Buhuth Mustaqbaliya (22) 2008
PP. [7-23]

# A Phonological Study of Child Utterances at the Age of Two

Umayya Idrees Younis[1]

**الملخص**

تتناول هذه الدراسة بعض الظواهر الصوتية التي يستخدمها الأطفال في عمر سنتين والذين يتحدثون العربية الموصلية ومن هذه الظواهر المماثلة في الأصوات الصحيحة والقلب والإبدال وحذف بعض الأصوات الساكنة المتجاورة وحذف المقطع الضعيف وتكرار المقطع الصوتي. حيث يستخدم الأطفال هذه الظواهر كي يسهل عليهم لفظ بعض التراكيب أو المقاطع الصوتية. وأظهرت الدراسة أن المماثلة في الأصوات الصحيحة تحدث في الخصال الصوتية الأربعة وهي اهتزاز الأوتار الصوتية ومخرج الصوت وطريقة أداء الصوت والتفخيم. ويتكرر حدوث الإبدال في السنة الثانية ويستمر حتى السنة السادسة من العمر. كما يظهر الاقلاب في عدد قليل من الكلمات في السنة الثانية ويزداد ما بين السنتين الثالثة والرابعة. أما تكرار المقطع الصوتي فيبدأ مع أولى محاولات الطفل للكلام ثم يزداد تدريجيا إلى أن يندر سماعه إلا في كلمات قليلة. وعند الأصوات الساكنة المتجاورة يقوم الطفل بحذف الصعبة منها تماما مثل ما يفعله من حذف المقطع الصعب في الكلمات المكونة من مقاطع كثيرة.

## Abstract

This study deals with some phonological processes used by children speaking Mosuli Arabic at the age of two. These are: consonant harmony, metathesis substitution, cluster reduction, weak syllable deletion and reduplication. Children make these processes in order to have easy pronunciation. The study has shown that consonant harmony occurs in voicing, place of articulation, manner of articulation and tafxim. Substitution frequently occurs at the age of two and continues till the age of

([1]) Assistant Lecturer, College of Education, Department of English.

Received: 19-02-2008
Accepted: 20-05-2008

six. Metathesis also appears in a few number of words at the age of two and increases between the third and forth years. Reduplication starts with the first attempts of the child to speak and it gradually increases until it could hardly be found except in few words. To reduce consonant cluster, the child deletes the difficult consonant quite similarly as what he does when he delete the difficult syllable in polysyllabic words.

## *1. Introduction*

The analysis of utterances produced by children is relatively problematic, because children commit errors in their speech; such as deletion, metathesis, cluster reduction and so on. These errors cannot be analysed unless the hearer is fully aware of the phonological processes(1) which are closely related to language acquisition.

Trask (1999: 169) argues that "language acquisition begins very early, perhaps even before birth". …. He also goes on to say that "sound carries through the mother's belly". The child acquires his language from listening. Some evidence show that listening to the language is an easier and faster way that enables it to acquire language. The surrounding environment is the major source of acquiring language. (See: Hirmiz, 1989: 46). Around the age of two

(1) Phonological process can be defined as what the child brings to the language in order to simplify adult words. They are often recognized by parents as simple pronunciation errors (See: Ingram, 1978: 64; Kenstowicz, N.D.: 7; Massucci, 2007: 1 and Walsh, 2007: 2).

months, the infant beings cooing. Around the age of six months, child's cooing gives way to babbling. Gradually, their babbling becomes more and more attuned to the language (See: Brown, 1980: 17; Stark, 1980: 74f; Al-Hamdani, 1982: 142; Kunger, 1970: 237f; Hirmiz and Ibrahim, 1988: 200ff; Trask, 1999: 169 and Isabelli, N. D.: p. 5 from Ch. 8). Infants become ready to utter some words and expressions in the age of eighteen months. (See: Aitchison, 1987: 121).

Crystal (1994: 5f) defines acquisition as "a term referring to the process or result of learning a particular aspect of a language, and ultimately the language as a whole". The suggestion of A universal order of acquisition has been suggested; the order of acquiring first syllables are CV or CVC, the first consonants are labial, [p] or [m] followed by [t]; while the first vowel is [? ], followed by [i]. Finally, a homorganic fricative is acquired only if the stop has been acquired (See: Ingram, 1976: 17).

When a child learns to talk, he is acquiring four different areas: sound (phonology), vocabulary (semantics), syntax (grammar and morphology) and usage (pragmatics). In this paper we concentrate on child phonology which is defined by some phonologists, such as Fikkert, (N. D.: 1) for instance says it is a term often used to describe phonological phenomena found in child language, without consideration of theoretical linguistic issues of acquisition. While Hayes. (1997: 23) says that child phonology refers to the procedures

are developed by children to reduce the complexity of adult forms to something they can handle with their limited articulatory abilities. These procedures develop sufficient regularity that it is reasonable to refer to them as the child's own phonology. Child phonology elaborates beyond what is required to reduce the child's speech to something easily pronounceable.

It is possible to have different phonological representations for the same sound in language acquisition, for example [w] is sometimes represented as /r/ and other times as /w/ (See: Hyman, 1975: 23).

In phonology, however, the first words start at age (1, 6) and end around age (6) or so. The main advances take place from (2) to (4) years (See: Ingram, 1976: 11). Therefore; we choose utterances of two-year old children.

### *2. Aim and Hypotheses*

This study aims at exposing the phonological processes produced by children at the age of two. The following hypotheses will be tested in this study:

***1-*** Reduplication starts before the age of two. It continues at this age but it appears in a very few words.

***2-*** Substitution increases at this age and it may last for two / or three other years, though, it appears in certain sounds.

***3-*** Metathesis appears in few words at this age and it increases as the child grows.

***4-*** Cluster reduction is relatively fewer than weak syllable deletion.

***5-*** Gemination appears in a clear way and in a notable number in consonant harmony.

***3. Procedure***

The procedure of this study is to collect a number of utterances produced by children at the age of two. It analyses these utterances to find out some phonological processes such as (reduplication, weak syllable deletion, substitution, consonant harmony, metathesis and cluster reduction). However, it is not an easy mission to collect child's utterances. The first difficulty which springs here is misunderstanding the child's utterances when heard for the first time. Furthermore, the child refuses to repeat them because of shyness. Sometimes we cannot understand the utterances, unless their mothers help us in this matter.

***4. Data Collection***

The data needed for this study have been collected from seven children chosen from the researcher's relatives, four of them are females and the others are males. Their ages are about two years to three and their dialect is Mosuli[(1)]. All of them are normal, that is, none of them suffers from any defects in articulation.

(1) Mosuli dialect: is a among many dialects in Iraq, it is spoken by at least 2 million people in the north of Iraq. It stands out from other dialects in many crucial respects: phonological, lexical and grammatical. (See: Sa'eed, 1998: 15 and Sa'eed, 2006: 69 f).

One of the children is the researcher's son "Al-Hasan" (H) who is at the age of 2, 10 and the other is Al-Hasan's cousin "Zayd" (Z) who is at the age of 2, 4. The researcher mainly depends on them. They have been subjected to intensive language observation for a period of 2 months. We tried to hear each one's utterance twice or more in order to find out what process happens in it by comparing it with the adult pronunciation.

### *5. Analysis*

Some of the most widely observed phonological processes are: 1-Consonant harmony, 2-Substitution, 3-Metathesis, 4-Reduplication, 5- Cluster reduction, and 6- Weak syllable deletion.

### *5.1. Consonant Harmony*

Consonant harmony can simply be defined as the process by which consonants in the word become more similar, this process is often touched in child's speech. (See: Fikkert, N. D.: 8ff and Pater, 2002: 359ff). It is studied by other phonologists such as (Smith, 1973: 162ff and Grunwell, 1981: 106 ff) who offer more examples of this phenomenon. However, consonant harmony in Arabic like English occurs in more than a consonantal feature(1). Furthermore, it has an

(1) Consonantal features are voicing, place of articulation and manner of articulation. For further details (See: Roach, 2001: 20 ff).

additional feature labeled tafxim[1]. It usually occurs medially and finally, for example:

/ma:ma: ? i:d ʕadʒi:n/
/ma:ma: ? i:d ʕani:n/ ( Mam, I want paste ) ⟶ ( ماما أغيد عجين )

In this example the sound /dʒ/ which occurs in the middle of the word and it is voiced, affricate and palatoalveolar is changed to /n/ which is voiced, nasal and alveolar.

Other example is:

/nu:m ħa:mi?/
/nu:m ħa:miħ/ ( Acute ) ⟶ ( نوم حامض )

In this example, the sound /?/ which occurs finally and is a voiceless, fricative, dental and mufaxxam is changed to /ħ/ which is voiceless, fricative, pharyngeal and non-mufaxxam.

Gemination[2] also can be touched in child's speech for example: the children used to say:

/?ana ?addis/ instead of
/?ana ?adris/ ( I study ) ⟶ ( أنا أدرس )

Another example is:

/?a i:d qalam daktib/ ( I want a pencil to write ) ⟶ ( أغيد قلم دكتب )

(1) For further details (See: Rahim, 1980: 187 ff).
(2) Gemination can be defined as a double sound within a word (For more details see Atkinson King, 1980: 277).

They used to say:

/?a  i:d qalam dattib/

/d/ in the word /?adris/ and /t/ in the word /daktib/ are geminated respectively in both examples.

### *5.2. Substitution*

Substitution can be defined as a sound replaced by another without reference to neighbouring sounds (See: Ingram, 1976: 39; Grunwell, 1981: 45 and Crystal, 1994: 335). It has been broadly studied in by both Arabic and English phonologists such as (Wafi: 1971: 161f; Lock, 1980: 201ff; Al-Samarra'i, 1981: 110 ff; Al-Hamdani, 1982: 167; AL-Atjja, 1983: 97ff; Nwokah, 1986: 159ff; Razzok, 1981: 66ff; Kenstowicz, N. D.: 6f and Seymour, 2004: 92). By substitution, children avoid difficult sounds by using other ones till they become able to pronounce them. It occurs initially, medially and finally; and it is divided into many types: stopping, fronting… and so on.

Stopping is the substitution of a stop for a fricative or affricate. (See: Massucci, 2007: 1). For example (Z) used to say:

/ta:jim/ instead of /sa:jim/ (fasting) → (**صايم**)

here /s/ which is a fricative, and initial is substituted by the stop /t/; while (H) used to say:

/gara:d/ instead of /gara:dʒ/ (garage) → (**كراج**)

here /dʒ/ / which is an affricate, and final is substituted by the stop /d/. Fronting is a substitution of a velar consonant and palatal consonant with a dental place of articulation. (See: Grunwell, 1981: 111 and Massucci, 2007: 1f). The main fronting process involves a velar /k/ substituted by /t/ which is dental. Children used to say:

/ʔa:til/ instead of /ʔa:kil/ (I eat) → (آكل).

In this example /k/, which is a velar and occurs medially is substituted by the dental /t/. Vocalization, deaffrication and gliding(1)… have not been tested in this data.

### *5.3. Metathesis*

Metathesis, like substitution, has been studied by many phonologists in English and Arabic such as (Abdo, 1973: 133; Smith, 1973: 98ff; Hyman, 1975: 14f; Grunwell, 1981: 124f; Al-Samarra'i, 1981: 120; and Crystal, 1994: 217). They define metathesis as the interchange of sounds, within a word. In English for example children used to say [a:ks] instead of [a:sk].

Metathesis appears in few words and expressions. (H) used to say:

/ʕiʃta:n/ instead of /ʕitʃa:n/ (thirsty) → (عطشان).

He also used to say:

/ħiwli/ instead of /ħilwi/ (beautiful) → (حلو),

(1) For further details see (Massucci, 2007: 2f).

/daʕas/ instead of /ʕadas/ (lantern) → (عدس),

/mudassad/ instead of /musaddas/ (pistol) → (مسدس),

/ʔalbaʕ/ instead of /ʔablaʕ/ (to swallow) → (أبلع),

another child used to say:

/tikbe:n/ instead of /tibke:n/ (you are crying) → (تبكين);

### *5.4. Reduplication*

When the child starts uttering words, CV is a common syllable while CVC becomes more frequent than CV at the age of one and half year (See: Ingram, 1976: 18). There are many processes used by children to simplify the syllable structure. The first one is reduplication which has been studied by many phonologists such as (Hyman, 1975: 119f; Ingram, 1976: 18; Crystal, 1994: 293 and Kentowicz, N.D.: 14). They define it as a repetition of syllables in a word. Grunwell, (1981: 109) divides reduplication into partial reduplication in English as in (cupboard) [pəpəd] and complete reduplication as in bottle [bobo]. No partial reduplication could be heard from our informants.

Complete reduplication is used by children before the age of two, but there are some words which are still used at this age. In addition to the words /ba:ba:/ (father), /ma:ma:/ (mother); children at this age used to say:

/wa:wa:/ which refers to (pain);

/ti:ti:/ which means (bird);

(H) used to say:

/biq biq/ which refers to (hen);

while (Z) used to say:

/ja:ja:/ which refers to his brother /ja:sir/ (a male name) → (ياسر).

### *5.5. Cluster Reduction*

Many phonologists define cluster reduction as a rule to reduce clusters of consonants or vowels used by children to simplify their speech (See: Smith, 1973: 165ff; Grunwell, 1981: 102; Shriberg et al., 2003: 524 and Pater, 2002: 350).

CVC syllable is the most frequently used by children at the age of two (See: Ingram, 1976: 18). When the syllable type contains CCV(C), children try to simplify this type of syllable by deleting the first or the second consonant; a matter which depends on the difficulty of sounds. The difficult sound is deleted by children more than the easiest one, for example, children used to say:

/fu:s/ instead of /flu:s/ (money) → (فلوس);

/ti: i:n/ instead of /kΘi: i:n/ (very much) → (كثيغين)

They usually delete /Θ/ and substitute /k/ by /t/; in both of the given examples children delete the second consonant.

(H) used to say:

/pa:su:la/ and /ga:s/ instead of /fa:su:lja:/ (beans) → (فاصوليا) and /gla:s/ (كلاص) → (glass) respectively, so he substituted /f/ to /p/ and deleted /j/ in the first example and /l/ in the second one.

### *5.6. Weak Syllable Deletion*

Child's utterances are primarily monosyllabic, but when he uses polysyllabic utterances he deletes weak syllables (See: Ingram, 1976: 30f; and Fikkert, N.D.: 12). /Z/, for example used to say:

/taqa:la:j/ instead of /purtaqa:la:j/ (an orange) → (برتقالي);

While (H) used to say:

/miski/ instead of /miΘilki/ (like you) → (مثلكي)

(H) substitutes /Θ/ by /s/ and deletes /il/.

Other children used to say:

/ʕu:l/ instead of /maʃʕu:l/ (burnt) → (مشعول),

and /ħab/ instead of /ʕisħab/ (pull) → (اسحب),

/talazju:n/ instead of /talafizju:n/ (T.V.) → (تلفزيون)

and /dʒaʕak/ instead of /ju:dʒaʕak/ (it hurts you) → (يوجعك).

## *Conclusions*

This study has lighted some phonological processes which are used by children to simplify their speech. These are: consonant harmony, substitution, metathesis, reduplication, cluster reduction, and weak syllable deletion. The results show that consonant harmony occurs in the consonantal features: voicing, place of articulation, manner of articulation and tafxim in Mosuli Arabic. Gemination clearly appears in child speech. Substitution occurs frequently and largely at the age of two and may continue with a limited set of sounds till the age of six. Metathesis appears in a few number of words at the age of two and increases between three and four years old.

Reduplication starts with the first attempts of the child to speak, then it decreases gradually till it can hardly be found except in few words.

Finally, cluster reduction and weak syllable deletion are clear in child speech at the age of two.

## *References*


- Al-Atjja, K. I. (1983): FilbaħΘissawtij ʔindalʕarab. Baghdad, Darel-Hurjja.
- Abdo, D. (1973): ʔabħa:Θun fillu atil ʕarabijjah. Lebanon. Library, Beirut.
- Al-Hamadani, M. (1982): ʔllu atuwa ʕilmunnafs. Darul-Kutub lit tiba'a Wannashr, Baghdad.
- Aitchison, J. (1987): Linguistics. London, Hodder and Stoughton.
- Al-Samarrai, I. (1981): ʔattatawwurullu awij. Darul-Andalus, Beirut, Lebanon, 2nd ed.
- Atkinson-King, K. (1980): "Glossary" in Child Phonology. Vol. 1. In G. H. Yeni-Komshian, J. F. Karanagh and C. A. Ferguson, (eds.), Academic Press, PP. 277-291.
- Brown, H. D. (1980): Principles of Language Learning and Teaching. United States of America, Robert Hunter.
- Crystal, D. (1994): A Dictionary of Linguistics and Phonetics. (3rd) ed. Oxford: Blackwell.
- Fikkert, D. (N.D.): Acquisition of Phonology. Available at http://www.fikkert.com/fikkert.glot.pdf.
- Grunwell, P. (1981): The Nature of Phonological Disability in Children. London, Academic Press. INC.
- Hayes, B. P. (1997): "Phonetically Driven Phonology: The Role of Optimality. Theory and Inductive Grounding" Formalism and Functionalism in Linguistics. Available at

http://www.linguistics.ucla,edu/people/hayes/phonet/indgroun.pdf.

- Hirmis, S. H. (1989): Sajko:lo:dʒijjatulu atitifli. Daruʃʃ?u:niӨӨaqa:fijja, Baghdad.
- Hirmis, S. H., and Ibrahim, J. H. (1988): ʕilmunnafsittakwi:ni-?attufu:latu wal murahaqa. Darul-Kutub lit tiba'a wannashr, Mosul.
- Hyman, L. M. (1975): Phonology: Theory and Analysis. United States of America, Holt, Rinehart and Winston.
- Ingram, D. (1976): Phonological Disability in Children. London, Edward Arnold, (Publishers) Ltd.
- _____, (1978): "The Production of Word-Initial Fricatives and Affricates by Normal and Linguistically Deviant Children". In Language Acquisition and Language Breakdown.63-85, A. Caramazza and E. B. Zurif (eds.), London, The John Hopkins Press, Ltd.
- Isabelli, C. (N.D.): "Language Acquisition". Available at www.childphonology.doc.com.
- Kenstowicz, M. (N.D.): "Generative Phonology". United States, Cambridge. Available at, www.linguistics.ucla.edu/people/ kenstwicz/phonet/indgrover.pdf.
- Kunger, J. et al ., (1970): Sajko:lo:dʒijjat Attufu:fa waʃʃaxsjja. Dar-nna?a, Alqa:hera.
- Lock, J. L. (1980): "The Prediction of Child Speech Errors, Implications for Theory of Acquisition". In Child

Phonology. Vol. 1, 193-209. G. H. Yeni-Komshian et al. (eds.), London, Academic Press, INC.

- Massucci, M. (2007): "Phonological Processes". Available at: Larry H. Small's Fundamentals of Phonetics.
- Nwokah, E. E. (1986): "Consonantal Substitution Patterns in IGBO Phonological Acquisition". In Language and Speech. Vol. 29, Part 2, 152-176.
- Pater, J. (2002): "Form and Substance in Phonological Development". In WCCFL 21 Proceedings. 348-372, L. Mikkelsen and C. Potts (eds.). Somerville, MA: Cascadilla Press.
- Rahim, A. J. (1980): The Phonology of Spoken Iraqi: Arabic from the functional point of view. (Unpublished Ph. D. Thesis), University of Leeds, U.K.
- Razzok, A. K. (1981): "The Acquisition of Phonology (In early childhood)". In Al-Rafidayn Literary Review. University of Basrah, Vol. 22, No. 21, 61-73.
- Roach, P. (2001): Phonetics. Oxford, Oxford University Press.
- Sa'eed, A. H. (1998): The Phonological Adaptation of English Loanwords in Mosuli Arabic. (Unpublished M.A. thesis), Mosul, University of Mosul.
- _____, (2006): The Acquisition of Arabic Consonant Clusters by Preschool Mosuli Children. (Unpublished Ph. D. Thesis), Mosul, University of Mosul.
- Seymour, H. N. (2004): "A Non-contrastive Model for Assessment of phonology". In Speech and Language. Vol. 25, 1, 91-99. New York, Thieme Medical Publishers.

- Shriberg, L. D. et al. (2003): "A diagnostic marker for speech delay associated with effusion: the intelligibility – speech gap". In Clinical Linguistics and Phonetics. Vol. 17, No. 7, 507-528. available at http:www.waisman.wisc.edu8000phonologyAllPUBSPUB15.pdf.
- Smith, N. V. (1973): The Acquisition of phonology. Cambridge, Cambridge University Press.
- Stark, R. E. (1980): "Stages of Speech Development in the First Year of Life". In Child Phonology. Vol. 1, 73-90. G. H. Yeni-Komshian et al. (eds.), London. Academic Press, INC.
- Trask, R. L. (1999): .language: The Basics. Great Britain, Solidus (Bristol) Limited.
- Wafi, A. A. (1971): Naʃ?atullu ati ʕindal ?insa:n wattifil. Al-Alam Al-Arabi Press, Cairo.
- Walsh, C. M. (2007): "Phonology". Available at (walsh@brittonkill.k12.ny.us.).