa / instead of / pa: jsagal / "bicycle"
قطة	/ qitta / instead of / bazzu:ni / "cat"
طائرة	/ ṭa: ʔira / instead of / ṭijja: ra / "air plane"
نظارة	/naðð**a**: ra/ instead of / mana: ðir / "sun glsses"

In this study, it is observed that the phonological process of weak syllable deletion does not always operate in isolation from other processes. So, within the same word two or more phonological processes can be heard in the speech of children, such as the process of substitution and for example :

/ta:l/ for /qita:r/ "train"
/ma:ta / for /ṭama:ṭa / "tomatoes"
/la:l/ for /ʁaza:l/ "deer"

It can be said that the use of weak–syllable deletion is out of control of the child and he is not even aware that she's using such a process (internet:8).

On the sentence level, on the other hand, most of the children have made syllable reduction in different contexts when they produced their spontaneous speech. The phrases and sentences presented by those children have included weak syllable deletion of one or more syllables in initial and medial position, for example/ma:ma sa'ki:ni / − /ma:ma ʔimsaki:ni/"Mother hold me"‗/ha:ðabanafsaʤi/ − /ha:da basnaʤi /"This is purple"(See, Appendix3).

The frequent occurrence of (WSD) in the speech of Mosuli children between 2 and 4 years old together with the percentages has been given in (Appendix4) .

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due the fact that they are affected by their English teaching at their nurseries.

5) Conclusion:

Weak-syllable deletion is a common and normal phonological process that is used by children to simplify their speech . It is described as the omission of one, or more syllables of a word. The process of weak syllable deletion is considered a natural part of language development. That is, while children are developing the sounds of their language, they shorten words that have many syllables and change word structure.

It is observed that syllable – reduction is widely used by Mosuli children below the age of four years,on the word level and phrase and sentence level. Children do this because they may not have sufficient ability to fully co-ordinate the movementsof their vocal apparatus. As a consequence, certain sounds, sound combinations or transitions from one sound to another may be currently too difficult for the children. They may; therefore, simplify the production of complex words.

It can be said that the preference for the production of disyllabic words reassures the difficulty of those children with complex syllabic structures and in part, explains their spontaneous speech unintelligibility. And the predominance of unstressed syllable deletion indicates the preference for producing the nucleus of words where emphasis is given to the stressed syllable during language expression.

The deletion of unstressed syllables is higher in initial syllables and it can take place in more than one syllable in a single word. In addition, the occurrence of (WSD) is higher in poly syllabic words than in disyllabic and tri-syllabic.

The pronunciation of children doesnot merely represent accidental misses with respect to adult pronunciation. Children employ deletions and substitutions in highly systematic ways. In addition to weak syllable deletion, the children's pronunciation, in general, reflect a set of simplification strategies since speech is a wonderfully complex skill, and like any motor skill, children make several common patterns of errorsin their speech as they learn to speak clearly.

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Appendix : 1

The words as they are articulated by adults in Mosuli Arabic :

No.	Disyllabic words		Trisyllabic words		Poly syllabic words	
1.	نمر	/ namər / "tiger"	سيارة	/ sijja:ra / "car"	حنفية	/ ħana'fijji / "faucet"
2.	مفتاح	/məf'ta:ħ/ "key"	بنطرون	/ panta'ru:n / "trousers	تلفزيون	/ talafəzjo:n / "television"
3.	عصفور	/ ʕas'fɔ:ɤ / "sparrow"	نفاخة	/ nəf'fa:xa / Or / 'bumbali / "ballon"	كمبيوتر	/ kDmpiju:tar / "computer"
4.	ثعلب	/ θaʕlab / "fox"	جوارب	/ 'ʤawe:ɤib / "socks"	معكرونة	/ maʕka'rɔ:ni / "macaroni"
5.	قطار	/ qi'ta: r / "train"	حمامة	/ ħa'ma:ma / "dove"	جزرة	/ ʤaza'ɤa:ji / "carrot"
6.	دجاجة	/ ʤe:ʤi / "hen"	مثنى	/ mu'θanna / "a boy's name	مزهرية	/ mazha'rijja / "vessel"
7.	خروف	/ xa'ɤu:f / "sheep"	نملة	/ nəm'ma:li / "ant"	معلمة	/ mu'ʕallima / "female teacher"
8.	كتاب	/ ki'ta:b / "book"	دراجة	/ 'pa:jsagal / "bicycle"	مسدسات	/ musadda'sa:t / "pistols"
9.	صمون	/ sam'mu: n/ "bread"	موزة	/ mɔ:'za:ji / "banana"	مكعبات	/ mukaʕʕaba:t / "cubes"
10.	يشرب	/ jəʃɤab / "he drinks"	فراشة	/ far'ra:ʃa / "butterfly"	جكليتة	/ tʃəkle:'ta:ji / "chocolate"
11.	بطة	/ 'batta / "duck"	طماطة	/ ta'ma:ta / "tomatoes"	مبردة	/ mu'barrida / "coolant"
12.	غزال	/ ɤa'za:l / "deer"	مثلث	/ muθallaθ / "triangle"		
13.	زيتون	/ zaj'tu:n / "olive"	باذنجان	/ ba:ðən'ʤa:n / "eggplants"		
14.	تفاح	/ təf'fa:ħ / "apple"	قطة	/ baz'zu:ni / "cat"		
15.	حليب	/ħali:b/ "milk"	بطاطا	/ bata:ta / "potatoes"		

No.	Disyllabic words		Trisyllabic words		Poly syllabic words	
16.			ثلاجي	/ θalla:ʤi /		
17.			يلعبون	/ jəlʕa'bu:n /		
18.			غسالة	/ ɤassa:li / "washing machine"		
19.			طيارة	/ təjja:ra / "plane"		
20.			نظارة	/ mana:ðir / "glassess"		
21.			موبايل	/ mɔ:ba:jəl / "Phone"		
22.			ركي	/ ʃim'zijji / "watermelon"		

Appendix : 2

Table : 1 Syllable Reduction in di- Syllabic Words.

Children's realizations of di-syllabic words		Adult's pronunciation in Mosuli Arabic	Meaning
نمر	/ nu:n / / nu: / / ill / / ba:ʕ /	/namər/	"tiger"
مفتاح	/ ta:ħ / / pa:ħ /	/məfta:ħ/	"key"
عصفور	/ ti:ti / / lu:l /	/ ʕaṣfɔ:ɤ /	"sparrow"
ثعلب	/ θabb / / ba:ʕ / / lab /	/ θaʕlab /	"fox"
قطار	/ ta:r / / ta:l / / ʕann /	/ qita:r /	"train"

Children's realizations of di-syllabic words		Adult's pronunciation in Mosuli Arabic	Meaning
دجاجة	/ ʤi: / / ti:ti /	/ ʤe:ʤi /	"hen"
خروف	/ xu:f / / ʔu:f / / huff / / ba:ʕ /	/ xaɤu:f /	"sheep"
كتاب	/ ta:b /	/ kita:b /	"book"
صمون	/ nu:n / / mu: n/ / hu:n /	/ sammu:n /	"bread"
يشرب	/ ʔabb / / ʃabb /	/ jəʃɤab /	"he drinks"
بطة	/ ti:ti / / ta: / /ta:/	/ batta /	"duck"
غزال	/ la:l / / za:l / / ba:ʕ /	/ ɤaza:l /	"deer"
زيتون	/ nu:n / / tu:n / / ni: /	/ zajtu:n /	"olive"
تفاح	/ pa: ħ / / fa:h /	/ təffa:ħ /	"apple"
حليب	/ ħi:b / / bi:b / / hi:b /	/ ħali:b /	"milk"

Table : 2 Syllable Reduction In tri-syllabic words:

Children's Realization of tri-syllabic words		Adult's pronunciation in Mosuli Arabic	Meaning
سيارة	/ha:la/ /ʕann/	/sijja:ra/	"car"
بنطرون	/tu:n/ /pantal/ /pattu:l/ /tamm/ /pantu:n/ /nu:n/ /talu:n/ /talu:n/	/pantaru:n/	"trousers"
نفاخة	/fa:xa/ /niffa:/ /nafiħ/ /pappa/ /nəffa:h/	/nəffa:xa/	"ballon"
جوارب	/ʤawe:b/ /de:b/ /ʤalab/ /ʤe:lib/	/ʤawe:ɤib/	"socks"
حمامة	/ti:ti/ /ma:ma/	/ħama:ma/	"dove"
مثنى	/fanna/ /θanna/ /sanna/ /tanna/ /ʔanna/ /manna/	/muθanna/	"a boy's name"
نمالي	/ma:li/ /ma:ni/ /na:li/	/nimma:li/	"ant"

Children's Realization of tri-syllabic words		Adult's pronunciation in Mosuli Arabic	Meaning
	/du:di/		
باسكل	/hətəl/ /ʔəttəl/ /bajk/ /ʕənn/ /səkəl/ /darra:ʤa/	/pa:səkəl/	"bicycle"
موزاي	/ʔizza:j/ /da:jji/ /mɔ:ð/ /ʕam/	/mɔ:za:ji/	"banana"
فراشة	/fa:ʃa/ /du:di/ /ti:ti/ /ta:ta/	/farra:ʃa/	"butterfly"
طماطة	/ta:ta/ /ta:ta / /ba:ta/ /tumajtu/ /ta: /	/tama:ta/	"tomatoes"
مثلث	/sallas/ /fallaf/ /fallas/ /sallaθ/ /ʔallaθ/ /hallaθ/ /θallaθ/	/muθallaθ/	"triangle"
باذنجان	/ba:da:n/ /ba:ʤa:n/ /bindʒa:n/ /ʔədʒdʒa:n/ /ʤa:n/	/ba:ðəndʒa:n/	"eggplants"

Children's Realization of tri-syllabic words		Adult's pronunciation in Mosuli Arabic	Meaning
	/bəndʒa/ /ʔindʒa:n/ /da:n/		
قطة	/bazzɔ:j/ /nu:ni/ /naw/ /pi:ʃi/	/bazzu:ni/	"cat"
بطاطا	/ta:ta/ /ta:ta/ /ta:t/	/bata:ta/	"potateos"
ثلاجة	/θa:ʤi/ /θal/ /θaθ/	/θalla:ʤi/	"fridge"
يلعبون	/ʕabu:n/ /bu:n/ /labu:n/ /nu:n/	/jilʕabu:n/	"they play"
غسالة	/sa:li/ /ta:li/ /ʔa:li/ /sa: /	/ɤassa:li/	"washing machine"
طائرة	/ta:la / /ta:ʔira/ /ta: /	/tajja:ra/	"airplane"
نظارة	/maðar/ /mantar/ /na:ða/ /na:lil/ /la:ðir/ /dil/	/mana:ðir/	"sunglasses"

Children's Realization of tri-syllabic words		Adult's pronunciation in Mosuli Arabic	Meaning
موبايل	/ba:jil/ /ba:j/ /muba:l/ /ʔa:jil/ /bu: / /ba: /	/mɔ: ba:jəl/	"phone"
ركي	/nimzi/ /ʔizzi/ /mizzi/ /ʃim/ /pitti/	/ʃəmzijji/	"water melon"

Table : 3 Syllable Reduction in poly-Syllabic Words:

Children's Realization of poly-syllabic words		Adult's pronunciation	Meaning
حنفية	/ħafijji/ /ʔijji/ /ħanaf/ /ma:j/	/ħanafijji/	"faucet"
تلفزيون	/tazzɔ:n/ /tafzɔ:n/ /taffizzɔ:n/ /tazlɔ:n/ /fizjɔ:n/ /zɔ:n/ /ta:ləzjɔ:n/ /ʔazɔ:n/ /ʔabzɔ:n/ /nafzɔ:n/ /nɔ:n/ /tafəz/ /taptɔ:n/ /sɔ:n/ /fəzjɔ:n/ /talizjɔ:n/ /tɔ:n/ /taffɔ:n/ /faltəzzɔ:n/ /talləzzɔ:n/	/talafəzjɔ:n/	"television"
كمبيوتر	/ku:tar/ /tal/ /pitar/ /la:ptDp/ /pju:tar/ /kampitar/ /ju:tal/	/kDmpiju:tar/	"computer"

Children's Realization of poly-syllabic words		Adult's pronunciation	Meaning
	/hitar/ /ʔintar/ /kampintar/		
معكرونة	/kalɔ:ni/ /nɔ:ni/ /ʕam/ /ʔɔ:ni/	/maʕkarɔ:ni/	"macaroni"
جزرة	/ʤa: / /zaɤɤ/ /ʤizza/ /ʤa:ʤa /	/ʤəzaɤa:ji/	"carrot"
مزهرية	/ʔijja/ /halijja/ /hijja/ /ʔalijja/	/mazharijja/	"vessel"
معلمة	/mlaʕmi/ /ʕallima/ /ʔallima/	/muʕallima/	"teacher"
مسدسات	/daddasa:t/ /dasa:t/ /ta:q/	/musaddasa:t/	"pistols"
مكعبات	/kaʕaba:t/ /ʕaba:t/	/mukaʕʕaba:t/	"cubes"
جكليتة	/ta:jji/ /ʔille:t/ /ʕamm/	/tʃəkle:ta:ji/	"chocolate"
مبردة	/ballida/ /hawa/	/mubarrida /	"coolant"

Appendix : 3

The use of Syllable – Reduction on the phrase and sentence – level

The following are some phrases and sentences that are produced by the children:

Children's Realization	Adult's pronunciation	Meaning
/ba:ba taɤa:nu/	/ba:ba ʔəʃtaɤa:nu/	" father has bought it"
/ma:ma sa'ki:ni/	/ma:ma ʔəmsaki:ni/	"Mother! hold me"
/ha:da basnadʒi/	/ha:ða banafsadʒi/	"This is purple"
/ʔana ha:f/	/ʔana ʔaxa:f/	"I feel afraid"
/ʔi: d ʕi: b orla:ʕi:b/	/ʔaɤi: dəl mala:ʕi:b/	"I want the toys"
/ja:ʔ fannijja /	/ʔaʃia:ʕ fannijja/	"Artistic things"
/ʔi:d ṣina:ʕi/	/ʔaɤi:d ṭi:n ʔəs ṭina:ʕi/	"I want play doh"
/həddwe:ni/	/ʃahad we:ni/	"Where is Shahad?"
/ma:ma ʕa:li/	/ma:ma taʕa:li/	"Mom come"
/ʔabu:n kaʕʕaba:t/	/jilʕabu:nbil mukaʕʕaba:t/	"They play with cubes"
/kataʕit ʔi:da /	/ʔənqataʕət ʔi:da /	"(For the doll), its hand was cut"

Appendix : 4

1st Group : Age 2-2 : 3 years

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subject : 1	15	22	11	100%	100%	100%	100%
Subject : 2	15	22	11	100%	100%	100%	100%
Subject : 3	15	22	11	100%	100%	100%	100%
Subject : 4	0	0	0	0%	0%	0%	0%
Subject : 5	6	10	10	40%	45.4%	90.9%	58.7%

2ndGroup : Age : 2 : 4-2 : 6

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subject : 1	5	3	11	33.3%	13.6%	100%	48.9%
Subject : 2	0	5	4	0%	22.7%	36.3%	19.6%
Subject : 3	0	6	9	0%	27.2%	81.8%	36.3%
Subject : 4	1	4	9	6.66%	18.1%	81.8%	36.3%
Subject : 5	1	3	9	6.66%	13.6%	81.8%	34.02%

3rd Group : Age 2:7 – 2:9

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subject : 1	0	0	3	0%	0%	27.2%	9.06%
Subject : 2	0	2	3	0%	9.09%	27.2%	12.09%
Subject : 3	0	1	8	0%	4.54%	72.7%	25.7%
Subject : 4	0	0	3	0%	0%	27.2%	9.06%
Subject : 5	1	2	9	6.66%	9.09%	81.8%	32.5%

4th Group Age : 2:9-3

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subject : 1	13	15	11	86.6%	68.1%	100%	84.9%
Subject : 2	0	1	10	0%	4.54%	90.9%	31.8%
Subject : 3	6	18	11	40%	81.8%	100%	73.9%
Subject : 4	0	1	11	0%	4.54%	100%	34.8%
Subject : 5	1	2	4	6.66%	9.09%	36.3%	17.3%

5th Group : Age 3:1 – 3:3

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subject : 1	0	3	10	0%	13.6%	90.9%	34.8%
Subject : 2	0	4	10	0%	18.1%	90.9%	36.6%
Subject : 3	0	6	10	0%	27.2%	90.9%	39.3%
Subject : 4	0	1	10	0%	4.54%	90.9%	31.8%
Subject : 5	0	0	4	0%	0%	36.3%	12.1%

6th Group :Age 3:4 – 3:6

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subject : 1	0	4	8	0%	18.1%	72.7%	30.2%
Subject : 2	0	1	4	0%	4.54%	36.3%	13.6%
Subject : 3	0	0	4	0%	0%	36.3%	12.1%
Subject : 4	0	1	11	0%	4.54%	100%	34.8%
Subject : 5	0	1	3	0%	4.54%	27.2%	10.58%

7th Group ; Age – 3:7 – 3:9

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subjects : 1	0	0	4	0%	0%	36.3%	12.1%
Subjects : 2	0	1	3	0%	4.54%	27.2%	13.6%
Subjects : 3	0	0	4	0%	0%	36.3%	12.1%
Subjects : 4	0	0	3	0%	0%	27.2%	13.6%
Subjects : 5	0	2	11	0%	9.09%	100%	42.4%

8th Group Age : 3:10 – 4 years

Subjects	Number of deletion produced by children			Percentages			Total
	Di-syllabic words	Tri-syllabic words	Poly Syllabic words	Di-syllabic Words	Tri-syllabic Words	Poly Syllabic words	
Subject : 1	0	1	4	0%	4.54%	36.3%	16.6%
Subject : 2	0	1	3	0%	4.54%	27.2%	10.58%
Subject : 3	0	0	4	0%	0%	36.3%	12.1%
Subject : 4	0	2	9	0%	9.09%	81.8%	30.2%
Subject : 5	0	1	0	0%	4.54%	0%	1.51%