PHONOLOGICAL AND MORPHOLOGICAL IMPAIRMENT IN THE SECOND LANGUAGE OF TWO DOWN SYNDROME CASE STUDY SUBJECTS FROM NAKURU, KENYA

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN LINGUISTICS

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DECLARATION

This dissertation is my original work and has never been submitted to any other University.

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DEDICATION

To The Almighty God

For the ever present love and compassion,

To my parents Stephen and Jerusha Auka,

For laying a firm educational foundation. Your immeasurable love, prayers and constant encouragement has always been a source of sure inspiration.

To my dear husband Jared Omwoyo,

You were a haven of peace, patient and your support was always high above everything else. You are the love of my life.

To our children Eugene, Steve and Kemunto.

Your lovely smiles and patience makes each day a success.

To our late daughter Diana.

Your memories are still fresh in my mind.

To my siblings

For being there for me. Behold, how good and pleasant it is for brethren to live together in harmony.

Be blessed

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ABBREVIATIONS AND SYMBOLS

Asp –	Aspect
DS -	Down Syndrome
Fv –	Final vowel
1Pp –	First person plural
2Pp–	Second person plural
PI –	Plural
SLI –	Specific language impairment
CA –	Chronological age
L1 –	First language
L2 –	Second Language
MLU –	Mean length utterance
J.M –	Joseph Muthama
R.K –	Ronald Kipruto
T.V –	Television
Sg –	Singular
2Ps –	Second person singular
1Pp –	First person singular
Tns –	Tense
Pst -	Past
Perf -	Perfect

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ABSTRACT

This study set to identify and analyze the phonological and morphological impaired features of Down Syndrome subjects in their spontaneous speech, pictorials and repetition exercises. Samples of two Down Syndrome subjects; speakers of Kiswahili and their L1 Kikuyu and Kalenjin respectively were taken one from a home environment and another from a special school in Nakuru. This study had hypothesized that substitution errors would be the most frequent ones in the subjects' speech in relation to phonological impairment and that omission errors would affect more agreement-marking morphemes than tense marking ones in the subjects' speech in relation to morphological impairment. Collection of data was done using a tape recorder in capturing the subjects' spontaneous speech, pictorial based and word repetition exercises. Important information regarding the subjects' background and condition concerning the study was provided by family members and care-givers. The study's hypotheses were both confirmed. The findings showed that substitution errors in phonological impairment were indeed many, compared to other phonological errors: omission and addition. Omission errors in morphological impairment affected more agreement-marking morphemes than tense marking ones in the subjects' speech. No improvement was noted in the speech patterns of the subjects despite conducting the interviews in Time-1 and Time-2.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

According to Kimberly (1998:90), Down Syndrome (DS) also called Trisomy 21, is a condition in which extra genetic material cause delays in the way a child develops, both mentally and physically. It is a genetic disorder caused by the presence of a third copy of chromosome 21 that is common and readily identifiable chromosomal condition associated with mental retardation. This neurodevelopmental disorder affects about 4000 children born in the US or about 1 in every 800 to 1000 live births.

Kimberly continues to note that in normal conception, a baby inherits genetic information from its parents in the form of 46 chromosomes: 23 from the mother and 23 from the father. In most cases of DS, a child gets an extra chromosome 21 for a total of 47 chromosomes instead of 46. It's this extra genetic material that causes the developmental delays of the body and brain associated with DS. It is caused by a chromosomal abnormality, whereby for some unexplained reason, an accident in a cell development results in 47 chromosomes instead of the usual 46 chromosomes.

Studies have reported that the average IQ of young adults with DS is around 50, whereas young children without this condition typically have an IQ of 100. The studies indicate that language abilities are relatively more impaired than other areas of cognition in this population.

Scovel (1998:84) notes that, “The genes which carry the human heritage for speech are countermanded by an inherited defect that is transported by the same genetic code. Inherited disability does not attack language directly; loss of linguistic capacity is a consequence of the more global loss of higher cognitive functions”. It should be noted that, just as in the general population, there is a difference in ability in DS resulting from genetic differences and differences in the environments through which the genes act. Individuals with DS inherit a full set of chromosomes from their parents as typically developing children do, a long with the extra chromosome material. These children also experience a wide range of environments at home and in school that will contribute to their literacy outcomes.

Pinker (1984:29) says that “In general, language acquisition is a stubbornly robust process; from what we can tell there is virtually no way to prevent it from happening short of raising a child in a barrel’’. If a child did not develop language readily, it indicated that sometimes this `robust’ process may not work with some children such as those who suffer from Down Syndrome.

Chapman et al. (1997) on their web article suggest that children with DS will display:

a) A specific language impairment,

b) A “critical period” for language acquisition,

c) A “simple sentence syntactic ceiling” in production,

d) A deficit in grammatical morphology.

They add that “Children with DS appear to have a specific language impairment (SLI) compared to control children, in a number of different words and total words (in the first 50 utterances) and in the mean length of utterance (MLU)”.

> There are unique verbal language characteristics of persons with DS. These children experience slower development of language relative to other cognitive skills. Communication performance is characterized by better language comprehension than production; also vocabulary use is better than the mastery of grammar of the language. There is a protracted period of unintelligible speech.

Ciccheti and Beeghly (1990:313) say that “Children with DS experience specific difficulties in acquiring language structures; most children advance little beyond the level attained by the normally developing 2 year-old child.’’ They say,

> …It poses challenges pertaining to how children with DS acquire knowledge of the grammatical structures of English, including both syntax and morphology. These children have constraints on how words can be combined to make a sentence as well as appropriate use of function words both within and across words (e.g. use of infinitive markers as in *“**i**” want **to** go* or of the grammatical markers ``***s’’*** *in “she want–**s** an ice cream”).*

In his study, Dodd (1976) quoted in Barret (1999:314) compared the phonological errors produced by severely retarded children with DS, children with non-specific retardation and normally developing children, match on overall cognitive mental age. He

noted that children with DS produced more errors than either of the other groups, more different error-types and their phonological development lagged significantly behind their cognitive level.

Chapman et al (1992), quoted in Barret (1999:320), "report significantly lower use of free and bound morphemes in the narratives produced by children and adolescents with DS". They further argue that DS may involve specific deficits in acquiring functional categories. An early study by Chiat and Hirson (1987) suggested that compared to typically developing children, the development of phonological awareness follows a different path in children with DS. They found out that a group of French children with DS were challenged on tasks of sound omission, in contrast to the findings from typical development.

Below are examples of Ruth's output from Chiat and Hirson (1987) quoted in Collinge (1990:248)

Phonological omission in words and stereotyped phrases

Target word	**Response**
1) Disgusting	*gustin*
Invisible	*vivible*
Look after	*kafter*

Deletion in sentences

Target word	**Response**
2) Get the stuff out	(*-the stuff out*)
Put the puppets on here	(*-the puppets on here*)
What's the matter with you?	(*-matter with you*)
I'm not going to be a teacher	(*-am go teacher*)
You go to my school	(*-you my school*)

Looking at the studies that have been done on DS, very little has been done particularly in Kenya, that is, in languages other than English. Of interest to this current study is the extent to which similar linguistic symptoms and developmental benchmarks appear in different languages. Such studies have been carried out in major European languages e.g. English and they indicate that there are differences across languages in which elements of the linguistic system are impaired.

The present study chose to base the study on two DS subjects' second language (Kiswahili) given that the literature mentioned from the previous section refer to DS in first language acquisition and the fact that the researcher is not a native speaker of the subjects' L_1 (Kikuyu and Kalenjin) respectively. This study was motivated to study the language of 24 year-old Joseph Muthama and 19 year-old Ronald Kipruto henceforth (J.M and R.K), male subjects in two different sociolinguistic environments.

Here are excerpts from the two DS subjects' spontaneous speech. The letter **R** stands for the Researcher, while letter **S** stands for the Subject. The examples indicated by subscripted numbers before the subjects' utterance correspond to the serial examples of the same utterance in the full text in the appendices.

Extract 1: Interview with J.M

	Target word	**Gloss**
R: *Unaitwa nani?*		'What is your name?
$3._1$ S: *Jose*	*Joseph*	
R: *Ulikuja hapa lini*?		'When did you come here?'
$4._3$ S: *Mekuja Samani*	*Nilikuja zamani*	
R: *Umepona?*		'Have you recovered?'
$5._4$ S: *Ee…. Mepoma*	*Nimepona*	'I have recovered'

As is evident in J.M's speech from the extract above, it appears that the deficit is across phonology and morphology. Phonological impairment is evidenced by the substitutions made in the word *zamani* produced as *samani*. J.M substituted a voiced alveolar fricative/**z**/ in word initial position with a voiceless alveolar fricative /**s**/. Since Kiswahili is an agglutinative language, the verb carries with it a morpheme denoting the subject. Notice that J.M cannot insert the prefix in a word like *nimekuja*, instead he produces *mekuja*, omitting the morpheme inflecting for person and number /**ni**/, while he substitutes that inflecting for tense from /**li**/ indicating past tense to /**me**/ indicating the present perfect tense.

Extract 2: Interview with R.K

	Target word	**Glos**
R: *Unaitwa nani*?		'What is your name?'
6.$_{82}$ S: *Rona Kipruto*	*Ronald ipruuto*	
R: *Unapenda mchezo gani*?		'Which games do you like?
7.$_{105}$ S: *Ampira*	*Mpira*	

From R.K's spontaneous speech above, it is evident that his production of the last two consonants /**l**/ and /**d**/ in articulating his first name were omitted. There was an addition of vowel /**a**/ through prefixation to produce the non-word *ampira*.DS patients also delete function words as in J.M's and R.K's spontaneous speech below.

8.$_{63}$ ***J.M****: Mama angare napika* for 'Wangare's mother is cooking' rather than *Mama Wangare anapika*

9.$_{124}$ ***R.K****: Hiki kapu yangu* for 'this is my basket' rather than *Hiki ni kikapu changu.*

1.2 Statement of the problem

The literature referred to in the background above reported some linguistic deficits in English where morphemes that inflect for number and tense got substituted and some deleted from word endings. It also reported of phonological errors made in words in various studies. Unlike English, whose bare stems will still remain meaningful, the target language Kiswahili is an agglutinating language with a different morphological arrangement.

In view of what that literature above reported, and the observations made from the two DS subjects' production, the present study would want to fill the knowledge gap by identifying and analyzing similar patterns of linguistic deficits in the performance of the two DS subjects in Kiswahili.

The present study, therefore, was motivated to study the two subjects' degree of phonological and morphological impairment in their speech.

The study will be guided by the following questions:

- What types of phonological impairment characterizes the Kiswahili of the two DS subjects?
- What types of morphological impairment characterizes the Kiswahili of the two DS subjects?

1.3 The objectives of the study will be:

- To identify and analyze the types of phonological impairment in the subjects' speech.
- To identify and analyze the types of morphological impairment in the subjects' speech.

1.4 Hypotheses of the study

The study will be based on the following hypotheses:

- In relation to phonological impairment, substitution errors will be the most frequent ones in the subjects' speech.
- Omission errors will affect more agreement-marking morphemes than tense marking ones in the subjects' speech.

1.5 Rationale of the study

The phenomena like these mentioned above is of great interest, while there is no any similar study on other languages ,this makes it more interesting for the present study to fill the knowledge gap in identifying and analyzing the linguistic structures of DS subjects in Kiswahili.

This study, therefore, will provide an insight into the language impairment caused by genetic factors other than the usual known neurological factors of mental retardation. By identifying and analyzing the phonological and morphological errors, the degree of impairment can be singled and quantified.

This study's findings can be compared with others done before in other languages hence provide a basis to be used by future researchers into the phenomenon. The present study can be vital to those special school teachers who teach DS children like R.K, his parents and more importantly to the caregivers of J.M, so as to enable them know the areas of language difficulty to these subjects and how they can be dealt with.

This study's findings will help intervene in helping DS subjects to learn language faster by focusing on how to handle the specific problem areas. Cook et al. (2003) notes that the sensory system deficits among children with DS leads to a problem in oculomotor control hence affect their school related activities such as reading and writing. Owing to their linguistic impairments, DS subjects like J.M are kept in a home

environment which poses difficulty in learning language patterns while their typically developing peers join school as from age three.

It is crucial to note that, although the percentage of children that suffer from this syndrome is small (7-8%), and in varying degrees, the study will by all means be significant in giving an insight to face the challenges by care-givers and pre-school teachers.

1.6 Scope and delimitations

This study will be limited to phonological and morphological aspects that were impaired of the two DS subjects. Specifically, the study will be looking for evidence of pronunciation patterns e.g. errors of omission, substitution and addition in word initial, medial and final positions in the two language impairments. It will further single out errors of inflectional morphology in the subjects' verb forms.

1.7 Theoretical framework

The present study will combine theories that are relevant in the analysis of the DS subjects' language disorders. It will anchor on the psycholinguistic theory of Down Syndrome and Language acquisition from a developmental perspective. Kimberley on his web article says that children with DS may face many challenges, health problems, hearing impairments and learning disabilities, including those affecting language development. He continues to note that most children begin learning language skills such as grammar and speaking, at rapid rates early in their lives; they, however, typically

experience delays in language development, learning more slowly and at varying rates. Speech production is difficult and many problems in communication have been linked to difficulties with speech production and grammar use.

Lenneberg (1967) quoted in Ciccheti and Beeghly (1990:302) claims that the development of language in children with DS is but a slow-motion replica of the normal course of acquisition, identical in all respects but rate of acquisition. A critical period of language acquisition also remains an important theoretical framework regarding the ability to learn language beyond the pre-school years; that is after a critical period for language learning has passed. Lenneberg (1967) argued that at puberty, language learning was no longer possible owing to loss of plasticity. Lenneberg's claim was based on the language growth curves observed in his longitudinal study of 62 children with DS. Over a 3- year period children with DS who had attained puberty failed to make progress in acquiring language structures; this was in contrast to younger children in whom some growth was observed.

The study, therefore, will use the theories above in analyzing the linguistic elements that have been impaired of the two DS subjects to determine which of the theories is applicable to the subjects under study.

1.8 Significance of the study

From the observations made, it is evident that DS subjects in our institutional settings and home environments do not receive adequate attention in terms of

rehabilitation of language as in the case of J.M. According to Sloper and Turner (1996), children who have developmental delay and are in need of early intervention will require more attention and support than typically developing children. Nowadays, much emphasis is given to the physical well being of the subjects ignoring virtually the very essential tool of communication '**Language'.**

Language is a necessity and therefore, there is need to encourage the development of appropriate academic programs that will assist DS subjects in rehabilitation. Early intervention programs are crucial not only to DS subjects, but also to parents of the said children because they face unique responsibilities and challenges associated with raising children with developmental delay. This study, therefore, will seek to contribute to the academic programs that will be initiated for this crucial cause hence remove higher levels of stress that the concerned families face.

1.9 Literature review

According to Selikowitz (2008:26), DS does not seem to have been recognized as an entity until 1866, when Dr. John Langdon Down, a clinical inspector at the Earls Wood Asylum in surrey, first isolated and described specific anomalies in a group of children and adults he was observing. His descriptions concerned mainly their mental delay and facial traits that he compared to the Mongol population defining them a "regression towards a primitive oriental typology. For this reason for many years, people with DS have been given the name of "Mongoloid", which very soon ended up by

denoting “a person who, though mature, is still a child, or simply “an incomplete child” Down Syndrome got the name after Dr. Down.

While Dr. Down had tried to isolate the common features of this population …several other analyses and attempts to define the causes and consequences of this condition followed, adding every time more details about anomalies depending on the syndrome, among which the prevalence of maternal (meiosis) non-disjunction which increase with maternal age. He says that an older mother regardless of whether she has given birth or not, is likely to give birth to a child with DS. The chance of a woman having a child with DS increases with age at the time of conception. The increase is particularly marked from about the age of 35 years. Other causes may include: Tuberclosis, alcoholism and thyroid deficiencies in the parents which cause intellectual disability.

Any child with a delay in learning to communicate in a language is going to be seriously disadvantaged in being able to gain knowledge of the world he lives in. DS subjects like anyone else require a range of skills to communicate. Promoting these skills and helping individuals with DS to overcome linguistic difficulties is clearly fundamental for all aspects of their social and mental development.

Evans and Hampson (1968) quoted in Ciccheti and Beeghly (1990:305) reported that the first words could appear any time from 1 year to 6 years of chronological age, and the first sentences any time from 1 year to 17 years of CA. They further argued that

the “worst” area of development in DS individuals is language and that they lag behind matched controls in language. This study will look into the impaired language features of two DS subjects.

Stoel-Gammon (1981) after reviewing several studies concluded that there was little difference in terms of the quality and quantity of vocalizations in babies with DS up to age 12 months. However as they reach the age of 1 year, the delay begin to become evident as many children with DS do not begin to use words until 24-36 months of age with some beginning verbalization as late as 7-8 years.

Dodd (1976) quoted in Bray (1991:70) suggested that DS children’s phonological errors may be more likely to occur in spontaneous speech than imitative vocalizations because of difficulty in planning of articulatory movements. In his study, Dodd found out that the children with DS produced more different phonological errors and their phonological development lagged significantly behind their cognitive level as compared to the typically developing group. This study will seek to find out the patterns of impairment in the phonological errors by the two DS subjects in Kiswahili being an agglutinating language.

Oller (1986) quoted in Barret (1999:313) notes that during the first year of life, infants develop the capacity to produce speech sounds. They proceed through the stage of cooing, vocal play and babbling. In the second half of the first year, canonical babbling begins, marking the most important developmental precursor to meaningful speech.

Research on individuals with DS has led to contradictory findings. The present study will seek to establish the two DS subjects' development in speech if any.

An account put forth to account for the extreme linguistic deficits in children with DS refers specifically to the language environment. Miller (1987) suggests that a lack of maternal responsiveness at the pre-linguistic level may be responsible for delay in language. He further says that despite the considerable range of individual differences, most children are late in saying their first words, their vocabulary grows more slowly than in ordinary children and although they use the same range of two-word as all children, they have difficulty in mastering the many rules for talking.

Individuals with DS are usually good communicators and are actually keen to interact socially right from infancy but they have to rely on non-verbal skills such as gesture for longer than other children because they usually experience significant speech and language delay. Once they begin to talk, they make good use of the speech and language skills that they have for the same range of communicative activities as everyone else, particularly if encouraged to do so by sensitive support from those around them at home, at school, and in the community.

Lynch et al (1990) suggest that the delays in canonical babbling in DS might be related to the motor delays and hypotonicity that are characteristic of this population. In the previous section it was reported that problems in expressive aspect of language continue in children with DS, as they typically have difficulties with the phonological

aspects of language, once they begin producing words. This is in line with the findings reported above by Dodd (1977) in Barret (1999:313).

Radford et al. (1999:250) postulates that there is a consensus that SLI children have problems in the area of inflectional morphology, and that at first sight; the picture got from examining the language of such children is very similar to that of agrammatism in Broca's aphasia. SLI children often omit grammatical function words and bound morphemes encoding case, gender, number, person and tense or apply them inconsistently. They further say that inflectional morphology comes to a standstill at an early age, and beyond that point the acquisition process cannot advance without difficulties. The study will look into the inflectional morphology, particularly person and number morphemes versus the tense marking morphemes of the two DS subjects to determine the degree of impairment in terms of omission versus substitution errors.

Barett (1999: 313) says that as in all syndromes, despite the relative uniformity of the underlying etiology, the phenotype varies quite broadly, with IQ scores in the population ranging from near normal levels to the severely retarded, though the majority of children with DS have moderate levels of retardation, in the 45-55 range. Buckley (2000:23) notes that some 10-15% of children with DS is significantly more impaired in speech and language skills and makes significantly slower progress than most typically developing children. He further notes that, spoken language skills are usually delayed relative to the children's non-verbal ability and this suggests a profile of specific language impairment (SLI).

Kent (2004:288) says that DS is characterized by frequent hearing loss in infants and children with more than 75% of young children found to have at least a mild hearing problem at sometime in childhood. These hearing problems throughout early childhood can lead to greater language and speech delay. Chapman et al (2007: 249) builds on what Barret said earlier that children with DS have cognitive and language deficits secondary to a genetic disorder involving trisomy of the 21st chromosome. This is the most frequent of the chromosomal disorders resulting in intellectual disability; hence language learning is particularly problematic for these children.

Chapman et al (2007:257) cites that the most difficult component of language for most children with DS to acquire is expressive Morpho-syntax. Expressive language skills present particular challenges and generally are more impaired than receptive skills in young individuals with DS. He continues to say that most other children with DS particularly those whose IQ scores are below 50, may not begin combining words until the age of 5-6. They then spend a protracted period which they use relatively few two-word utterances. Their rate of development is very slow and these children may never develop beyond the early stages of grammatical development.

Accardo (2008) quoted in Vinson (2011: 40) stated that as a general rule, children with DS achieve developmental milestones at about twice the age that typically developing children develop the milestones. He continues to note that children with DS typically sit at 11 months, creep at 17 months, walk unsupported at 26 months and utter their first word at 18 months. This is actually behind their normally developing peers.

Hoff and Shatz (2009:441) builds on what Chapman et al. (2007:249) and Barret (1999:313) says that DS is the most common neuro-developmental genetic disorders occurring in about 1 in 800 births. It is associated with the presence of a third chromosome 21 and that despite the relative uniformity of the underlying etiology, the phenotype varies quite broadly with IQ scores ranging from near-normal levels to the severely retarded range, with the majority of children with DS having moderate levels of retardation.

1.10 Research methodology

This section will be a presentation of the two DS subjects' case study, the procedures that will be followed in conducting the interviews, the instrumentation used and the techniques to be used in the collection, presentation and analysis of data.

1.10.1 The Subjects

The two Down Syndrome adolescents were in different sociolinguistic environments: A special school found by chance and a home environment in Nakuru County. The subjects are bilingual: One speaks Kikuyu and Kiswahili while the other speaks Kalenjin and Kiswahili. In both cases, Kiswahili is their second language in which the current study shall be based on. The two subjects throughout this study will be referred to using initials of their names **J.M** and **R.K**; this is in line with the research ethics and for confidentiality purposes. Below is a brief history of each one of them.

A) Subject 1: **J.M**

J.M is a son of a single mother, although currently orphaned. According to caregivers who are family members, he was born in1987. He is the last born child in a family of five siblings: (three brothers and one sister). J.M has stayed with his elder brother and a sister in-law since his mother passed on. The caregivers confirm that he has had communicative disorders or delays in language development since he was a young boy.

J.M has never attended any school, nor have the caregivers looked for any medical attention for him unless for a normal illness. In an interaction scenario, I realized that J.M is a socially active boy, quite inquisitive, and talkative, despite his linguistic challenges. He is right handed and active in all other spheres of life.

B) Subject 2: **R.K**

According to his father, R.K is 19 years old. He is a second born child in a family of four brothers and two sisters. The father reported that R.K's speech was greatly impaired in his early years. The father, a teacher at Timboroa, decided to take him to a special school in Nakuru in 2004 where R.K is to date.

R.K is quite social, despite his linguistic challenges. He is a bilingual speaker of Kiswahili and Kalenjin. He is fairly fluent in Kiswahili, which he has formally learnt at school.

1.10.2 Features of language under study

The features under investigation were inflectional morphology and phonological errors identified from the subjects' speech. They were elicited through the subjects' spontaneous speech, word repetition exercises and familiar pictures from the subjects' immediate environments.

1.10.3 Data collection procedure

Data was collected through individual interviews which were scheduled to take 25 minutes each in two different sessions. In each session, the subjects were engaged in structured questions of which they responded well given the fact they were unaware whether they were being interviewed. The interaction sought to elicit speech freely without arousing frustration and intimidation in the process. The subjects' dialogue with others was also observed and recorded so as to increase the reliability of the data collected.

In some sessions, the subjects and I chatted in an informal dialogue and the conversation was recorded for transcription and analysis. Selected samples of words in the target language, Kiswahili, were collected from the subjects as they spoke. The subjects were shown familiar pictures and real things from the immediate environment and asked to name them or comment on them as a way to have them speak. Each interviewee was asked about their families, games that they like and general questions for interactive purposes. The subjects' spontaneous speech was recorded using a tape and video recorder for translation, transcription and analysis.

1.10.4 Data presentation and analysis

In analysis, the speech of the two DS subjects will be done. The data analysis from the two subjects will make two different chapters: Phonological and morphological impairment. Chapter two will be divided into omission, substitution and addition errors while chapter three will be divided into omission and substitution errors. The subjects will be referred to by their full names' initials: J.M and R.K as earlier indicated.

The target language Kiswahili, will be analyzed first for phonological data, and then morphological ones. Only sample excerpts of the whole data will be analyzed in the two chapters, with the remainder of it being referred to from the appendices. A summary for each of the errors in the language under study will be tabulated, rated and a brief explanation thereof given. The subscripted numbers before the subjects' utterance indicate where in the appendices the example will be found.

CHAPTER TWO: RESULTS OF THE SUBJECTS' PHONOLOGICAL IMPAIREMENT

This chapter presents the results and analysis of the two DS subjects' recorded speech. It will describe the language samples that were recorded of the subjects' impaired phonological structures. The analysis will center on the types of phonological errors, which include: the omission, substitution, and addition of sounds within words. The full text recorded from the interviews with the subjects appears in the appendix.

The subjects' performance on a word repetition exercise is reported in tables 1 and 2. The letter **C** stands for correct. The examples indicated by subscripted numbers before each utterance correspond to the serial examples of the same subjects' utterance in the full text in the appendices.

2.1 Presentation of the results

Table 1: Subjects J.M's and R.K's performance on the word repetition exercise.

A) Time-1 Interview

No.	**The word read**	**J.M's repetition**	**R.K's repetition**	**Gloss**
1_{23}	*Mnyenyekevu*	*Kekevu*	*Nyekevu*	Humble
2_{24}	*Nairobi*	*Orobi*	*Arobi*	Nairobi
3_{25}	*Kalamu*	*Karamu*	*C*	Pen
4_{26}	*Shule*	*Sule*	*C*	School
5_{27}	*Hospitali*	*Sitali*	*Spitali*	Hospital
6_{28}	*Kitabu*	*Ng'atabu*	*Itabu*	Book
7_{29}	*Mguu*	*Uguu*	*Buguu*	Leg
8_{30}	*Mbuzi*	*Mbusi*	*C*	Goat
9_{31}	*Darasa*	*Karasa*	*Tarasa*	Class
10_{32}	*Jicho*	*Chicho*	*Chicho*	Eye
11_{33}	*Mpira*	*Pira*	*Ampira*	Ball
12_{34}	*Bakuri*	*Kukuri*	*Bakuli*	Bowl

13_{35}	*Chakula*	*Shakura*	*Jakula*	Food
14_{36}	*Daktari*	*Datari*	*Dagitari*	Doctor
15_{37}	*Mkono*	*Nokono*	*Kono*	Hand
16_{38}	*Flora*	*Lorara*	*Silolaa*	A person
17_{39}	*Wengine*	*Mengine*	*Wingine*	Others
18_{40}	*Vua*	*Nvua*	*Nvua*	Remove
19_{41}	*Polisi*	*Palisi*	*C*	Police
20_{42}	*Ugali*	*Wali*	*Gali*	Ugali
21_{43}	*Gari*	*Ngari*	*C*	Vehicle
22_{44}	*Karatasi*	*Kagasi*	*Katasi*	Paper
23_{45}	*Kitambaa*	*Tambaa*	*Tambaa*	Material
24_{46}	*Ongea*	*Kongea*	*C*	Speak
25_{47}	*Kulima*	*Nadulima*	*Kuliima*	Digging
Total repetitions	**25**	**100%**	**76%**	

From table 1, it is evident that J.M made 100% total errors against R.K's 76% of errors, implying that R.K got some words right as shown by letter **c**.

Table 2: Types of errors in J.M's word repetition exercise

Type of error	**The word read**	**J.M's repetition**	**Total errors**	**Proportion of the errors**
Omission errors	*Mnyenyekevu, Nairobi, hospitali, mpira, daktari, Flora, ugali, karatasi, kitambaa*	*Kekevu, orobi, pira, sitali, datari, Lorara, wali, kagasi, tambaa*	9/25	**36%**
Substitution errors	*Kalamu, shule, kitabu, mguu, mbuzi, darasa, jicho, bakuri, chakula, mkono, wengine, polisi, kulima*	*Karamu, sule, ng'atabu, uguu, mbusi, karasa, chicho, kukuri, shakura, nokono, mengine, palisi, nadulima*	13/12	**52%**
Addition errors	*Vua, gari, ongea*	*Nvua, ngari, kongea*	3/25	**12%**
Total	**25**	**25**	**25**	**100%**

2.2 Discussion of the results

2.2.1 Omission errors

2.2.1.1 J.M's performance

a) On the word repetition exercise

From the table 2 above, phonological omission error is evident in subject J.M's repetitions. The table shows that the subject made 36% of the omission errors, 52% of the substitution errors and 12% of the addition errors. J.M omitted the voiced bilabial nasal |**m**| in word initial position and the voiced palatal nasal |**ɲ** | to produce the non-word *kekevu* instead of the word *mnyenyekevu*$_{23}$. When producing the word *Nairobi*$_{24}$, J.M omitted the sound |**na**| in word initial position, producing the non-word *Orobi*.

In production of the word *hospitali*$_{27}$, J.M omitted the sound |**ho**| and the voiceless bilabial plosive |**p**| to produce the non-word *sitali***.** This phonological omission indicates that J.M would not comprehend and articulate long words. This can be compared with the first word *mnyenyekevu* which had its two initial sounds dropped. In uttering the word *mpira*$_{33}$, J.M dropped the voiced bilabial nasal |**m**| to produce the non-word *pira*. The word *daktari*$_{36}$, for example, had the voiceless velar plosive |**k**| omitted in J.M's production, hence the non-word *datari*. The name *Flora*$_{38}$ had its initial sound, the voiceless labiodental fricative |**f**| omitted in J.M's production.

He also omitted a high back rounded vowel |**u**| in the word *ugali*$_{42}$ producing the word *wali*. This was a **malapropism** since the intended meaning of the word *ugali* was changed to cooked 'rice.' The subject produced the word *karatasi*$_{36}$ as *kagasi* omitting

the sound |**ra**|. In production of the word *kitambaa*$_{44}$, the subject dropped the sound |**ki**| to produce the word *tambaa*, meaning to 'crawl.' The omission of |**ki**| changed the meaning from the intended one, that of a piece of cloth.

B) Time-2 Interview

b) On the picture naming exercise

Table 3: Subject J.M's performance on the picture naming exercise

Type of error	**Name of picture**	**J.M's naming**	**Total errors**	**Proportion of the errors**
Deletion errors	*Baiskeli, ufagio, wangare, mtungi, nyumba, mlango*	*Askeli, kafio, angare, tungi, umba, lango*	6/16	**37.5%**
Substitution errors	*Kikombe, kitabu, panga, kufuli, mayai, maua, sabuni, mti, kiti*	*Kokombe, bung'u, kisu, funguo, ng'ayai, naua sapuni, , niti, titi*	9/16	**56.3%**
Addition errors	*Embe*	*Wembe*	1/16	**6.2%**
Total errors/rate	**16**	**16**	**16**	**100**%

From the data displayed on table 2 of the appendix list and table 3 above, J.M made 37.5% of the omission errors. In production of the word *baiskeli*$_{49}$, he omitted the voiced bilabial plosive |**b**| and the high front unrounded vowel |**i**| to produce the non-word *askeli*. Omission was evident in the words *ufagio*$_{51}$ and *wangare*$_{56}$. J.M omitted the high back rounded vowel |**u**| and the voiced velar approximant | ɰ| to produce the non-words *kafio* and *angare* respectively. Omission also occurred in the production of the words *mtungi*$_{57}$ and *mlango.* In both words, J.M omitted the voiced bilabial nasal |**m**|. These two

examples and others from table 2 form a kind of pattern that whenever there was a consonant cluster, J.M deleted the initial consonant.

A) Time-1 Interview

2.2.1.2 R.K's performance

a) On the word repetition exercise

Table 4: Types of errors in R.K's speech

Type of error	**The word read**	**R.K's repetition**	**Total errors**	**Proportion of the errors**
Omission errors	*Mnyenyekevu, Nairobi, hospitali, kitabu, mkono, ugali, karatasi, kitambaa*	*Nyekevu, arobi, spitali, itabu, kono, gali, katasi, tambaa*	$^{8}/_{19}$	**42.1%**
Substitution errors	*Mguu, darasa, jicho, bakuri, chakula, daktari, Flora, wengine*	*Buguu, karasa, chicho, bakuli, jakula, dagtari, silola, wingine*	$^{8}/_{19}$	**42.1%**
Addition errors	*Mpira, vua, kulima*	*Ampira, nvua, kuliima*	3/19	**15.8%**
Total rate	**19**	**19**	**19**	**100%**

From table 4 above, R.K scored 42.1% in omission errors. This was slightly higher by 6.1% of subject J.M's 36% of omission errors. In production of the word *mnyenyekevu*$_{23}$, R.K produced *nyekevu* omitting the voiced bilabial nasal |**m**| in word initial position and the voiced palatal nasal |**ɲ**|. When producing the word *Nairobi*$_{24}$, R.K omitted the sound |**na**| in word initial position, producing the non-word *arobi*.

The words *kitabu*$_{28}$, *mkono*$_{37}$ and *ugali*$_{42}$ had the initial sounds: the voiceless velar plosive |**k**|, voiced bilabial nasal |**m**| and the high back rounded vowel |**u**| omitted in their production rendering them non-words; *itabu, kono* and *gali*, respectively. In uttering the word *karatasi*$_{43}$, R.K omitted the sound |**ra**| producing the non-word *katasi*. He also omitted the sound |**ki**| in production of the word *kitambaa*$_{44}$ hence producing *tambaa* which means 'to crawl.' This is a **malapropism** as it alters the intended meaning of the word.

B) Time-2 Interview

b) On the spontaneous speech

Table 5: Subject R.K's performance on the spontaneous speech

Type of error	Target word	R.K's utterance	Proportion of the errors	Percentage
Omission errors	*Usingizi, kapsoit, ng'ombe, science, iliyomwagika, uhuru, kengele, citizen, msituni, mchele*	*Singisi, kasoit, gombe, sayan, wiyomwagika, huru, ngelengele, tigizen, situni, chele*	10/25	40%
Substitution errors	*Timboroa, viazi, kulala, hapana, zipporah, kura, kibaki, neema, naweza , K.B.C, jioni, kazi*	*Tambarua, fiazi, kurara, habana, seboraa, gura, kibagi, leema, nawesa, T.V.C, chioni, kazi*	12/25	48%
Addition errors	*Dawa, embe, sio.*	*Ndawa, aembe, siyo*	3/25	12%
Total rate	**25**	**25**	**25**	**100%**

From the observations made from table 5, it is evident that R.K made 40% omission errors in his spontaneous speech. In production of the word *usingizi*$_{138}$ and *uhuru*$_{149}$, he omitted the high back rounded word |**u**| hence producing *singisi* and *huru* respectively. R.K also omitted the voiced bilabial nasal |**m**| in the words *mchele*$_{157}$ and *msituni*$_{154}$ producing *chele* and *situni* respectively. The same pattern of omitting |**m**| was noted in his word repetition exercise on table 4. In production of the word *iliyomwagika*$_{148}$, R.K produced *wiyomwagika* omitting the sounds |**i**| and |**l**| that inflect for number and tense.

A) Time-1 Interview

2.2.2 Substitution errors

2.2.2.1 J.M's performance

a) On the word repetition exercise

Radford et al (1999:93), say that there are situations where a sound can be changed into another under certain circumstances. A phonological substitution is an error that was noted in J.M's utterances. Voiceless and voiced sounds were used interchangeably in their utterances.

From the observations made from the table 3, it is evident that J.M made 52% substitution errors. This was slightly higher by 9.9% than his counterpart R.K with 42.1%. The word *kalamu,* for example, was produced as *karamu* by subject J.M who substituted the voiced alveolar trill |**r**| with the voiced alveolar lateral approximant |**l**|. In

production of the word *shule,* J.M replaced the voiceless post alveolar fricative | ʃ | with the voiceless alveolar fricative |**s**| to produce the non-word *sule.*

J.M produced the word *kitabu* as *ng'atabu,* substituting the voiceless velar plosive |**k**| with the voiced velar nasal | ŋ |. Substitution also occurred in production of the word *mguu* where the voiced bilabial nasal |**m**| was replaced by the high back rounded vowel |**u**| to produce the non-word *uguu*. Substitution was noted in the word *mbuzi* produced as *mbusi*. The voiced alveolar fricative |**z**| was replaced by its counterpart, the voiceless alveolar fricative |**s**|. The word *darasa* was produced as *karasa,* substituting the voiced alveolar plosive |**d**| with the voiceless velar plosive |**k**|. From the excerpt in the subjects' list, J.M made a phonological substitution in uttering the word *jicho***.** The voiced palato-alveolar affricate was substituted with the voiceless palato-alveolar affricate to produce the non-word *chicho.*

Phonological substitution of sounds within a word makes it lose its intended meaning. J.M produced the word *bakuri* as *kukuri,* which is a non-word. He substituted voiceless palato-alveolar affricate with the voiceless post alveolar fricative. J.M's utterances follow the rule of **natural class** formation in substitutions of the phonological features. The word *mkono* was produced as *nokono,* the voiced bilabial nasal was substituted with the voiced velar nasal |**n**|. This substitution error indicates that J.M was not consistent in production of the sound |**m**| given that he omitted it in words like *mnyenyekevu* and *mpira.*

In production of the word *wengine,* J.M produced the word *mengine.* The voiced velar approximant |ɰ| was substituted with the voiced bilabial nasal |**m**|. The word *polisi* was produced as *palisi,* the close-mid back rounded vowel |**ɔ**| was replaced with a front low unrounded vowel |**a**|.

A) Time-2 Interview

b) On the picture naming exercise

From the observations made from table 3, J.M made 56.3% substitution errors. In naming the picture *kikombe,* for 'cup', J.M produced the non-word *kokombe*. The high front unrounded vowel |**i**| was replaced with the close-mid back rounded vowel |**ɔ**|. J.M borrowed an English equivalent *bung'u* for 'book' and substituted it with the word *kitabu.* He named the picture of a *panga* as *kisu* for 'knife.' This was a semantic alternative which led to the subject substituting them with their equivalents in terms of the function they perform.

Reduplication or **consonant harmony** was a phonological process evident in production of the word *sabuni,* produced as *sapuni.* The voiced bilabial plosive |**b**| in the word medial position was substituted with its counterpart, the voiceless bilabial plosive |**p**|. The word *mayai* had its initial voiced bilabial nasal |**m**| substituted with the voiced velar nasal |**ŋ**| to produce the non-word *ng'ayai*. The words *maua* and *mti* had the initial sound |**m**| substituted with the voiced velar nasal |**n**| to produce the non-word *naua* and

niti respectively. Substitution also occurred in production of the word *kiti* produced as *titi,* the voiceless velar plosive |**k**| was replaced by the voiceless alveolar plosive |**t**|.

A) Time-1 Interview

2.2.1.2 R.K's performance

a) On the word repetition exercise

From table 4, R.K produced 42.1% substitution errors. In production of the word *mguu,* R.K produced *buguu,* substituting the voiced bilabial nasal |**m**| with the voiceless bilabial plosive |**p**|. He also substituted the voiced alveolar plosive |**d**| with the voiceless velar plosive |**k**| in production of the word *darasa* produced as *karasa*. The voiced lateral approximant |**l**| was substituted with the voiced alveolar trill |**r**| in uttering the word *bakuri,* produced as *bakuli.*

Buckley and Bird (2002:81) notes that the poor production of words may be as a result of poor storage of the phonological sound pattern of the target word so that the DS subjects do not have an accurate specification of the word in memory in which to organize correct production. Substitution of the initial sounds in the words *jicho* and *chakula* were used interchangeably. The voiceless *palato* alveolar affricate was substituted with its voiced counterpart producing the non-word *chicho*. The same trend of substitution was noted in the word *jakula.*

B) Time-2 Interview

b) On the spontaneous speech

From table 5, results show that R.K made 48% substitution errors. The word *timboroa*, for example, was produced as *tambarua* substituting the high front unrounded vowel |**i**| and the back rounded vowel |**ɔ**| with the front open -low unrounded vowel |**a|.** The word *viazi* was produced with a voiceless labiodental fricative |**f**| substituted with its counterpart, the voiced labiodental fricative |**v**|. This could be attributed to phonological resemblance of the sounds. Other substitutions in the words not analyzed here, were a repetition of the same sounds in different words from the list.

A) Time-1 Interview

2.2.3 Addition errors

2.2.3.1 J.M's performance

a) On the word repetition exercise

From table 2, results show that J.M made 12% of the addition errors. This was the lowest reported phenomenon in terms of the errors in J.M's speech. In production of the word *vua* and *gari* J.M produced the non-words *nvua* and *ngari* adding a voiced alveolar nasal |**n**| to the words in word initial position. An addition error was also noted in production of the word *ongea,* produced as *kongea.* The voiceless velar plosive |**k**| was added to the word. This type of error seemed to appear in word initial position.

B) Time-2 Interview

b) On the picture naming exercise

Table 3's results show that only one item had an addition error. This was 6.2% of the total errors in the picture naming exercise. In production of the word *embe,* the voiced velar approximant |ɯ| was added to it producing the word *wembe* that meant a different thing all the same.

A) Time-1 Interview

2.2.3.2 R.K's performance

a) On the word repetition exercise

Results in table 4 indicate that R.K made 15.8% errors of addition. R.K produced the word *mpira* as *ampira* adding a front open-low unrounded vowel |**a** |to the target word. The word *vua* produced as *nvua* had the voiced alveolar nasal |**n**| added to it similar to the addition error made by J.M in the same exercise. An addition error appeared in the word *kulima* produced as *kuliima*. The high front unrounded vowel |**i**| was added in the medial word position. In essence, this could also suggest a phonological phenomenon of **vowel lengthening** that will not be dealt with in this study.

B) Time-2 Interview

b) On the spontaneous speech

From table 5, R.K made 12% addition errors. In its production, the word $dawa_{142}$, had a voiced alveolar nasal |**n**| added to it in word initial position, producing the non-word *ndawa.* It was not possible to determine the cause of this particular impairment as it

was evident in both subjects. However, even in normal speech, some Kenyan tribes e.g. the Akamba are fond of adding the sound |**n**| in word initial positions. The word *embe*$_{146}$was produced as *aembe* adding the front open-low unrounded vowel |**a**| to it. An addition error was also evident in word medial position in the word *sio,* produced as *siyo* by subject R.K.

Table 6: Frequency and the rate of errors in subjects J.M and R.K's performance

Subjects' name	**Omission errors**	**Substitution errors**	**Addition errors**
1. **J.M** A) Time-1 Interview	$^{9}/_{25}$	$^{13}/_{25}$	$^{3}/_{25}$
B) Time-2 Interview	$^{6}/_{16}$	$^{9}/_{16}$	$^{1}/_{16}$
Total errors	$^{15}/_{41}$	$^{22}/_{41}$	$^{4}/_{41}$
%	**36.6%**	**53.7%**	**9.8 %**
2. **R.K** A) Time-1 Interview B) Time-2 Interview	$^{8}/_{19}$ $^{10}/_{25}$	$^{8}/_{19}$ $^{12}/_{25}$	$^{3}/_{19}$ $^{3}/_{25}$
Total errors	$^{18}/_{44}$	$^{20}/_{34}$	$^{6}/_{44}$
%	**40.9%**	**58.8%**	**13.6%**

From the observations of the results on table 6, substitution errors took the lead in phonological impairment with R.K making 58.8% of the errors while J.M made 53.7%. Omission errors were second with J.M's 36.6% and R.K's 40.9%. The subjects displayed little impairment in addition errors. J.M made 9.8% while R.K made 13.6%.

CHAPTER THREE: RESULTS OF THE SUBJECTS' MORPHOLOGICAL IMPAIRMENT

This chapter presents the results and the analysis of the two DS subjects' utterances. It will give a description of the language samples that were recorded of the subjects' impaired morphological structures. The analysis will center on the types of morphological errors displayed by the two subjects in areas of inflectional morphology and tense marking morphemes. The errors include: omission and substitution of morphemes within words. It will further look at other impaired morphological processes in the subjects' speech e.g. word formation, word-finding difficulty, clipping and blending.

The full text that was transcribed from recorded interviews with the subjects appears in the appendices. The subjects' performance on the sentence repetition exercise and spontaneous speech is reported in form of tabulation. The examples shown by subscripted numbers before each utterance correspond to the serial numbers of the same subjects' utterance in the full text in the appendices. J.M's performance is reported on tables 7 and 8.

3.1 Presentation of the results

3.1.1 J.M's performance

3.1.1.1 On the sentence repetition exercise and the spontaneous speech

Table 7: Subject J.M's performance on the sentence repetition exercise and the spontaneous speech

Target sentence	**Sentence and spontaneous speech by J.M**	**Gloss**
26.$_{3}$ *Ulikuja hapa lini?*	*Mekuja samani*	'When did you come here?'
27.$_{9}$ *Nikimwambia daktari uende nyumbani utafurahi?*	*…. Mefurahi…uuh*	'Supposing I tell the doctor to release you home, will you be happy?'
28.$_{22}$ *Wangare alienda shule?*	*Uuh… naenda shule*	'Did Wangare go to school?'
29.$_{63}$ *Mama Wangare anapika*	*Mama angare napika*	'Wangare's mother is cooking'
30.$_{64}$ Leo tutakula mkate	*Reo nilikura mkate*	'Today we shall eat a loaf of bread'
31.$_{65}$ *Daktari mgeni amekuja*	*Datari kugeni nakuja*	'A new doctor has come'
32.$_{66}$ *Panya ametorokea shimoni*	*Panya nakorokea sifoni*	'The rat has escaped into a hole'
33.$_{71}$ *Zahanati imefunguliwa*	*…nafunguliwa*	'A dispensary has been opened'
34.$_{73}$ *Ninaandikia kalamu*	*Naandika kalamu*	'I am writing with a pen'
35.$_{78}$ *Watoto wanacheza mpira*	*toto chesa pira*	'The children are playing'
36.$_{79}$ *Yeye amekufa*	*Yeye mekufa*	'He has died'
37.$_{81}$ *Amebeba godoro*	*Beba godooro*	'He has carried a mattress'
38.$_{67}$ Baba yangu alichinja mbuzi	*Babangu nachinja mbusi*	'My father slaughtered a goat'
39.$_{76}$ *Ameenda kuoga*	*Naenda …enda oga*	'He has gone to bathe'
40.$_{80}$ *Ninapenda kucheza*	*Napenda chesa*	'I like playing'

Let us consider the verbs produced and identify the errors J.M made in the person/number and tense marking morphemes on table 8. The symbol **x** stands for the morphemes not affected.

Table 8: Types of errors in J.M's performance on the sentence repetition exercise and the spontaneous speech.

Type of morpheme affected					
Type of error	**Word as read by J.M**	**Person/Number marking morphemes**	**%**	**Tense marking morphemes**	**%**
Error of omission	***Me****-kuj-a,* ***na****-end-a,* ***me****-furah-i,* ***na****-pik-a,* ***ni****-likur-a,* ***na****-kuj-a,* ***na****-korok-e-a,* ***na****-fungu-liw-a,* ***na****-andika,* ***na****-ches-a,* ***me****-kuf-a, beb-a,* ***na****-chinj-a,* ***na****-end-a,* ***na****-pend-a*	*a, a, ni, a, a, a, i, ni, wa, a, a, a, a, ni*		*Me, na, x, x, x, x, x ,x ,x, x ,x, x, x, x, x,*	
Total error rate %	**15/15**	**13/15**	**86.7 %**	*2/15*	**13%**
Errors of substitution	***Me****-kuj-a,* ***na****-end-a,* ***me****-furah-i,* ***na****-pik-a,* ***ni****-likur-a,* ***na****-kuj-a,* ***na****-korok-e-a,* ***na****-fungu-li-wa,* ***na****-andik-a,* ***na****-ches-a,* ***me****-kuf-a, beb-a,* ***na****-chinj-a,* ***na****-end-a,* ***na****-pend-****a***			*Li, li, ta, ta, me, me, me, li, me, x, x, x, x, x, x*	
Total error rate %		**0**	**0%**	**9/15**	**60%**

3.2 Errors of omission

3.2.1 J.M's performance

3.2.1.1 On the sentence repetition exercise and spontaneous speech

3.2.1.1.2 Inflectional morphology impairment

a) On the person and number marking morphemes

From table 8 above, morphological omission is evident in subject J.M's speech. The observations made show that J.M made 86.7% omission errors in inflections of person and number marking morphemes; this was almost 100% of the total errors. The inflectional morphemes marking for tense are in bold while those inflecting for person and number are omitted before the tense ones. Akmajian et. al. (1995: 39) say that

> … Inflectional affixes indicate certain grammatical function of words (such as plurality or tense); they occur in a certain order relative to derivational affixes; and they are not associated with certain changes that are associated with derivational affixes (such as category changes or unpredictable meaning changes). Inflectional affixes are often discussed in terms of word sets called paradigms.

Functional categories like person and number are blended into one morpheme in the inflectional categories representing an overt verb form. In most cases, the person and number morpheme is a syllable that consists of a consonant and a vowel which at some point can be reduced to either a single word or a consonant. In responding to a question in example **1**$_{3,}$ J.M omits the person marker morpheme '**ni'** to produce the word *mekuja* instead of *nilikuja.*

According to Randol (1995:260), DS subjects often exhibit selective impairments in the use of grammatical morphemes, particularly verb inflections and function words such as auxiliaries. From J.M's speech, it is evident that his morphological impairment is selective given that it is most seen in verb inflections. In example **3**$_{22,}$ J.M drops the morpheme '**a'** in production of the word *naenda* which should have been produced as *alienda.*

In uttering the words *anapika,amekuja, ametorokea, amekufa,amebeba, alichinja* and *ameenda,* J.M produced *napika,nakuja, mekorokea, mekufa, beba, nachinja* and *naenda* omitting the inflectional morpheme '**a'** that inflects for person and number. The morpheme '**wa'** inflecting for number and object pronoun (plural), was omitted in the word *wanacheza* to produce *nachesa.*

b) On the tense marking morphemes

J.M did not have much impairment in terms of the errors of omission in the tense marking morphemes. It was only in the two words *amebeba* for 'she has carried' and *ameenda* for 'she has gone' that had both their person, number and tense markers omitted altogether to produce the word *beba* and *enda.* From table 8, J.M made 13% omission errors. This shows that most tense inflections remained intact.

3.3 Errors of substitution

3.3.1 J.M's performance

3.3.1.1 On the sentence repetition exercise and the spontaneous speech

a) On the person and number marking morphemes

Observations made from table 8 show that J.M did not substitute any person and number marker, instead he omitted a good number of them. The substitution errors were rated at 0%.

Table 9. Subject R.K's performance on the sentence repetition exercise and the spontaneous speech

Target sentence		**Sentence and spontaneous speech by R.K**	**Gloss**
41:$_{86}$	*Hii shule yenu inaitwaje?*	*Hill special … eeh...akuru hills pecial cool*	'What is the name of your school?'
42$_{104}$	*Walimu wakikuchapa utafanya nini?*	*Naruka*	'If the teachers cane you, what will you do?'
43$_{106}$	*Huyu anaitwa nani?*	*Huyu? Boy… naitwa Karanja*	'What is the name of this one?'
44$_{109}$	*Simu yangu nikikupatia utapigia nani?*	*Tapigia watu*	'Supposing I give you my phone, whom will you call?'
45$_{111}$	*Sisi wanawako tunakuabudu*	*Sisi wanawako kuwakuwa budu*	'We worship you.'
46$_{116}$	*Mnaenda home kufanya nini?*	*Enda gura …piga gura*	'What are you going to do at home?'
47$_{121}$	*Rafiki amekuja*	*Rafiki nakuja*	'A friend has come'
48$_{122}$	*Mama anapika*	*Mama napika*	'Mother is cooking'

49_{123}	*Ameenda kuoga*	*Naenda oga*	'She has gone to bathe'
50_{127}	*Babangu alichinja mbuzi mnono*	*Babangu chinja mbuzi nono*	'My father has slaughtered a fat goat.'
51_{129}	*Watoto wanacheza mpira*	*Toto cheza pira*	'Children are playing.'
$52_{13}1$	*Mimi ninampenda Maria*	*Mimi napenda Maria*	'I love Maria.'
53_{132}	*Amebeba godoro*	*Beba kodooro*	'She has carried a mattress.'
54_{134}	*Nimekunywa maji*	*Anakunywa maji*	'I have drunk water.'
55_{135}	*Anavua samaki*	*Navua samaki*	'He is fishing.'

Table 10 below shows the verbs produced and the errors R.K made in the person/number and the tense marking morphemes.

Table 10: Types of errors in J.M's performance on the sentence repetition exercise and the spontaneous speech

		Type of morpheme affected			
Type of error	**Word as read by R.K**	**Person/number marking morpheme**	**Error proportion**	**Tense-making morpheme**	**Error proportion**
Omission errors	*Hill, napika, naitwa, tapigia, kuwakuwabudu, enda, nakuja, napika, naenda, chinja, cheza, napenda, beba, anakunywa, navua*	s, ni, a, ni, tu, tu, a, a, a, w a, ni, a, x a		x x x x na, na, x x x li, na x x x x	
Total error rate	**15**	14/15	**93.3%**	**4/15**	**26.7%**
Substitution errors	*Hill, naruka, naitwa, tapigia, kuwakuwabudu, enda, nakuja, napika, naenda, chinja, cheza, napenda, beba, anakunywa, navua*	x x x x x x x x x x x x x ni x		x, ta, x x kuwa, x me, x me, x x x x me, x	
		1/15	**6.7%**	5/15	**33.3%**

b) On the tense marking morphemes

Observations made from table 8 above show that J.M made 60% of the substitution errors on the tense marking morphemes. This is how he substituted.

	Word as read	**Target word**
10)	***Me*** *–kuj -a*	*Ni* ***-li*** *-kuj -a*
	Tns (come) FV	1Ps (Sg) Tns root FV
	(Pst perf)	Pst (come)
11)	***Me*** *-furah –i*	*Ni* ***-ta*** *-furah -i*
	Tns root FV	1Ps Tns root FV
	(Pst perf) happy	
12)	***Na*** *- end -a*	*A* ***-li*** *-end -a*
	Tns root - FV	2Ps Tns (go) FV
	(Go)	(pst)
13)	***Ni*** *-li -kul -a*	*Tu* ***-ta*** *-kur - a*
	1Ps (SG) Tns root FV	1Ps Tns root FV
	(Pst) (eat)	(Fts)
14)	***Na*** *-kuj -a*	*A* ***-me*** *-kuj -a*
	Asp root FV	2Ps Tns root FV
	(come)	(Pst perf) come

The above extract shows that the morphemes in bold on the left are wrongly substituted corresponding with the correct ones on the right hand side. All the verbs shown above, together with others in the data have their inflections. What seems to be a problem is having the morphological inflections for tense used to indicate present tense instead of past and vice versa and sometimes aspect substituted with either. This is a sign of difficulties in choosing the right inflection to use.

3.4 Errors of omission

3.4.1 R.K's performance

3.4.1.1 On the sentence repetition exercise and the spontaneous speech

a) On the person and number marking morphemes

Table 10 results show that the person and number morphological omission was highly rated. R.K made 93.3% of omission errors. This was the same rate at which J.M omitted the person/number morphemes. It concurs with earlier studies that children with DS indeed produce agreement errors. The symbol **x** indicates the morphemes not affected. All the morphemes inflecting for person and number were dropped except one marked with **x**, that was *anakunywa* for 'he is drinking' instead of *nimekunywa* for 'I have drunk.'

b) On the tense marking morphemes

Unlike J.M, R.K made 26.7% omission errors on the tense marker morpheme. This was slightly higher than J.M's 13%. The words *tunakuabudu, mnaenda, alichinja,*

wanacheza and *amebeba* had their tense marking morphemes omitted making them read, *kuwakuwabudu, enda, chinja, cheza* and *beba.*

3.5 Errors of substitution

3.5.1 R.K's performance

3.5.1.2 On the sentence repetition exercise and the spontaneous speech

a) On the person and number marking morphemes

Morphological substitution was evident in R.K's speech. He made 6.7% substitution errors on the person and number marking morphemes. This was seen in one and the only word *nimekunywa* for *'I* have drunk' produced as *anakunywa* for 'she is drinking'. R.K substituted the morpheme ***ni*** inflecting for the first person singular in the aspect with the morpheme **a** for second person singular.

b) On the tense marking morphemes

From table 10, results show that R.K made 33.3% substitution errors on the tense marking morpheme. This was slightly lower by 26.7% of J.M's substitution errors who made 60% of the same. These findings suggest that agreement is not completely absent in DS, but that the adult agreement paradigm seems to be incomplete with problems focusing on verbal inflections. These cases are likely to be as a result of incomplete acquisition of the morphological aspect of subject – verb agreement. It is true as per the observations made that most finite verb forms are correctly marked for agreement and verbs which do carry an agreement inflection have a subject with correctly matching person and number features.

Table 11: Frequency and the rate of errors in subjects' J.M and R.K's Performance

Subjects' name	Type of morpheme affected	Omission errors	percentage	Substitution errors	percentage
J.M	a) on the person and number marking morphemes	13	86.7%	0	0%
	b) on the tense marking morphemes	2	13%	9	69%
R.K	a) on the person and number marking morphemes	14	93.3%	1	6.7%
	b) on the tense marking morphemes	4	26.7%	5	33.3%

From table 11, it is evident that omission errors on the person and number marking morphemes are affected in the subjects' speech more than the substitution errors. J.M made 86.7% omission errors on the person and number marking morphemes against R.K's 93.3%. This was higher than the subjects' performance on substitution errors on the person and number marking morphemes at 0% for J.M and 6.7% for R.K.

3.6 Other morphological processes

3.6.1 Agrammatism

Subject R.K used telegraphic speech in some of the utterances he made with a lot of fillers such as "**eeh**" and the ellipsis aspect. This was a sign of word-finding difficulty. Look at the following sentences, for instance,

R: *Hii shule yenu inaitwaje?*

15) S: *Hill Special…eeh…akuru Hills pecial cool.*

R: *Mmefuga wanyama wapi?*

16) S: *Gombe, kondoo, mbuzi,…hawa… nyama wa situni.. hawa.*

From R.K.'s response, he omitted functional elements. There was final **consonant deletion** in the word 'Hill' which should have been produced as 'Hills'. The morpheme**'s'** in word final position inflecting for number (plural) was omitted. R.K. however was not consistent in production of the word 'Hills' because in some instances, he produced it with the's'. In the second example, the functional element and the auxiliary verb **'ni'** for **'is'** was omitted rendering the response incomprehensible.

The number inflection morpheme **'wa'** in the word *wanyama* produced as *nyama* was omitted. This was not the case in J.M.'s productions. From the extracts above, **echolalia** was another phenomenon that disturbed the correct arrangement of words in the sentences. There were instances of repeated words in R.K's response that rendered the sentences ungrammatical.

3.6.2 Clipping and Blending

The two morphological errors were observed in the following sentences and by both subjects in a sentence repetition exercise.

a) J.M's repetition

R: *Baba yangu alichinja mbuzi*

17) S: *Babangu nachinja mbusi*

R: *Mama yangu ni mkali*

18) S: *Mamangu kali*

b) R.K's repetition

R: *Baba yangu alichinja mbuzi mnono*

19) S: *Babangu chinja mbuzi nono*

R: *Mama yangu ni mkali*

20) S: *Mamangu ni kali*

The words *babangu* and *mamangu* had a morphological clipping error. The words were shortened by omitting the morpheme **ya** in the word *baba yangu* and *mama yangu* respectively. The words were blended into one word although this did not alter their intended meaning.

CHAPTER FOUR: GENERAL CONCLUSION

This chapter presents the findings of the study in relation to the stated objectives and the research questions that the study sought to answer. The study focused on language impairment in two DS subjects from Nakuru. It sought to identify and analyze the subjects' impaired phonological and morphological features. It aimed at detecting the patterns of the impairment in their speech, whether it was their spontaneous speech, pictorials or repetition exercises. From the data, it was evident that DS has dramatic impact on speech and language.

The objectives of the study were: to identify and analyze the types of phonological and morphological impairments in the subjects' speech. The first hypothesis that in relation to phonological impairment, substitution errors would be the most frequent in the subjects' speech was confirmed as this scored the highest percentage of 58.8% from the omission and addition errors that were relatively few. In the area of phonology, the study confirmed that J.M and R.K had difficulty in phonological processes whereby errors of omission, substitution and addition were grammatically distinctive in their production of words.

Morphological errors of omission and substitution were evident from the data. The study identified the various impaired features in the speech of J.M and R.K. They produced sentences of which some were telegraphic while others lacked the idea of person and number. . Functional categories like person and number are blended into one morpheme in the inflectional categories representing an overt subject in Kiswahili verbal

form. The inflections of person and number were to a larger extent omitted from the verbal form. This confirmed the second hypothesis that omission errors will affect more agreement-marking morphemes than tense marking ones. In the person and number marking morphemes, J.M made 86.7% omission errors while R.K made 93.3% of the same. This was not the case with the tense marking morphemes. J.M made 13% omission errors against R.K's 26.7%.

A vital morphological impairment noted from the subjects was in the tense system. Inflections for tense were omitted while some were substituted with '**me'** for the present perfect tense and '**ta'** for the future tense. Tense in Kiswahili is marked morphologically. J.M and R.K had hectic time in manipulation of grammatical morphemes; hence the placement of events in time in relation to the time of speaking was highly impaired as evidenced by the data. The pattern of movement was from past to present perfect and to the progressive aspect. It was expected that they have a similar pattern but that was not the case. It was noted that most tense inflections were intact except their choice of usage that was wrong.

Word formation and word finding difficulty contributed a great deal to poor arrangement of words in sentences. Due to this, some sentences got their meaning distorted from the intended one. A number of short sentences was evident and this lead to the production of non-words occasionally, this could be attributed to articulation problems. It is almost evident that the data collected from the subjects confirm what other

researchers in other languages have already observed that inflectional morphology is the area of challenge to DS sufferers.

Self correction was a trend seen in subject R.K. In many instances, he corrected himself to produce the correct form only to change it again to another different wrong form. An omission in word initial position was a pattern that was noted in both subjects. Due to many years of impairment of the subjects and Lenneberg's critical period hypothesis, it was not possible to ascertain a change in their utterances although I paid them a visit two times.

Morphological impairment in both subjects formed a kind of pattern that omissions were made in word initial positions. A few words like *silolaa*$_{38,}$ *kuliima*$_{46,}$ *angaree*$_{46,}$ *napikaa*$_{63,}$ *karaamu*$_{73}$**,** *godooro*$_{81,}$ and *seboraa*$_{91}$ had **vowel** impairment by **lengthening** the vowels in word medial and final positions. Observations made shows that the effect of DS on language is so immense that even taking a child with DS to school do not shape the trend the impairment of language has taken. This is evident from the 36% and 37.5% in J.M's omission errors on table 2 and 3 respectively against R.K's 42.1% and 40% omission errors on table 4 and 5 respectively. This conclusion is arrived at from the fact that R.K attends school whereas J.M does not.

The study, therefore, recommends that more studies be carried in other aspects of language not studied e.g. Syntax, discourse features, semantics, lexical and pragmatics as the two subjects had limited vocabulary and less use of appropriate interaction norms.

This will help determine their impairment since this particular study majored on two aspects: Phonology and Morphology. More importantly, studies should as well be carried in other languages so as to be able to identify the possible areas of linguistic difficulty among the DS subjects.

It will be of great importance to the teachers, caregivers and parents of the children in question as they would have identified areas which present most difficulty to the subjects hence help them easily overcome the deficits of the condition. According to my observation, the study deserved a longitudinal period. Therefore, future researchers should be accorded enough time to conduct their studies, to collect data from large samples which would in essence produce a more rich data base for a deeper and comprehensive analysis of the data.

The study, again, recommends that more research be done to determine why the DS subjects produced correct utterances in one instance and completely wrong ones in another, yet, the environment was the same. These inconsistencies need to be explained by future researchers in this area. More still, R.K self- corrected himself in his utterances, yet in the process of correction, he corrected for a wrong utterance. I therefore, recommend that, a future study be able to explain this uncertainty. J.M although older in age, did not realize the mistake made.

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APPENDICES

APPENDIX I: SUBJECT J.M'S SPEECH SAMPLE

Time-1 Interview

Oral Production

(R: - RESEARCHER)

(S: - SUBJECT)

1. R: Unaitwa nani?

   S: Jose

2. R: Unaishi Wapi?

   S: Nyamunyi… Randoo

3. R: Ulikuja hapa lini?

   S: Mekuja samani

4. R: Umepona?

   S: Eeh… mepoma

5. R: Unaishi na nani?

   S: Baba angaree

6. R: Baba Wangare ameenda wapi?

   S: Naenda Kasi

7. R: Unaendeleaje?

   S: Akuna mbaya

8. R: Unapenda kucheza mchezo gani?

   S: K.V… pira

9. R: Nikimwabia daktari uende nyumbani, utafurahi?

   S: … Mefurahi…. uuh

10. R: Ungependa nikuletee nini?

   S: Kate

11. R: Nini kingine?

   S: Akuna titu

12. R: Unapenda kuimba?

   S: Eeh

13. R: Niimbie basi

   S: Bebi jesa… I rafuu… a saviour

14. R: Unaenda kanisa gani?

   S: Katho

15. R: Ni nani anawafundisha kanisani?

   S: Faga

16. R: Ulisema unamjua mama Edu?

   S: Uuh

17. R: Ako wapi?

   S: Hayuko… mekufaa

18. R: Wewe unapenda sigara?

   S: Uhu… nakokanga

19. R: Hukukatazwa na daktari?

   S: Ni Suragoo

20. R: Na hii imebeba T.V inaitwaje?

S: Eeeh… mi… eeh… nafungua naitwa lango…

Droo… kabaati

21. R: Ni nini hii iko hapa juu?

S: Hata hajui hiyo

R: Wangare alienda shule?

22. S: Uuh… naende sule

Table 1: Subjects J.M's and R.K.'s performance on a word repetition exercise.

Time – 1 Interview

No.	**The word read**	**J.M's repetition**	**R.K.'s repetition**
23.	Mnyenyekevu	Kekevu	Nyekevu
24.	Nairobi	Orobi	Arobi
25.	Kalamu	Karamu	C
26.	Shule	Sule	C
27.	Hospitali	Sitali	Spitali
28.	Kitabu	Ng'atabu	Itabu
29.	Mguu	Uguu	Buguu
30.	Mbuzi	Mbusi	C
31.	Darasa	Karasa	Tarasa
32.	Jicho	Chicho	Chicho

33.	Mpira	Pira	Ampira
34.	Bakuri	kukuri	Bakuli
35.	Chakula	Shakura	Jakula
36.	Daktari	Datari	Dagitari
37.	Mkono	Nokono	Kono
38.	Flora	Rorara	Silolaa
39.	Wengine	Mengine	Wingine
40.	Vua	Nvua	Nvua
41.	Polisi	Palisi	C
42.	Ugali	Wali	Gali
43.	Karatasi	Kagasi	Katasi
44.	Kitambaa	Tambaa	Tambaa
45.	Ongea	Kongea	C
46.	Kulima	Nadulima	Kuliima

Picture naming

Time-2 Interview

J.M was shown pictures of familiar things from the immediate environment and asked to name them. This is how he named them:

Table 2: Subject J.M's performance in a picture naming exercise

No.	Name of picture	J.M's picture naming
47.	Kikombe	Kokombe
48.	Kiti	Titi
49.	Baiskeli	Askeli
50.	Kitabu	Bung'u
51.	Ufagio	Kafio
52.	Mti	Niti
53.	Panga	Kisu
54.	Kufuli	Funguo
55.	Mayai	Ng'ayai
56.	Wangare	Angaree
57.	Mtungi	Tungi
58.	Nyumba	Umba
59.	Maua	Naua
60.	Mlango	Lango
61.	Sabuni	Sapuni
62.	Embe	Wembe

63. a) Mama Wangare anapika

    b) Mama angare napika

64. a) Leo tutakula mkate

b) Leo nilikura kate

65. a) Daktari mgeni amekuja

b) Datari kugeni nakuja

66. a) Panya ametorokea shimoni

b) Panya nakoroka sifoni

67. a) Baba yangu alichinja mbuzi

b) Babangu nachinja mbusi

68. a) Shule yetu ina uwanja mkubwa

b) Sule yetu kubwa

69. a) Nilienda kucheza kandanda

b) Naenda chesa tandanda

70. a) Kitanda chetu ni kikubwa

b) Tanda yetu ng'ikubwa… tanda kubwa

71. a) Zahanati imefunguliwa

b) …… nafunguliwa

72. a) Mtoto mdogo

b) Toto kodogo

73. a) Ninaandikia kalamu

b) Nandika kara… karamu

74. a) Nyumba yetu ni kubwa

b) Numba yetu kubwa

75. a) Mgeni mzuri

b) Geni misuri

76. a) Ameenda kuoga

    b) Naenda enda oga

77. a) Mama yangu ni mkali

    b) Mamangu kali

78. a) Watoto wanacheza mpira

    b) Toto nacheza pira

79. a) Yeye amekufa

    b) Yeye mekufa

80. a) Ninapenda kucheza

    b) Napenda nichesa

81. a) Amebeba godoro

    b) …..beba godooro

APPENDIX II: SUBJECT R.K'S SPEECH SAMPLE

Time-1 Interview

Oral Production

The following were R.K's responses in an interactive session.

82. R: Unaitwa nani?

    S: Rona ipruuto

83. R: Kwenu ni wapi?

    S: Tambarua

84. R: Mmepanda mimea gani kwenu?

    S: Cabbage, pinach, arrot, na tunguu na nyanya

85. R: Mmefuga wanyama wapi?

    S: Gombe, kondoo, mbuzi… hawa… nyama wa situni hawa

86. R: Hii shule yenu inaitwaje

    S: Hill special… eeh… akuru hills pecial cool

87. R: Mwalimu wenu anaitwa nani?

    S: Silolaa

88. R: Wewe ni wa kabila gani?

    S: Mi… kale mkalenjin Tugen

89. R: Unajua kuongea Tugen

    S: Mi ijui, mi mkenya

90. R: Unanijua?

    S: Ahaa

91. R: Mimi ninaitwa Zipporah

S: Ooh Seboraa… khai

92. R: Umewahi sikia jina kama hilo?

S: Habana misasikia hiyo… jina poa!

93. R: Mimi ni mwalimu

S: Wee mwalimu?

94. R: Nilikwambia kesho nitakuja kuwafunza, unataka nije niwafunze nini?

S: Kiswahili, na wa English, Sayan, Soci tudies na Sairii… neno la mungu.

95. R: Unapenda chakula gani?

S: Chele, maragwe, nyama, kimiiten… ugali, fiazi.

96. R: Ulikuja hapa mwaka gani?

S: 07… aaha 2007… aaha two thousand seven

97. R: Hapa shule mnapatiwa chakula kizuri?

S: Eeeh… chele, maragwe, ugali, na mboga… sukuma, chioni kurara… alafu asubuhi uchi, saa ine chai, chele na saa lunch… ngele ngele nalia

98. R: Huko kwenye mnalala kunaitwaje?

S: Naitwa domu… domu

99. R: Kuna nini kwa domu?

S: Aranket… hata iko atress

100. R: Hii ni nini?

S: Hata hajui hiyo?

101. R: Hii ni fish, imeingia kwa bahari

S: Hapaari?

102. R: Nisomee hizi picha

S: Circle, oval, square, actango, traango, star.

103. R: Hapa shule mnachapwa na walimu?

S: Eeh

104. R: Walimu wakikuchapa utafanya nini?

S: Naruka

105. R: Unapenda mchezo gani?

S: Ampira… football

106. R: Huyu anaitwa nani?

S: Huyu? Boy... naitwa Karanja

107. R: Na yule?

S: Chelang'at, hizo girl… naitwa Chelang'at

108. S: Simu nzuri

R: Ahsante

109. R: Simu yangu nikikupatia, utapigia nani?

S: Tapigia watu

110. R: Unajua kuimba

S: Eeeh

111. R: Niimbie basi

S: Damu ya Yesu wiyomwagiika, nawesa mambo yotee x2

Ni gwegwe, ni gwegwe bwana x2

Kama siyo gwegwe, akuwa gwapi mimi?

Unachawa na leema, wa leema tele

Kama siyo gwegwe oo nakuwa wapi mimi?

Moyo wangu nakutamani baaba x2

Nimekucha kama mtoto baaba

Kasi yangu najililia

Sisi wana wako kuwakuwa budu

112. R: Unapenda kuona vipindi?

S: Eeh… tigizen, T.V.C

113. R: Leo ni tarehe ngapi?

S: ……. Twenty six

114. R: Na kesho?

S: Twenty seven

115. R: Na kesho kutwa?

S: Twenty eight tu… enda home

116. R: Mnaenda home kufanya nini?

S: Enda gura… piga gura

117. R: Wewe utampigia nani?

S: Ruto

118. R: Ruto anataka kuwa nini?

S: Raisi

119. R: Wa wapi?

S: Wa kwetu

120. R: Ruto ako chama gani?

S: RP… uru Kanyaatta Wagai…. Raisi esident ata Alonzo Anzioka, Mwai Kibagi.

Time – 2 Interview

R.K.'s performance on a sentence repetition exercise.

121. a) Rafiki amekuja

b) Rafiki nakuja

122. a) Mama anapika

c) Mama napika

123. a) Ameenda kuoga

b) naenda kuoga

124. a) Hiki ni kikapu changu

b) Hiki kapu yangu

125. a) Jina langu ni Kpruto

b) Jina langu naitwa ipruuto… Jina langu … ni Rona ipruuto.

126. a) Jane hakupeleka barua

b) Jane napeleka barua

127. a) Baba yangu alichinja mbuzi mnono

b) Babangu chinja mbuzi nono

128. a) Mama yangu ni mkali

b) Mamangu ni kali

129. a) Watoto wanacheza mpira

b) Toto cheza pira

130. a) Mimi ninampenda Maria

b) Mimi napenda Maria

131. a) Amebeba godoro

b) Beba kodooro

132. a) Mwangi ni rafiki yangu

b) Mwangi rafiki yangu

133. a) Nimekunywa maji

b) Anakunywa maji

134. a) Anavua samaki

b) Navua samaki

Table 3: Subject R.K's spontaneous speech

No.	**Target word**	**R.K's utterance**
135.	Timboroa	Tambarua
136.	Viazi	Fiazi
137.	Usingizi	Singizi
138.	Kapsoit	Kasoit
139.	Kulala	Kurara
140.	Ng'ombe	Gombe
141.	Dawa	Ndawa
142.	Hapana	Habana
143.	Zipporah	Seboraa
144.	Kura	Gura

145.	Embe	Aembe
146.	Science	Sayan
147.	Iliyomwagika	Wiyomwaagika
148.	Uhuru	Huru
149.	Kibaki	Kibagi
150.	Naweza	nawesa
151.	Kengele	Ngelengele
152.	Citizen	Tigizen
153.	K.B.C	T.V.C
154.	Msituni	Situni
155.	Neema	Leema
156.	Sio	Siyo
157.	Mchele	Chele
158.	Jioni	Chioni