

**A SYNTACTIC INTERPRETATION OF AMBIGUOUS DHOLUO LONG DISTANCE
ANAPHORS**

BY

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DECLARATION

Declaration by the candidate

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DEDICATION

This work is dedicated to the ALMIGHTY GOD and my late father Jaduong' Wilson Wambia wuod Obilo, who only had a chance to attend school upto class 4, but valued education very much.

ABSTRACT

Anaphors refer to expressions that are not capable of independent reference or meaning and cannot be used deictically. The Binding theory (BT), a sub-theory of the Government and Binding (GB) theory states that Condition A requires that an anaphor should find an antecedent in a local domain, while Condition B requires that a pronominal should be free within the same clause. Long-distance anaphors (LDAs) are found outside the local domain, where they are ambiguous and therefore, difficult to interpret. This study undertook a research into Dholuo syntactic structure with a view to examining the conditions which result in the ambivalence of LDAs and how to attain their interpretation. The study was guided by the following objectives: first, to analyze the syntactic domains in which LDAs occur in Dholuo; second, to determine the syntactic domains in which LDAs are ambiguous in Dholuo; and finally, to discuss the strategies which aid in the unambiguous interpretation of Dholuo LDAs. Ambiguity distorts meaning. It is therefore in this regard that this study set out to find out more on how the ambiguous anaphors could be interpreted. The study was guided by the Government and Binding Theory (GB). The analysis employed four modules of the GB Theory: the Government theory, the Binding theory, the Control theory and the Case theory. The study employed an analytic study design whereby eighty (80) sentences were collected from ten native speakers of Dholuo. Purposive and snow ball sampling techniques were used in the study. The respondents were informed the purpose of the research so as to gain trust from the researcher. A standard questionnaire was also used for data collection. The collected data was analyzed using content analysis. It was established that LDAs in Dholuo occur in clauses embedded to the matrix clause. The clauses in which the LDAs occur in Dholuo included the non-finite clause, the subjunctive clause, the adjunct clause, the causative clause, the tensed clausal complement, the applicative clause, the small clause, the relative clause, the adverbial clause and the locative prepositional clause. The study however noted that it was in the same clauses that the LDAs are ambiguous. The strategies used for interpreting ambiguous LDAs in Dholuo included: obligatory co-reference, Control theory, subject-orientation, emphatic pronoun and R-expression. A successful completion of this study would make a significant contribution by providing new insights into the study of long-distance anaphor of other Nilotic languages. The data provided would be important for further linguistic inquiry into Dholuo and other African languages.

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LIST OF ABBREVIATIONS

COMP-Complementizer

CP-complementizer phrase

Det-determiner

DP-determiner phrase

EMPH- Emphatic

FOC-Focus

FUT- Future

FV-Final vowel

i-semantic index

INF-Infinite

INFL-Inflected component

IP-Inflectional phrase

j-semantic index

k-semantic index

LOC-Locative

LOG- Logophoric

MOD-Modal

N-noun

NEG-Negative

NOM-Nominative

PERF- Perfect

PL-Plural

POSS-Possessive

PP-Prepositional phrase

PREP- Preposition

PRES- Present

PRO-an empty category which is both a pronominal and an anaphor

pro-empty subject NP

PROG-Progressive aspect

PST- Past

R-Expression-A lexical NP

SELF-Reflexive

1SG- 1st Person singular

2SG- 2nd Person singular

3SG- 3rd Person singular

SPEC-Specifier

V-verb

VP-verb phrase

DEFINITION OF TERMS

Adjunct	indicates the circumstances of an action, event or situation.
Adverbial clause	a dependent clause which functions as an adverb.
Anaphor	a word or a phrase that refers back to an earlier word or phrase.
Antecedent	a word or phrase to which a pronoun refers.
Applicatives	event modifiers involving the instrumental and benefactive arguments.
Causative	a subject causes someone or something else to do or be something.
Emphatics	pronouns used in expressions for emphasis
Governing category	an element referring to or controlling another within the same clause.
Local domain	an antecedent and an anaphor that are in the same clause.
Locative preposition	specifies the location in time and space of the subject.
Logophor	an anaphor that is bound outside the local domain.
Long-distance anaphor	an anaphor that is bound outside the local domain.
Non-finite clause	a clause based on infinitive/participle and does not show particular tense.
Proxy reading	anaphor/antecedent relation where the two do not refer to actual object.
R-expression	refers to a name that must be free.
Relative clause	a clause introduced by a relative pronoun.
Small clause	a clause which lacks an overt verb.
Split antecedent	separate arguments.
Subjunctive clause	sentences that contain verbs in the subjunctive mood.
Tensed clausal complement	clauses with finite verbs which inflect for tense.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

This chapter introduces the study by highlighting information regarding background to the study, Dholuo syntax and the concept of long-distance anaphora, (henceforth LDA) in Dholuo. The chapter also includes the statement of the problem, research questions, research objectives, the scope, justification and significance of the study and the theoretical framework adopted for the study.

Dholuo, the language under investigation, is spoken by the Luo, an ethnic group found in Kenya, Eastern Uganda and Northern Tanzania (Ogot, 1967). This study is confined to the variety of Dholuo spoken in Kenya. The Luo of Kenya are mostly located on the Eastern shores of Lake Victoria (Ochieng', 1975). They started settling in Nyanza area of Kenya between 1500 and 1550 AD (Cohen, 1974). They are part of that group of the Nilotes which is collectively referred to as the Luo, whose cradleland historians and linguists have located around Wau, along the rivers Sue and Jur in the open grassland plains of Bahr-el-ghazal province of Sudan (Ochieng', 1985). According to the 2009 Kenya Population and Housing Census report, the Dholuo speaking population is slightly over 4 million people, the fourth largest language group after the Kikuyu, Luhya and the Kalenjin.

Stafford (1967) observes that there are two primary regional Dholuo dialects: The Trans-Yala Luo, spoken in Ugenya, Alego, Yimbo and Gem. The other variety is the South Nyanza dialect spoken in what is now called Migori and Homabay Counties and parts of Central Nyanza which are not part of the Trans-Yala area (Adhiambo, 1990). The two dialects are mutually intelligible,

though quite distinct phonologically and lexically, hence one can easily tell which dialectal zone a speaker comes from by the way he speaks (Okoth-Okombo, 1997). The Trans-Yala variety is generally avoided in publications and the bulk of the literature is thus found written in the South Nyanza dialect, including the Bible and readers for schools (Okoth-Okombo, 1997).

1.2 Dholuo Syntax

Omondi (1982) does an analysis of the major syntactic structures of Dholuo. The study analyses the major units of syntax using the standard theory of Generative Transformational Grammar. The study tries to describe the major syntactic structures of Dholuo and gives information on Dholuo phonology and categorizes the formatives of the language and their morphological realizations. The study also does a survey of the main syntactic structures and provides the base rules. The study examines negation, questions, imperatives and emphasis. The other processes presented also include conjunction, complementation, relativisation, pronominalisation and the possessives. Transformational rules are also discussed.

A detailed account is undertaken by Okoth-Okombo (1997) on grammatical categories and functions in Dholuo. The aim of the study is informed by the categories and functions which form the constituents ordering regularities. The study further examines the nature of Dholuo phrases and the major clause patterns of Dholuo syntactic constituency, a property of constructions, higher in order than words. The aim of the study is to elaborately examine how far one can account for Dholuo structural properties using Functional Grammar theory. Okoth-Okombo (1997) observes that Dholuo makes extensive use of pragmatic function assignment through combination, involving pronoun-pronoun or noun-pronoun sequences. This results in the

contribution of the interaction between Themes and Topics. A number of preverbal occurrences of non-alpha constituents are as a result of Topic and Focus assignment.

The Dholuo word order is predominantly S-V-O (subject-verb-object) (Payne, 2002). This means that Dholuo has a relatively free word order where the structures in which the grammatical subject is mentioned first in the sentence followed by the verb and finally the object. Ochola (2006) also asserts that Dholuo is different from English that has more analytic or isolating structures, meaning that most clauses consist of a series of words each composed of a single morpheme. In her analysis of the grammatical structure of Dholuo, Ochola (2006) examines the Dholuo Verb Phrase (VP). Sentence (1) is an example of Dholuo sentence.

1. *Maureen dhi chiro*

(Ochola, 2006: 208).

It is noted that the subject noun Maureen is followed immediately by the verb *dhi* ‘go’. This lacks a tense marker for present tense, nor does it have the pronominal subject prefix *o-* for agreement with Maureen. In Dholuo, present tense is not overtly marked. Dholuo tenses are followed by a pronominal subject for agreement suffixes such as *o-* ‘he’/ ‘she’/ ‘it’ on the verb except in present tense as given in (2).

2. *Maureen n-o-dhi chiro*

(Ochola, 2006: 212).

In sentence (2), *-o-* is co-indexed with the preceding NP, Maureen, its maximal projection. The *-o-* therefore looks outside its immediate maximal projection for information about its form-hence referred to as *late outsider system morpheme* (Meyer-Scotton, 2002). Ochola (2006) further notes that past tense in Dholuo is marked by the prefix *ne-* before a pronominal subject.

However, in Dholuo VP, *-e-* is dropped if the past tense marker *ne-* is followed by a pronominal subject marker that begins with a vowel as noted in sentence (3).

3. *Maureen n-o-dhi chiro*

(Ochola, 2006: 212).

Ochola (2006) analyses Dholuo sentence structures and further examines the Dholuo VP. Ochola (2006) examines the pronominal subject prefix *o-* (he, she, it) and how it agrees with the subject noun in Dholuo sentence structures. The present study is interested in examining the pronominal, in this case referring to it as an anaphor bound by a subject antecedent. The study also examines the ambiguity caused by the anaphor referring to more than one subject antecedent.

The present research undertakes a study on Dholuo long distance anaphor. Huddleston and Pullum (2002) define anaphora as the relation between an anaphor and an antecedent, where the interpretation of the anaphor is determined via that of the antecedent. Gardelle (2012), states that anaphora is typically endophoric-it has an antecedent which is a segment of text. It is therefore opposed to deixis, in which an expression also gets its interpretation indirectly, but typically through a situational element indicated, for example by a gesture. The study further points out that anaphoric relations might be of various types. These include coreferentiality, association, resumption and many others. They involve nominal, verbal or adverbial elements as illustrated in the sentences that follow.

4. Bruce smiled to himself as he walked along Forth Street. (Nominal anaphora)
5. Please complete this form in full. Failure to do so will result in your application to join the scheme being rejected. (Verbal anaphora)

6. I put the keys in the top drawer; they should still be there. (Adverbial anaphora)

(Gardelle, 2012: 25)

Gardelle (2012) gives an overview of the meanings that anaphora, anaphor and antecedent acquire in various theoretical frameworks, especially in the noun phrase domain. The aim of the study is to make out the theoretical implications of such choices for a better understanding, of the mechanism at work in anaphora processing. The study examines three theoretical approaches: Binding theory, textual anaphora and the cognitive-pragmatic definition. The term anaphor is used to refer to any expression that is not capable of independent reference and can also not be used deictically (Potsdam, 1995). This definition is meant for pronouns bearing the feature [+anaphor] according to the standard Binding theory (Chomsky, 1981). Condition A of the Binding theory requires that [+anaphor] elements should find an antecedent in a local domain. The local domain in this case refers to an antecedent and an anaphor being in the same clause (Chomsky, 1981). On the other hand, condition B requires that a [+pronominal] element is free in the binding domain (Reuland and Koster, 1991). Long-distance anaphors (LDAs) are therefore anaphors found outside the local domain, violating Principle A of the Binding theory. In fact, LDAs are often prohibited from appearing in the local domain (Reinhart & Reuland, 1993). LDAs have been studied in many languages, examples being Eastern Asian languages such as Japanese and Mandarin Chinese as well as Icelandic, Norwegian and European languages such as Italian and Latin (Koster and Reuland, 1991). LDAs have also been studied in African languages such as Yoruba of Nigeria (Lawal, 2006) and Aghem language of Cameroon (Butler, 2009) among others.

Reuland and Koster (1991) undertake an overview of LDAs and state that LDAs are bound by their antecedents outside the local domain. It is noted in the overview that the subject c-commands the anaphor. C-command in this case refers to the subject coming before the anaphor in a sentence (Reuland and Koster, 1991). Solberg (2011) also discusses the distribution of LDAs in Latin and posits that the anaphor *se* is long-distance bound and can occur in *Accusativus-cum-infinitivo* (AcI) complement (Infinitive clauses with accusative subject). The anaphor can also be found in the subjunctive complement clauses of reported speech or thought, in the adjunct clauses with the complementizer *quod* and in the indicative clauses (Solberg, 2011). According to Solberg (2011), in clauses embedded within indirect speech, an LDA can possibly occur in an adjoined subjunctive subordinate clause depending on an AcI or a subjunctive complement clause of indirect speech. The study is relevant to the present study although the present study is interested in the syntactic domains in which LDAs occur in Dholuo.

Butler (2009) examines logophoricity with special focus on Aghem, a West African Bantu language spoken in the North West Province of Cameroon, Africa. It is noted that the term logophor has been used to refer to two different cases in the literature. Firstly, Butler (2009) states that Hagege (1974) refers to them as special pronouns that take “the author of discourse” as antecedents. Secondly, according to Clement (1975) and Reuland (2006), logophors are anaphors that are bound outside the local domain. The term logophor can therefore be used interchangeably with LDA. Butler (2009) holds that West African logophors normally occur outside the local domain, in clauses embedded under verbs of saying, thinking, knowing, perceiving or showing emotion. Aghem language is one such example. It is mentioned that a

logophor embedded under a clause with a verb of saying co-refers with the subject of the matrix clause as illustrated in (7).

7. *Nnsin_i dzéényia é_i/_j* bvú nu.*

Nsen say that LOG fall FOC

‘Nsen said that she (herself) fell.’

(Butler, 2009:2)

Butler (2009) further takes note of the fact that in Aghem language, when the logophor (LDA) is embedded under a verb like ‘leaving’ then the logophor can optionally establish co-reference or disjoint reference with the subject of the matrix clause. Sentence (8) is an example showing the logophor *e* being disjoint in reference.

8. *Abang zigha ndugho mo e_i/_j gbin zi*

Abang leave house PST LOG morning eat

‘Abang_i left the house when he_i/_j ate breakfast.’

The study by Butler (2009) is relevant to the present study which also examines the domains where LDAs are ambiguous in Dholuo.

Suleh (2013) does a morphosyntactic analysis of ambiguity of mood in Dholuo employing the Minimalist Program approach (Chomsky, 1995). The study examines the content of the verb phrase (VP) and the role of tone in the expression of mood in Dholuo. The study also finds out how mood is expressed and how ambiguity is resolved in Dholuo. Additionally, the study also examines the modal structure of the language and how it can be explained within the Minimalist Program, regarding feature checking. Suleh (2013) concludes that the Minimalist Program by Chomsky (1995) is adequate in accounting for data on mood and ambiguity in Dholuo, although

modifications have to be made to cater for the feature checking of Dholuo mood and ambiguity in terms of creation of some heads. Although the study conducted by Suleh (2013) discusses ambiguity, it differs from the present study in that it discusses ambiguity of mood in Dholuo whereas the present study is concerned with the strategies of interpretation of ambiguous anaphors done using the Government and Binding (GB) theory by Chomsky (1981).

Madara (1989) analyzes pronominals and anaphors in Dholuo using Government and Binding approach. In the study, Madara tests the validity and universality of the three Binding conditions as proposed by Chomsky (1981), using Dholuo data. The study also tests if the theory provides a descriptively adequate account of semantic interpretations of Dholuo pronominals and anaphors. The study is further concerned with the elucidation of the relationship between semantics and syntax and testing the validity and universality of the three Binding conditions, using one module, the Binding theory. Semantics is a concept of meaning, hence ambiguity distorts meaning. The present study is interested in the interpretation of ambiguous LDAs in Dholuo using four sub-theories (Government, Binding, Control, Case theories) of the GB theory by Chomsky (1981).

1.3 Statement of the Problem

The interpretation of anaphors in Dholuo is problematic outside their binding domain. The binding principle A of the Binding sub-theory of Government and Binding states that an anaphor and its antecedent must be clause-mates, while principle B states that a pronominal must be free within the clause. Although the binding principles are designed to account for the distribution and interpretation of all types of anaphors such as pronouns and reflexives, some, for example

the long-distance anaphors, do not obey these principles. These forms require alternative explanations because they are ambiguous. This study seeks to examine such elements in Dholuo with a view to determining the conditions under which their ambivalence results and how their interpretation can be attained.

1.4 Research Questions

This study is guided by the following questions:

- i) In what syntactic domains do long-distance anaphors occur in Dholuo?
- ii) In what syntactic domains are long-distance anaphors ambiguous in Dholuo?
- iii) Which strategies aid in the unambiguous interpretation of Dholuo long-distance anaphors?

1.5 Research Objectives

The study sets out to:

- i) analyze the syntactic domains in which long-distance anaphors occur in Dholuo
- ii) determine the syntactic domains in which long-distance anaphors are ambiguous in Dholuo
- iii) discuss the strategies which aid in the unambiguous interpretation of Dholuo long-distance anaphors.

1.6 Scope of the Study

The study is limited to the syntactic analysis of Dholuo long-distance anaphors. There is specific analysis of ambiguous long-distance anaphors and the examination of the domains where they are realized in Dholuo constructions, illustrating conditions under which their interpretations are ambiguous. The study is undertaken using four modules of the Government and Binding (GB)

theory, which are, the Government theory, the Binding theory and the Control theory and Case theory. Government theory is used to explain how heads of lexical categories govern anaphors which are outside the minimal clauses. Binding theory is used to explain the binding of anaphors outside the minimal clause, Control theory is used in the interpretation of ambiguous LDAs in Dholuo expressions whereas Case theory is used to show how arguments are case-marked.

1.7 Justification and Significance of the Study

According to Nurse and Hein (2000), many African languages have not been exhaustively studied. Dholuo is among the African languages and the study sought to examine strategies that interpret ambiguous anaphors. A successful completion of this study would make a significant contribution by providing new insights into the study of long-distance anaphor of other Nilotic languages. The data provided would be important for further linguistic inquiry into Dholuo and other African languages.

1.8 Theoretical Framework

Chomsky's (1981) Government and Binding (GB) theory is used in this study. According to Epstein (1991), GB as a theory of syntax was originally presented in Chomsky (1981), and further elaborated in Chomsky (1982, 1986). Haegeman (1994) also posits that the GB theory was developed from earlier versions of generative grammar, initiated in Chomsky, (1981).

The theory is a modular one consisting of sub-theories (Eptsein, 1991). The sub-theories include: the X^I theory, Government theory, Binding theory, Control theory, Bounding theory, Case theory, Theta theory and Empty Category Principle (ECP).

1.8.1 X-Bar-Theory

This is a principle of syntactic analysis adopted by Chomsky (1981) in objection to phrase structure (PS) syntax which was found to be inadequate for syntactic analysis on grounds that it was too restricted in the number of types of categories it permitted and that it was too constrained in the set of possible PS rules.

Chomsky (1981) posits that within an X-Bar theory of phrase structure, each lexical category X (noun, verb, adjective, preposition) is immediately dominated by a category X^I that is in turn, immediately dominated by a category X^{II} . X is referred to as the ‘head’ of the ‘projections’ X^I and X^{II} (Epstein, 1991). The X^I projection of the head X consists of X and its complements. The X^{II} projection, the ‘maximal projection’ of X, consists of X^I and the Specifier of X^I . This Schema defines the dominance relations of phrase structure representation (Chomsky, 1981).

The X-Bar theory is only used in the illustration of the distribution of anaphors and antecedents using tree diagrams in the theoretical framework section. In this study, different clauses in Dholuo are indicated using bracketing and not tree diagrams.

1.8.2 Government Theory

Government is a relation that holds between two categories within a phrase structure representation (Epstein, 1991). For a category A to govern a category B, three conditions, as stipulated in (8) must be met.

9. A governs B if and only if

i) A is a governor and

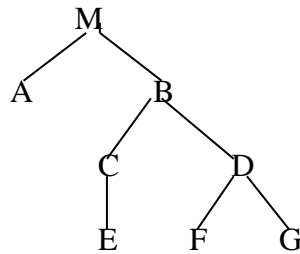
ii) A c-commands B and

iii) No barrier intervenes between A and B

Governors are heads of lexical categories such as Verbs, Nouns, Adverbs, and Prepositions.

Reinhart (1979) states that c-command is based on the relationship of dominance. A node dominates another node if it is above it in the tree, that is, if it is a parent or grandparent. Using the definition of dominance therefore, node A c-commands node B if and only if A does not dominate B, and B does not dominate A and the first branching node that dominates A dominates B. This abstract relationship can be captured in diagram (a).

a)



As shown in (a), M does not c-command any node because it dominates all other nodes.

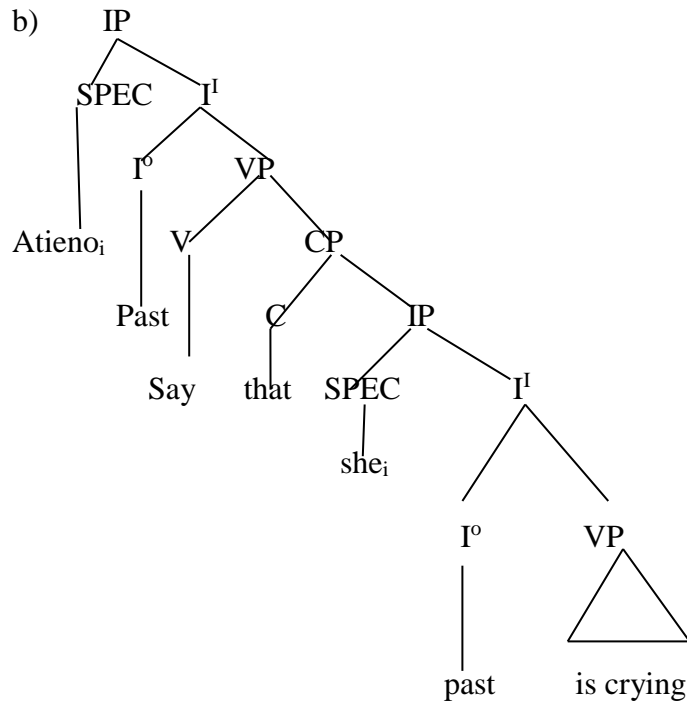
A asymmetrically c-commands C, D, E, F and G while B and A symmetrically c-command each other. This is exemplified in sentence (10):

10. Atieno_i no-wach-o ni o_i-yuak

Atieno PST-3SG-say-PROG that 3SG cry

‘Atieno_i said that she_i was crying’

This is illustrated in (b)



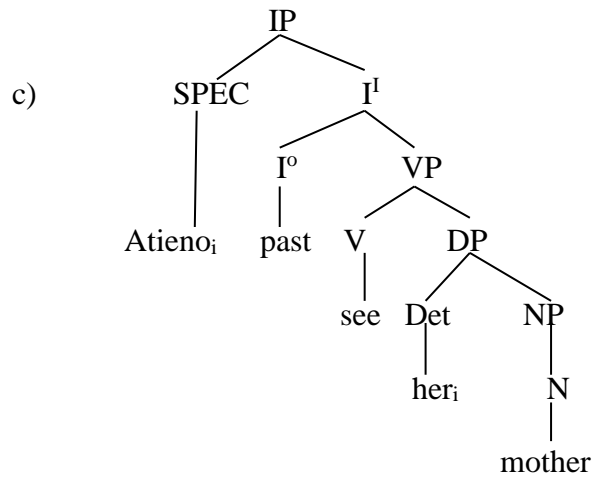
In sentence (10), *Atieno* c-commands *she*, thus *Atieno* governs *she*. *Atieno* therefore, is the governor while *she* becomes the governee.

In the analysis of data in this study, the Government theory is rrelevant and is used to explain how heads of lexical categories govern anaphors in Dholuo sentence structures.

1.8.3 Binding Theory

According to Chomsky (1981), in binding, an element α binds an element β if and only if α c-commands β and α and β corefer. Carnie (1999) also posits that it is a kind of co-indexation that occurs when one of the two determiner phrases (DPs) c-commands the other. This is exemplified in sentence (11) and represented as diagram (c).

11. Atieno_i saw her_i mother.



The SPEC *Atieno* c-commands *her* because the first parent of the SPEC, IP contains *her*. *Atieno* and *her* are also co-referential (they refer to the same person) therefore, *Atieno* binds *her*. *Atieno* is the binder while *her* is the bindee.

Binding is used along with particular binding principles namely A, B and C as postulated in Chomsky (1981):

Principle A: an anaphor must be bound in its binding domain.

Principle B: a pronoun must be free within its binding domain.

Principle C: an R-expression must be free.

In the Binding theory, DPs can refer to other DPs within the same sentence, and apparently, each type of DP has locations in the sentence where they can and cannot appear. They are also co-indexed with other DPs in the sentence (Schmelzer, 2007). Observing sentence 12 (a), (b) and (c), it shows the types of DPs in structural positions and grammatical indexing.

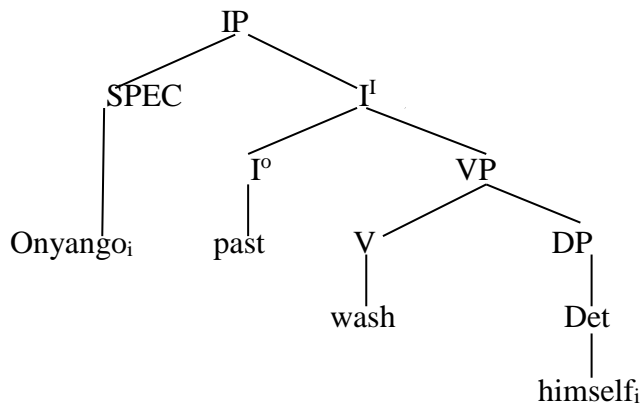
12. a) Anaphor: Onyango_i washed himself_i

b) Pronoun: Onyango_i washed him_i

c) R-expression: Awino_i washed Akinyi_j

According to Chomsky and Lasnik (1995), an anaphor must obey binding principle A. This means that an anaphor must be co-indexed with its c-commanding antecedent as illustrated in (d).

d)



Two elements in a structure are co-indexed if they have the same referential index (i) which shows the co-indexing (Schmelzer, 2007). In (9a) therefore, the DPs *Onyango* and *himself* are co-indexed. *Him* in (9b) is also free, since it does not refer to *Onyango*. In (9c), the R-expression *Akinyi* is free as its meaning is derived from an entity outside the context. That is why *Awino* has the referential index (i) and *Akinyi* has (j) meaning that they are different and therefore free. The explanation of co-indexation is also captured in Dholuo in sentence (13).

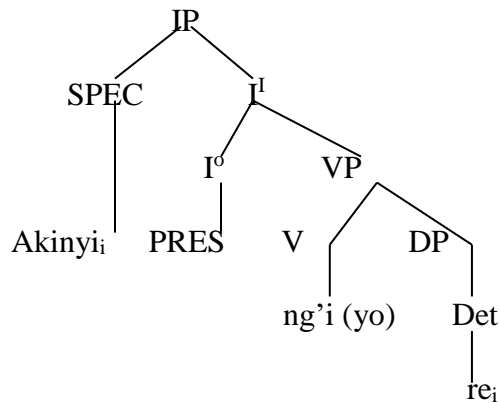
13. Akinyi_i ng'i-yo- re_i

Akinyi look-PROG- self

‘Akinyi_i is looking at herself_i’

In sentence (13), *Akinyi* and *-re* are co-indexed. The DP *Akinyi* also c-commands the reflexive *re*, which is thus bound by *Akinyi* as represented in diagram (e):

e)



In this example, *Akinyi* and *-re* are clausemates and they co-refer.

The Binding theory is significant and relevant to this study because it is employed to explain the binding of Dholuo anaphors outside the minimal clause.

1.8.4 Control Theory

Haegeman (1994) states that Control theory is a module of grammar that regulates the distribution and interpretation of non-overt DPs. The non-overt DPs are those which are syntactically active, therefore syntactically represented, but have no overt manifestation. They are represented as PRO. PRO is a category which is both a pronominal and an anaphor. It is subject to both principle A and B of the Binding theory, which impose on it contradicting requirements. Therefore, PRO is required to be in ungoverned category (Epstein, 1991). This is captured in sentence 14.

14. Akinyi_i ne mor[PRO_i ka o-wuoth-o gi chong-e]

Akinyi PST happy [PRO INF 3SG-walk-PROG with knee-PL-her]

* ‘Akinyi_i was happy [PRO_i to walk with her knees]

Akinyi and PRO obligatorily co-refer, and *Akinyi* is said to govern PRO. This shows that Control theory accounts for the interpretive properties of PRO.

In this study, Control theory is important in the interpretation of ambiguous LDAs in Dholuo expressions.

1.8.5 Bounding Theory

Chomsky (1981) states that Bounding theory imposes locality conditions on the syntactic application of movement rules. The most important tenet for the Bounding sub-theory is the subjacency Principle (Epstein, 1991). The subjacency principle is formulated as:

...X...[A...[B...Y...]]...X

In the configuration, no rule may apply to move a category from the position Y to position X or conversely, where A and B are bounding nodes (Epstein, 1991). The bounding nodes are NP and S in English. The Subjacency Principle accounts for ungrammatical sentences and its rationale is to prevent movement from being too long.

15. *Who do you believe the claim that John likes?

(Meaning: Who is the person X such that you believe the claim that John likesX?)

The surface structure of sentence (15) is in (16).

16. [_S Who_i [_S do you believe [_{NP} the claim that John likes t_i]]]

(Epstein, 1991: 9).

Epstein (1991) continues to state that in such a structure, a single application of syntactic movement extracts the NP “Who” from both NP and S, each of which are bounding nodes. The subjacency principle is violated as a result.

It is noted that in Bounding theory, the Subjacency principle accounts for ungrammaticality of sentences. The theory also deals with syntactic application of movement rules. These are not the concern of this study, and therefore, Bounding theory does not apply.

1.8.6 Case Theory

Case theory is a module of grammar that is concerned with the distribution of NPs. It is a product of Government and operates under Government theory (Chomsky, 1981). According to Haegeman (1994), Case theory accounts for some of the formal properties of overt NPs and integrates the traditional notion of Case into the grammar. Case filter, a principle which requires that each lexical NP be assigned a Case feature is central in the Case sub-theory (Epstein, 1991). Epstein (1991) further states that the assignment of Case features to lexical NPs is done in at least three ways. Firstly, the class of Case assigners are restricted to verbs, prepositions and INFL containing AGR(ement). According to Haegeman (1994), verbs and prepositions case-mark an NP which they govern. Secondly, Government plays a role within Case theory, in that a Case feature can be assigned only if the Case assigner governs the Case recipient which is the lexical NP. Thirdly, a Case assigner and a Case recipient must be adjacent to one another.

17. Otieno likes Odhiambo.

The verb 'likes' in (17) is a case assigner thereby assigning Otieno the nominative case whereas odhiambo is assigned the accusative case. This therefore satisfies the Case filter. The verb is also adjacent to the NP (Epstein, 1991). Only transitive verbs and prepositional phrases assign Case.

There is application of Case theory in this study since Government plays a role within Case theory. The two theories work together (Haegeman, 1994).

1.8.7 Theta Theory

The Principle of Theta theory constrains the co-occurrence of predicates and arguments in expressing the thematic relation between the two. Each predicate possesses one thematic role or theta role which the predicate assigns to an argument (Chomsky, 1981).

The Theta Principle states that each argument bears one and only one theta role and each theta role is assigned to one and only one argument (Epstein, 1991).

18. John solved the problem.

According to Epstein (1991), construction (18) satisfies the Theta criterion since each argument bears one and only one Theta role. ‘John’ is assigned only the subject Theta role. This means that it serves the function of being a subject. The argument, ‘the problem’ is assigned the object Theta role. In order for a governor (verb) to assign such a role, the object role, it must be within the governing category of the noun phrase Epstein (1991). Though Theta role assignment occurs under government, this study will be concerned with ambiguous anaphors and their interpretation and not assignment of thematic roles to arguments by different verbs. Theta theory therefore does not apply in this study.

1.8.8 The Empty Category Principle

The Empty Category Principle (ECP) accounts for distributional distinctions between traces, such as subject and object traces. An example of a subject-object asymmetry is illustrated in sentence (19) and (20).

19. *[_s Who_i [_s do you think [_s that [_s t_i left]]]]

20. [_s What_i [_s do you think [_s that [_s John bought t_i]]]]

According to Epstein (1991), in sentence (19), a subject trace is not allowed when a complementizer is present whereas an object trace can co-occur with a complementizer as shown

in (20). The ECP accounts for the contrast in (19) and (20) by requiring that all traces be properly governed. The object trace in (20) is properly governed because it is a complement to a lexical category, the verb ‘bought.’ The trace is therefore lexically properly governed and therefore satisfies the ECP. By contrast, the subject trace in (19) is not lexically properly governed. Haegeman (1994) states that a subject is not the complement of a lexical head, however, a subject trace can only be allowed in the absence of the complementizer ‘that’ as in example (21).

21. [_s Who_i [_s do you think [_s t_i [_s t_i left]]]]].

This study, however, does not consider using the ECP for analysis because the study is concerned with ambiguous LDAs and their interpretation and not distribution of trace which is the concern of ECP as stated by Haegeman (1994).

1.9 Conclusion

A brief background of the study has been considered in this chapter followed by the statement of the problem. The chapter also captures the research questions, the research objectives and the scope of the study. Justification of the study and an outline of the theoretical framework on which the study is based are also captured. Since the issues raised in the introductory section need to be scrutinized in detail, the next chapter therefore, reviews the existing literature on LDA.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The chapter is organized as follows. Section 2.2 highlights the literature on ambiguity and interpretation. Section 2.3 provides literature on the distribution of LDAs in sentences. Section 2.4 outlines the location of ambiguous anaphors in sentences whereas section section 2.6 finally reviews the literature on the interpretation of ambiguous LDAs.

2.2 Ambiguity and Interpretation

This section discusses the literature on ambiguity and interpretation which are also the concerns of this study.

2.2.1 Ambiguity

According to Crystal (1991), ambiguity is defined as a word or sentence that expresses more than one meaning. Malmkjaer and Anderson (1991) define ambiguity as a situation where a word or phrase has more than one interpretation or referent. The different referents of an ambiguous word are the same in some respects and to disambiguate a sentence is to perform an analysis that demonstrates the ambiguity. Crystal (1991), states that ambiguity exists in three forms. These are grammatical or structural ambiguity, transformational and lexical ambiguity. **Grammatical or structural ambiguity** refers to how words in the sentence are related. This therefore leads to the question about what modifies what or how the nodes containing the words are related. Crystal (1991) further notes that constituent structures can be alternatively assigned to constructions in phrase structure ambiguity. The arrangement of nodes and word classes are

essential in the explanation of structural properties constituting meaning. Sentence (22) is an example.

22. New houses and shops.

The sentence can be interpreted either as:

a) Both houses and shops are new.

Or

b) Only the houses are new.

(Crystal, 1991: 17)

In **transformational ambiguity**, alternative semantic representations are shown by relating ambiguous sentences to different structures (Crystal, 1991). It is noted that a multiple ambiguous sentence can have more than two structural interpretations.

23. Visiting speakers can be awful.

The sentence can either mean that

a) It is awful to visit speakers

or

b) Speakers who visit are awful.

(Crystal, 1991: 17)

The following is an example in Dholuo.

24. Nind-o e bat

Sleep-PROG on hand

‘To sleep on the hand.’

The sentence literally means to lie on one’s hand, however, idiomatically, it means one’s death.

Lexical ambiguity is identified as that which is due to the alternative meanings of an individual lexical item. This type of ambiguity is as a result of the same word having a set of different meanings (Crystal, 1991). Sentences (25) and (26) are illustrations of sentences from O’Grady et al. (1997) with words that are ambiguous.

25. He saw a bat.

The sentence either means that he saw a bat, the mammal or a piece of equipment used in baseball.

26. The man owns a club.

The sentence can either mean that the man owns a blunt object or weapon or the man owns a social organization. Crystal (1991) further notes that lexical ambiguity is because of the alternative meanings of an individual lexical item but not due to the structural or grammatical analysis of a sentence. It is based purely on meaning. For example:

27. I found the table fascinating.

(Crystal, 1991: 17)

The lexical item ‘table’ either refers to furniture or table of figures (Crystal, 1991).

Sentence (28) is an example in Dholuo.

28. Miy-a kado

Give-1SG soup/salt

‘Give me soup/salt’

(Suleh, 2013: 44)

Kado in Dholuo either means soup or salt. The implied meaning is drawn from context (Suleh, 2013). The present study is related to structural/grammatical ambiguity of LDAs. It is also tied to lexical/semantic ambiguity.

2.2.2 Interpretation

According to Hornstein (2005), ambiguity and interpretation are related. It is further noted that it becomes difficult to interpret some grammatical objects by the conceptual and intentional(C-I) characteristics or articulatory and perceptual (A-P) interface. It means that grammatical structures containing these might be suitable for these interfaces. The two conditions are those that correspond to the filtering effects of the interfaces and they impose bare output conditions that grammatical objects must give respect to (Hornstein, 2005). The bare output conditions correspond to the filtering effects of interfaces, examining how derivations can be ‘minimized’ and how full interpretation (FI) can be understood with least effort (Hornstein, 2005). Chomsky (1995) holds that there should be no superfluous symbols in a representation. The structures would not be formed in the right way unless the wayward objects were dispatched before the structures containing them gained interpretation at the interfaces. This literature is of value to the present study since the objective of the present study is to interpret ambiguous anaphors in Dholuo using different strategies.

2.3 The Syntactic Domains where LDAs occur in Sentences

Solberg (2011) discusses LDA in Latin and among the issues examined are the descriptions of where LDAs occur and what their antecedents are. Notably, Latin has two types of anaphors, the pronominal anaphor *se*, ‘himself/herself/itself/themselves,’ and the possessive determiner *suus*, ‘his/her/its.’ These anaphors do not agree with their antecedents in gender and number. They however, inflect for case and only take third person antecedents.

In his investigation, Solberg (2011) focuses on the distribution of LDAs in reported and non-reported contexts. According to Solberg (2011), the LDA in reported contexts, are the normal Latin LDAs, while those that are in non-reported contexts are referred to as special Latin LDAs. The focus in this literature is on *se*, however, the behaviour of *suus* is also considered where it is relevant. Solberg (2011) uses the Caesar sub-corpus of the PROIEL corpus. In the data from the PROIEL corpus, the anaphor *se* is long-distance bound in four different environments.

There are LDAs that occur in *Accusativus-cum-infinitivo* (AcI) complement (Infinitive clauses with accusative subject). In this environment, LDAs occur in AcI complements where they express reported speech or thought. The AcI subject is normally a reflexive when the accusative subject of such a clause is co-referential with the subject of the verb of speech or thought. This is illustrated in sentence (29).

27. [AcI De numero eorum omnia sei habere explorata] Remi dicebant

About number-abl PersPron-gen.pl everything-acc SE-acc have-pres.inf explore-Perf.Part.acc
Remi-nom say-imperf.ind

‘The Remi (a tribe) said that they had knowledge of everything concerning their number (the number of members of another tribe).’

(Solberg, 2011:16).

It is also posited by Solberg (2011) that there are also LDAs that are found in the subjunctive complements clauses of reported speech or thought. In this instance, the anaphor *se* cannot function as a subject in a subjunctive complement clause. This is because there is no nominative form of *se*. Sentence (30) is an example of a dative LDA in a complement clause with the complementizer *ut*.

30. Ubi_imagnopere orabant [Comp Cl ut sibi_i auxilium ferret].

‘The Ubii (a tribe) entreated with insistence that he should bring them help.’

(Solberg, 2011: 23).

According to Solberg (2011), in clauses embedded within indirect speech, an LDA can possibly occur in an adjoined subjunctive subordinate clause depending on an AcI or a subjunctive complement clause of indirect speech. An important usage of the subjunctive mood is for expressing that a clause is reported. A clause that was supposed to be in the indicative if it were a part of the sentence that is asserted by the speaker. For example, adverbial clauses and relative clauses can be put in the subjunctive in order to express that the clause represents the thought of someone else. This is called the oblique subjunctive usage. Adjunct clauses to complements of indirect speech will be in the subjunctive if they are themselves part of what is reported. Solberg (2011) takes note of the fact that an LDA is able to occur in any kind of subordinate clause in this position when it is marked with the subjunctive of indirect speech, and is therefore, a part of the reported speech or thought itself. Sentence (31) is an example of the anaphor in an adverbial clause in an AcI complement.

31. [AcI [AdvCl **quorum si principes ac senatus sibi uire uirando fidem fecisset**]

their-gen.pl if chiefs-nom and senate-nom SE-dat oath-abl loyalty-acc do-plu perf. subj

ea condicione [RelCl quae a Caesare ferretur] se⁽ⁱ⁾ usuros] ostendebant.

that-abl condition-abl Rel Pron-nom by Caesar ring-imperf. pass. subj SE-acc use-fut. inf
show-imperf. ind.

‘[The Germans] assured [Caesar] that they would accept such conditions as might be proposed by him, if their chiefs and senate [i.e. those of the Ubii, a Gallic tribe] would assure them their loyalty by oath.’

(Solberg, 2011:48)

Finally, in the normal Latin LDA, it is also noted that LDAs also occur in independent indirect speech. That is, Acls and subjunctive clauses of indirect speech which do not overtly depend on any verb of speech. In the example provided in (30), Solberg (2011) posits that an LDA occurs in an AcI with no overt verb of speech, and subsequently, in (31) it occurs in an independent subjunctive clause.

31. **hos a se coerceri non posse**
 they-acc by SE-acc restrain-pass.inf not can-pres.inf
 ‘[Liscus says that] they cannot be constrained by him.’

32. **Vel sibi agros attribuant vel pattiantur eos tenere quos armis possederint**
 either SE-dat fields-acc assign-pres.subj or allow-pres.subj those-acc keep-inf RelPron-acc.pl.
 arms-abl occupy-perf.subj.

‘Either they (the Romans) should assign them (the Germans who are speaking) fields, or permit (them) to retain those which they had occupied with the help of arms.’

(Solberg, 2011:55)

In the investigation of special Latin LDAs, Solberg (2011) observes that LDAs occur in restrictive relative clauses, complement clauses but not in adjunct clauses and non-restrictive clauses. Restrictive clauses, therefore, constitute the most common environment for LDAs. Very few examples are, however, found in non-restrictive relative clauses. There is a further mention that LDAs also occur in adjunct clauses with the complementizer *quod*. The sentence provided in (33) is an example of a sentence with a correlative clause that seems to carry some adverbial function.

33. **sursum nitidae fruges arbustaque crescent, [pondera, [CorrC quantum**

up bright-nom crops-nom trees-nom+ and grow-pres.ind weight-acc quantum-nom
in se_i est], cum deorsum cuncta ferantur_i]

in SE-abl be-pres.ind while downwards all-acc bring-pres.pass.subj

‘The bright crops and the trees grow upwards, while they are brought down by all the weight they have in them.

(Solberg, 2011: 68).

Solberg (2011) defines *quod*-clauses as correlative clauses from a diachronic perspective. It is evident in cases where a *quod* clause has a demonstrative antecedent in the main clause that it can also have a noun as an antecedent. *Se* also occurs in clauses with complementizer *quia* ‘because.’ Long-distance bound *se* can also be bound in a clause with the complementizer *cum* ‘when, since, while.’ The study undertaken by Solberg (2011) is similar to the present study since both are investigating the domains where LDAs are found. The present study, however, differs from Solberg’s (2011) study in that it investigates LDAs in causative clauses, applicative clauses, the small clause and the imperatives. The study further investigates ambiguity of LDAs outside the minimal clause which is not undertaken by Solberg (2011).

Anderson (1986) discusses the location of long-distance reflexives (LDRs) in Icelandic and states that, the distribution depends on whether or not tense is present in the underlying structure. His conclusion comes as a result of the examination of three different domains that can or cannot allow long-distance binding of anaphors in Icelandic. These are the infinitival clauses, subjunctive clauses and indicative clauses as illustrated in (34.a, b and c) respectively.

34. a) **Jòn_i skipaði mér að raka sig_i/*hann_i**

Jòn ordered me C shave R him

‘Jòn ordered me to shave himself_i / *him.’

b) **Jòn_i segir að Maria elski sig_i/hann_i**

J says that M loves-S R him

‘Jon_i says that Maria loves him_i’

c) **Jòn_i veit að Maria elskar sig_i*/hann_i**

J knows that M loves –I R him

‘Jon_i knows that Maria loves himself_i */ him_i’

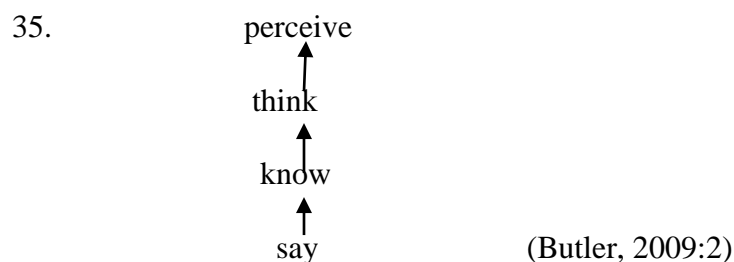
From (Thrainsson, 1991:55)

The binding of the reflexive *sig* is allowed in an infinitival clause as in (a) while in the subjunctive clause it is optional. Indicative tensed clause does not allow the binding of *sig*. The conclusion drawn by Anderson (1986) is that anaphors may be bound outside of a clause only if the clause has no base-generated tense. The Tense Agreement rule, therefore, allows for LDR binding out of a non-finite or subjunctive clause, but not out of a finite clause. The study by Anderson (1986) analyzes the distribution of LDRs in Icelandic in three domains, which are the infinitival clauses, subjunctive clauses and the indicative clauses. Anderson (1986) also stresses on whether or not tense is present in the underlying structures. The present study, however, analyzes ambiguous LDAs in Dholuo and looks at the strategies for interpreting the ambiguous elements.

Strahan (2001) investigates LDRs in Norwegian, calling them some types of ‘exempt’ anaphors since they do not obey the traditional syntactic conditions imposed on all reflexives, that they must find their antecedent within their clause. In the analysis, Strahan (2001) cites SE anaphors

as discussed by Reinhart and Reuland (1993). It is noted that SE anaphors are bound in the non-local or finite domain. The research done by Strahan (2001) focuses on the location of LDAs in three different environments; the infinitival clause, the subjunctive clause and the indicative tensed clause. The present study focuses on more than three different clauses, which also include the three analyzed by Strahan. The others include adjuncts, causatives, applicatives, tensed clausal complements, small clause, relative clauses and locative preposition clause.

In her discussion of logophoricity with special focus on Aghem, a Bantu language from the North West Province of Cameroon, Butler (2009) states that logophors, also known as long-distance anaphors occur outside the local domain where they are also bound. It is also noted that languages like Abe, Kwa language of Ivory Coast only have one verb, under which a logophor can be embedded. This is the verb 'say.' A particular complementizer co-occurs with the logophor, introducing the embedded clause in which the logophor occurs (Koopman & Sportiche, 1989). Verbs that license logophors in West African languages are hierarchical as shown in (35).



The hierarchy shows that if a language licenses logophors embedded under verbs of perception, it will also license them under verbs of thinking, knowing and saying. A language licensing logophors in one verbal context, licenses them under a verb of saying, such as Abe language of West Africa. Butler (2009) also argues that Aghem can license logophors in a wider range of

verbal contexts. The study analyzes the distribution of logophors by examining the verbs that license the logophoric elements. However, the current study investigates the distribution of LDAs by examining the clause embedding types.

2.3 The Syntactic Domains of Ambiguous Anaphors in Sentences

Huang and Tang (1991) discuss the local nature of the long-distance reflexive in Chinese, and state that the long-distance anaphor in Mandarin Chinese must be a ‘bare’ reflexive. *Ziji* is an example of a bare reflexive since it carries no overt gender but it carries overt person and number. *Ziji* simply means ‘self’ (third person singular) in Mandarin Chinese. Long-distance binding with *ziji* is however, restricted by a condition that requires the remote antecedent to agree in person and number features with all closer potential antecedents (Huang & Tang, 1991). Sentence (36) shows which antecedents bind *ziji*.

36. Zhangsan_i shuo [Wangwu_j zhidao [Lisi_k chang piping ziji_{i/j/k}]]

‘Zhangsan_i said that [Wangwu_j knew that [Lisi_k often criticized self_{i/j/k}]]

(Koster and Reuland, 1991: 264).

The sentence provided shows that *ziji* is bound by *Zhangsan*, *Wangwu* and *Lisi*, causing ambiguity. *Zhangsan* and *Wangwu* bind *ziji* outside the minimal clause whereas *Lisi* binds *ziji* within the same clause. In this study, Huang and Tang (1991) analyse the long-distance *ziji* with a view to finding the best way to explain the facts about the anaphor, not taking keen interest in the ambiguity caused by the anaphor being bound by different NPs within and outside the minimal clause. The study at hand is similar to the study undertaken by Huang and Tang (1991) in that both studies analyse LDAs in both languages. However, the present study is different in

that it is interested in identifying domains where ambiguous elements occur and how those elements can be interpreted unambiguously.

In his investigation of long-distance anaphor in Fula, a West African language, Potsdam (1995) analyzes LDA as a bound pronominal in Fula. It is observed that Fula pronoun series have the distribution of Condition B pronouns in that they must be free in the minimal NP containing the pronoun. When the antecedent is outside of the governing category, coreference options are not restricted. In sentences (37) and (38), one level of embedding makes the sentences grammatical because the pronouns are no longer bound in the minimal IP.

37. Daouda sikkii ko Beeto yiyii dum

Daouda think that Beeto see REFL

"Daouda_i thought that Beeto_j saw him_{i/j/k}"

38. a) Daouda sikkii ko Beeto yiyii mo

Daouda think that Beeto see him/her

"Daouda_i thought that Beeto_j saw him_{i/j/k}"

b) O sikkii ko Beeto yiyii mo

he think that Beeto see him

"He_i thought that Beeto_j saw him_{i/j/k}"

(Potsdam, 1995:174).

It is observed that the LDAs in (36) and (37) are ambiguous outside the minimal clause.

The study in context differs from the investigation done by Potsdam (1995) in that Potsdam examines the LDA bound outside the local domain whereas the present study interpretes ambiguous anaphors outside the local domain.

2.4 The Interpretation of Ambiguous LDAs

The strategies used in the interpretation of Dholuo LDAs that are ambiguous are discussed in sub-sections 2.4.1 to 2.4.6.

2.4.1 The Subject-orientation of LDAs

In the analysis of LDAs in Italian language, Giorgi (2006) posits that subject-orientation is not a “natural” property of binding relation given that it does not arise in other cases of binding. Giorgi (2006) further informs us that in examining LDAs in Italian, the only possible antecedent for the anaphor is the subject as opposed to other arguments, such as the object. For example,

39. **Gianni_i ha informato Maria_j che la propria_{i/*j} casa era in fiamme**

‘Gianni_i informed Maria_j that self_{i/*j} house was on flame.’

(Giorgi, 2006:5).

In sentence (38), the anaphor skips the first available subject and can only refer to the subject of the higher clause. The structural syntactic conditions for antecedent-hood are met by both nominals-the c-command-but only one qualifies as an antecedent (Giorgi, 2006). The study also discusses LDAs as logophors and talks on the theoretical approach which connects LDAs to the indexical context directly-the idea that LDAs are logophors. Further, Giorgi (2007) states that LDAs are subject-oriented since they are ruled by logophoric principles. The grammatical subject usually coincides with the prominent logophoric role. On the logophor theory, Giorgi (2006) discusses it on the basis of Cole, Hermon & Lee (2001). The claim here is that if the theory is stated in a simplistic way, then it does not make correct predictions. In several occasions, the antecedent is not the element bearing the prominent role in the discourse but it

appears to be a subject that has no particular prominence in the context (Cole, Hermon & Lee, 2001).

40. **Zhangsan_i wangji le Lisi_j hen taoyan ziji_{i/j} de gege.**

Zhangsan_i forget perf Lisi_j very hate self's brother

'Zhangsan_i forgot that Lisi_j hates his_i/his own_j brother.'

41. **Zhangsan_i bu xiao de Lisi_j hen taoyan ziji_{i/j}**

Zhangsan_i not aware Lisi_j very hate self

'Zhangsan_i was not aware that Lisi_j hates him_{i/j}.'

(Giorgi, 2004:119)

In discussing examples (39) and (40), Cole, Hermon & Lee (2001) argue that the matrix subject qualifies as an antecedent without being either a SOURCE or a SELF. Giorgi (2006), however, states that in cases where the antecedent appears to be external to the sentence, there is no reason to resort to discourse representation since the sentential grammar might syntactically supply the antecedent. Furthermore, the research makes a strong claim that the binding of LDAs is ruled by principles that lie outside the scope of sentence grammar (logophoric principles). Therefore, Giorgi (2006) discusses subject-orientation on the basis of logophoric theory, whereas the present study analyzes subject-orientation as a feature of LDA that can be used as a strategy to interpret ambiguous LDAs.

Sells (1987) explains that subject-orientation is relevant to discourse in the interpretation of LDAs. It is noted that the subject and not the object always plays a vital role in the discourse. Sells (1987) comes up with a suggestion that there are three ways in which a certain item can be prominent with respect to the other ones: SOURCE, SELF and PIVOT. Sells' (1987) analysis of

subject-orientation is based on discourse representation theory while the current study does the analysis syntactically, using the GB theory by Chomsky (1981).

Strahan (2001) cites linguists such as Dalrymple (1993) and Anderson (1986) as having commented that a subject-hood condition on the antecedent is necessary in the description of all reflexives and not just long-distance reflexives, as the typologically unmarked case appears to be when it is a grammatical subject as opposed to any other grammatical function. Strahan (2001) holds that, languages such as Icelandic, Chinese, Dutch, Latin, Italian and Finnish all seem to have a subject-hood condition. Strahan (2001) also provides examples from Icelandic which show the contrast in acceptability between a sentence with an available subject and a sentence with an available object as a potential antecedent. The object is rejected as a possible antecedent in Icelandic, hence there is a subject-hood condition on the antecedent of LDAs in Icelandic. Sentence (42) is an example in Icelandic with an available subject.

42. **Jóðn_i sagð [að ég hefði svikið hann_{i/j}]**

‘Jon_i said that I had betrayed him_{i/j}’

Sentence (43) is an example of a sentence with an available object.

43. ***Ég sagði Jón_i [að þú hefðir svikið sig_i]**

I said Jon that you had-S betrayed R

‘I said to Jon_i that you had betrayed him_i’

(Strahan, 2001:10).

Strahan (2001) examines subject-orientation as a feature of LDA while the present study takes subject-orientation as a strategy for interpreting ambiguous LDAs.

2.4.2 Obligatory Co-reference

Butler (2009) argues that the Aghem logophor in a clause embedded under a verb of speech, thought, perception and emotion, obligatorily establishes co-reference with the subject of the higher clause. This is a peculiar property of West African logophors. In contexts in which the logophors obligatorily co-refer, the normal non-logophoric pronoun is obligatorily disjoint in reference (Culy, 1997). In sentence (44), Aghem shows the regular pronoun in the embedded clause, which is obligatorily disjoint in reference from the subject of the verb of speech in the higher clause (Butler, 2009).

44. **Nnsìni dzè enyia ei/*j bvù nu**

Nsen say that **LOG** fall FOC

'Nsen_i said that she_i/*_j fell.'

(Butler, 2009:4).

The sentence also shows that the logophor in the lower clause obligatorily co-refers with the subject of the verb of speech in the higher clause (Butler, 2009). The discussion by Butler (2009) on obligatory co-reference as a property of West African logophors is restricted to particular verbal contexts of saying, thinking, knowing, perceiving and feeling emotion. There is no mention of ambiguity and how to resolve ambiguous LDAs. The present study, however, discusses obligatory co-reference as a strategy to resolve ambiguity.

2.4.3 Emphatics as an Interpretation Strategy

Storoshenko (2010) argues that emphatics can appear in more than one position. He states that in the canonical use, the emphatic self-pronoun occurs immediately following its antecedent. This means that the subject-adjacent emphatic or sentence final self pronouns, both emphasize the

subject. This is provided in example (45). The emphatic, however, can also appear at the end of a sentence, as shown in (46).

45. David_i himself_i obtained the contraband.

46. Chesney_i filled Schmeikel's bowl himself_i

(Storoshenko, 2010: 45).

2.4.4 Control Theory as an Interpretation Strategy

Control theory, a sub theory of GB, regulates the distribution and interpretation of PRO, which is an empty category doubling as an anaphor and a pronominal (Chomsky, 1981). Among the properties of Control discussed by Haegeman (1994) are 'Obligatory Control and Optional Control' and 'Subject Control versus Object Control'. In the discussion, Haegeman (1994) outlines examples which show how obligatory and optional control work. Sentence 47 and 48 are examples.

47. John thought that it was important [PRO to behave oneself/himself].

48. John tried [[PRO to behave himself/*oneself]].

(Haegeman, 1994: 284).

Sentence 47 shows that Control is optional. Haegeman (1994) states that PRO may be controlled by *John* but it may as well have an arbitrary interpretation because PRO may bind either *himself* or *oneself*. In sentence (48), PRO must be controlled and cannot be arbitrary. The asterik on *oneself* therefore shows its ungrammaticality.

Napoli (1993) also discusses obligatory and non-obligatory control and notes that one important fact about PRO, is that sometimes its interpretation is strictly delimited and sometimes not. For example, PRO in sentence (49) is controlled. PRO is understood to have the same referent as

John, so *John* is the controller (Napoli, 1993). On the other hand, Napoli (1993) states that in some instances, PRO is not controlled as in the example given in (50).

49. John wants to leave.

[John_i wants [PRO_i to leave]]

50. To paint like Leonardo is the common fantasy.

[[PRO to paint like Leonardo] is the common fantasy.

(Napoli, 1993: 321)

Haegeman (1994) also records that in obligatory control, the controller sometimes must be the subject or the object DP. There are verbs that impose subject control such as *try* and *promise*. These verbs are called ‘verbs of subject-control.’ Verbs like *tell* are ‘verbs of object-control.’ The sentence given in (51) is an example of a sentence with the subject DP as a controller.

51. Poirot_i decided finally [[PRO_i to go on his/*one’s own]].

52. Poirot_i ordered Mary_j [PRO_j to go on her own].

Haegeman, 1994: 280).

Sentence (52) is an example with an object DP as a controller.

Haegeman (1994) observes that it is possible to infer which DP is the controller of PRO from the choice of the possessives. In the literature, Control theory is discussed as one of the modules of GB, with elaborations on its properties. The current study, however, discusses Control theory as a strategy for interpreting ambiguous anaphors.

2.4.5 R-Expression Strategy

Principle C of the Binding sub-theory (Chomsky, 1981), states that an R-expression is not bound. The names must be free in the binding domains. They refer independently, which means that

they pick out entities in the world. An item is called an R-expression if it does not qualify as an anaphor or as a pronoun. Typically, R-expressions are names or definite DPs (Chomsky, 1981). Given that R-expressions have independent reference, they do not need an antecedent (Haegeman, 1994). A name can be used instead of an anaphor when stressing a point (Safir, 2008). This is exemplified in sentence 53 and 54.

53. Malik's mother_i said that she_{i/j} criticized him_{i/j}

54. Malik's mother said that Joyce criticized Malik.

(Safir, 2008: 40)

To interpret the ambiguous anaphor in (53) an R-expression is used as in expression (54). The anaphors *she* and *him* are replaced with *Joyce* and *Malik* respectively (Safir, 2008). Chomsky (1981) discusses R-expressions as entities in the world which need not be bound but should remain free. Safir (2008) also observes that R-expressions can be used in place of a pronoun in exceptional discourse circumstances such as extra stress and/or focus. The literature is relevant to the present study, however, the study analyses R-expressions as strategies for interpreting ambiguous LDAs.

2.5 Conclusion

An elaborate review of the literature on long-distance anaphor as a linguistic domain of study has been given in this section. Section 2.2 elaborates on ambiguity and interpretation. Section 2.3 reveals that LDAs are distributed in different environments, bound outside the local domain. Section 2.3 looks at the location of ambiguous anaphors, where it is established, and that most of the ambiguous anaphors are located outside the minimal clauses with a few cases of anaphors being ambiguous within the same clauses. In the interpretation of ambiguous anaphors, different

strategies come into play. Some of these are features of LDAs, which are Control theory, emphatics and R-expressions. The next chapter focusses on research methodology.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The chapter specifically provides details of the research design, study area, study population, study sample and sampling procedure, data collection techniques and the data collection process. Procedures of data analysis, ethical considerations and a brief conclusion form part of this chapter.

3.2 Research Design

The study employs analytical study design. According to Miles and Huberman (1994), the analytical approach involves describing and interpreting data. It also uses content analysis as a strategy for analysis. Data is transcribed, significant statements coded, themes identified and finally, conclusions are drawn. The patterns and relationships in the data are identified and the research questions answered and synthesized through descriptions.

3.3 Study Area

The study had targeted Dholuo language, spoken on the Eastern shores of Lake Victoria, Kenya. Dholuo speakers are part of the considerable proportion of local immigrant workers and settlers outside Luo land in various towns and cities, and it is normal to hear Dholuo being spoken far from the original Dholuo speaking zones. The study was conducted at Dunga village, Kisumu town. Kisumu being a cosmopolitan town is inhabited by a population from very many different linguistic and social backgrounds. Dunga village, a predominantly Dholuo speaking zone was chosen for the study. The natives of most areas that are now taken over by the town moved to settle in other areas outside the town, but Dunga still has a few households inhabited by natives. This forms Dunga village, also known as Nyang'iendo village.

3.4 Study Population

Rubin and Babbie (2001), postulate that the population is taken in research, as the total number of elements from which a sample is selected. The study population consisted of participants from Dunga village, Kisumu town, who were a total of 2000 adults (Office of the Sub-chief, 2014).

3.5 Sample Size and Sampling Technique.

A sample is a subset of the larger study population and is conceived as the set of elements that would be considered for selection and use in the study (Rubin and Babbie, 2001). According to Sankoff (1980), large samples tend to be unnecessary. Ideally, a large population of Dholuo-speaking people would have been sought, but taking into account that there would be a lot of similarities in the way language is used, only 10 participants were used to generate 80 sentences. Kothari (1978) says that if the items of a universe are homogeneous, a small sample can serve the purpose. Purposive and snow ball sampling techniques were used in the study to identify and select adult native speakers to provide the data. Payne & Payne (2004) state that in purposive sampling, the respondents, who are also the key informants, are purposively identified and selected since they are more knowledgeable about the language more than the rest of the population. The selection of sample members therefore depends on the researcher's judgement. The researcher selected one Luo adult informant, who was also a native. The informant further assisted in the identification of other informants who provided more data. In snowball sampling, one informant assists the researcher in identifying other informants (Mugenda and Mugenda, 2003). A total of 10 participants were selected, and they finally came up with a sample size of 80 sentences. The ten participants were taken to represent Dholuo speakers. The researcher, being a

native speaker, also used native speaker intuition to make acceptability judgements on the data. Eighty Dholuo sentences were expected to provide data that would be enough to enable justified conclusions.

3.6 Data Collection Techniques

The data collection procedure that was adopted for this study was a questionnaire. The data collection was done by asking participants questions and recording the sentences elicited. The questionnaire used was adapted from Safir (2008). The questionnaire was used to elicit data on anaphor in African languages. The questionnaires were administered by the researcher to the ten participants. It required the participants to indicate their gender. This was in order because it was meant to avoid gender bias. The participants were required to provide Dholuo sentences with long distance anaphors. Through introspection, data was also elicited using native speaker intuition (Johnstone, 2000).

3.7 Data Analysis

The analysis of the collected data was done by interpreting the content of the data through the systematic classification process of identifying themes or patterns using content analysis (Hsieh and Shannon, 2005). Mugenda & Mugenda (2003) further observe that content analysis is a procedure used for gathering and analyzing the content of a text, which can be words, phrases, sentences, paragraphs, pictures or even ideas. Content analysis was used as an analytical tool to categorize the sentences after identifying the embedded clauses and then interpret the results, therefore making the analysis descriptive in nature. The GB theory was also used in the analysis of the data as a guiding principle. The data was first categorized according to the clauses under

which the LDAs existed. To study ambiguity, it was imperative for the study to test the LDAs to find out if they brought out different meanings. The sentences were then classified according to the interpretation strategies that were to disambiguate the LDAs.

3.8 Ethical Considerations

Ethics are a major consideration in the data collection process. This involves revealing the purpose of the research to the respondents in order to gain their trust (Simons, 2006). The researcher had to get informed consent from the respondents. The researcher talked to the participants, explaining to them the purpose of the research before they accepted to elicit data. According to Schutt (2006), participation in research should be voluntary, and therefore, subjects or respondents must give their informed consent to participate in the research.

3.9 Conclusion

This chapter has dealt with the description of the research methodology in detail and the investigation techniques adopted. The section has also provided the necessary details concerning the research design, study area, study population, sample size and sample technique, data collection procedures, data analysis and ethical considerations. Chapter 4 which follows focuses on a detailed presentation of the data, discussion of the results and analysis.

CHAPTER FOUR

4.0 DATA PRESENTATION, DISCUSSION AND ANALYSIS

4.1 Introduction

In this chapter, analysis of the data that was obtained from the questionnaires was conducted within the tenets of the GB theory (Chomsky, 1981). Four modules of the GB theory were used, namely, Government theory, Binding theory, Case theory and Control theory. The Government and Case theories explained how heads of lexical categories govern and case-mark anaphors. The Binding theory was used to explain the binding of anaphors outside the minimal clauses, whereas the Control theory was employed in the interpretation of ambiguous LDAs in the Dholuo expressions. Section 4.2 provides the description of the data specifically focussing on the domains in which the Dholuo LDAs are realized, section 4.3 analyzes the domains where the LDAs appear ambiguous while section 4.4 discusses the strategies through which ambiguity is resolved. The analysis is therefore in line with the objectives outlined in chapter one.

The participants indicated the year of birth to ensure that only adults provided data. Indication of sex ensured no bias in the study. A total of 80 Dholuo sentences containing LDAs were collected from the questionnaires. Looking at Dholuo sentences collected, there was an indication that LDAs occur in embedded, clauses with antecedents either occurring initially or finally in the sentences.

4.2 The Syntactic Domains of LDAs in Dholuo

According to Solberg (2011), LDAs occur in embedded complementizer phrases, hereafter referred to as CPs, that are bound by antecedents in the matrix clause. The subsequent subsections highlight the systematic domains in which Dholuo LDAs occur.

4.2.1 The Non-finite Clause Subjects in Dholuo

In grammar, a non-finite clause is defined as a clause that is based on an infinitive or a particle and does not show any particular tense (Cobuild, 2001). For example, sentence (a) shows a sentence with a non-finite clause.

- a) John expects [to win].

LDAs are realized in non-finite clauses in Dholuo as shown in the illustration in data set 1.

Data set 1

- i. ? *Ouma_i dwa-ro-[CP ni osiep-ne_{i/j} o-yud mich]*.

Ouma PRES-want-PROG-that [friend-POSS INF 3SG-get present]

‘Ouma_i wants [CP his_{i/j} friend to get a present].’

- ii. ? *Otieno_i no-kwa-yo Ouma_j [CP ni o-mi-ye_{i/*j/k} buk]*.

Otieno PST-3SG-ask-PROG Ouma [INF 3SG-give-him book]

‘Otieno_i asked Ouma_j [CP to give him_{i/*j/k} a book].’

- iii. ? *Akinyi_i no-par-o ne nyamin-gi_{i/j}[CP ni o-kaw law-e_{i/j}]*.

Akinyi PST-remind-PROG for sister-her [INF 3SG-take dress-POSS]

‘Akinyi_i reminded her sister_{i/j} [CP to take her_{i/j} dress].’

In sentence (i) of data set 1, the subscript (i) shows that the anaphor *-ne* within the CP co-refers with *Ouma*. The two NPs are not within the same clause. The anaphor *-ne* is the subject of the embedded non-finite clause. Between *Ouma* and *-ne*, Principle B of the Binding theory states that a pronoun must be free within the same clause. In this case, *-ne* is bound outside the minimal clause. For *Ouma* to bind *-ne*, it must c-command the anaphor. *Ouma* therefore binds *-ne* outside the minimal clause. Using the Government theory, the subject of the lower clause should be governed or case-marked by an outside governor (Haegeman, 1994). In this case, *osiep-ne* is the

subject of the lower clause, the non-finite clause. It is governed and case-marked by the matrix verb *dwar-o* ‘wants’ which is in the matrix clause, outside the non-finite clause.

In sentence (ii), the anaphor is *-ye* which refers to *Otieno* the matrix subject in the sentence and not *Ouma*. It is noted that the anaphor does not refer to *Ouma* since it picks the higher subject as its antecedent, hence subject-orientation as a characteristic of the LDA (Giorgi, 2006). The pronoun is bound outside the local domain, therefore, Principle B is not violated because it is supposed to be free within the local domain. The antecedent *Otieno* c-commands and binds *-ye* outside the local domain. There is a coreferential relationship between the anaphor and the antecedents (Strahan, 2001). Principle A which requires that the anaphor and antecedent are coindexed within the same clause does not apply in sentences (i) and (ii).

Observing sentence (iii), *Akinyi* and *nyamin-gi* are co-indexed as the subscript (i) shows. The two DPs are within the same clause, the matrix clause. According to Principle A of the Binding theory, the antecedent *Akinyi* and the anaphor *-gi* must be co-indexed within the same clause. The anaphor *-e* within the CP co-refers with both *Akinyi* and *-gi* outside the minimal clause, hence Principle B is not violated.

4.2.2 The Anaphor in the Dholuo Subjunctive Clause

Strahan (2001), states that subjunctives are sentences that contain verbs in the subjunctive mood. A verb is in the subjunctive mood when it expresses a condition which is doubtful or not factual. Verbs such as insist, ask, demand, request, wish, suggest, recommend are typically followed by clauses that take the subjunctive (Strahan, 2001). This is illustrated in the sentence that follows:

‘George suggests that each driver reports to his office.’ These verbs are usually followed by the ‘That clause.’

The subjunctive clause in Dholuo is discussed in data set 2.

Data set 2

- i. *Onyango_i ne par-o [CP ni Otieno_j ne dwar-o tuom-e_i/*_j/k].*

Onyango PST think-PROG [that Otieno PST want-PROG hit-him]

‘Onyango_i thought [CP that Otieno_j wanted to hit him_i/*_j/k].’

- ii. *Onyango_i gen-o [CP ni Otieno_j bi-ro miy-e_i/*_j/k pesa].*

Onyango PRES-hope-PROG [that Otieno come-FUT-PROG give-him money]

‘Onyango_i hopes [CP that Otieno_j will give him_i/*_j/k money].’

- iii. *Onyango_i ne par-o [CP ni Otieno_j ne o-hiny-o-re*_i/_j gi kidi].*

Onyango PST think-PROG [that Otieno PST 3SG-hurt-PROG-SELF with stone]

‘Onyango_i thought [CP that Otieno_j hurt himself*_i/_j with a stone].’

The LDA *-e* in (i) and (ii) occur in the embedded subjunctive clause. In sentence (i), it is noted that the Binding theory applies, where the anaphor *-e* co-refers with the subject of the matrix clause *Onyango*. The subject of the matrix clause binds the anaphor outside the minimal clause. This does not violate Principle B of the Binding theory, which states that the pronoun must be free within the binding domain, also referred to as the local domain. The anaphors and the antecedents are not coindexed as per the requirement of Principle A of the Binding theory.

Likewise, in sentence (ii) the LDA *-e* which co-refers with the subject of the matrix clause *Onyango* is outside the binding domain. However, *Otieno*, the object antecedent is within the

same clause. This means that *Otieno* does not bind *-e* within the same clause, obeying Principle B of the Binding theory.

In (iii), *Otieno* and *-re* are co-indexed within the same clause. This means that *Otieno* binds *-re* the reflexive pronoun. In this case Principle A of the Binding theory (Chomsky, 1981) which states that the anaphor must be bound within the governing category, that is, within the binding domain is obeyed. *Otieno* being the lexical head of the subjunctive clause governs *-re*, which it c-commands. *Otieno* and *-re* are within the minimal clause, the subjunctive clause. The conditions are that *Otieno* the antecedent should c-command *-re* and the noun, *Otieno* should be the head of the subjunctive clause. *Otieno* is therefore the nominative case of the subjunctive clause whereas ‘himself’ is the accusative, both being case-marked by the verb *hinyo*. *Onyango* does not bind the reflexive *-re* since they are not in the same binding domain. Principle A only allows the reflexive to be bound by the antecedent when they are in the same binding domain (Chomsky, 1981).

4.2.3 The Anaphor in the Dholuo Adjunct Clause

Cobuild (2001) defines an adjunct in grammar as a word or group of words indicating the circumstances of an action, event or situation. It can be omitted without making the sentence ungrammatical because it provides circumstantial information. These types of expressions occur in Dholuo as sentences in data set 3 confirm.

Data set 3

- i. [*CP ka ne o_i/j-se-wuo-yo gi galamoro*] to *Otieno_i no-a*

[after PST 3SG-PERF-talk-PROG PREP crowd]Otieno PST-3SG leave

‘[_{CP} After he_{i/j} had talked to the crowd], then Otieno_i left.’

ii. *Otieno_i no-tho* [_{CP} *ka-pok o_{i/j}-wuo-yo gi wuod-e_{i/j}*].

Otieno PST-3SG die [before-NEG 3SG-talk-PROG with son-his]

‘Otieno_i died [_{CP} before talking to his_{i/j} son].’

iii. *Otieno_i no-tur-o tiend-e_i* [_{CP} *ka ne o_{i/j}-ng’ad-o ndara*].

Otieno PST 3SG-3SG break-PROG leg-POSS [when PST-3SG-cross-PROG road]

‘Otieno_i broke his_i leg [_{CP} when he_i was crossing the road].’

The anaphors *o-*, ‘he’, and *-e*, ‘his’, are found in the embedded clause of sentence (i) and (ii) respectively. In sentence (i), the adjunct clause comes initially, with the subject *Otieno* coming finally after the clause, a case of backward anaphora (Safir, 2008). The anaphor *o-* is bound by *Otieno*. In sentence (ii), the subject, *Otieno*, c-commands the anaphor, therefore, the Government theory applies in the sentence as well as the Binding theory. When applying Government theory in sentence (ii), the subject of the lower clause is governed by an outside governor (Haegeman, 1994). This means that *o-* (he), the subject of the lower clause, is case-marked by the verb of the matrix clause *no-tho* (died). Therefore the anaphor *o-* is governed by the verb *no-tho*. Using the Binding theory, *Otieno* then binds *o-* in (i) and *-e* in (ii). In both instances, the anaphors are bound outside the binding domain, hence Principle B of the Binding theory which requires that the pronoun remains free in the minimal clause (the local domain) is not violated.

In sentence (iii), the antecedent *Otieno* c-commands the anaphor *-e* within the matrix clause, which is the minimal clause in which *-e* is bound by *Otieno*. Principle B of the binding theory is violated since the pronoun *-ne* which is supposed to be free in this domain is bound. The anaphor *o-* which is outside the minimal clause is also bound by the antecedent *Otieno*. The

Government theory also requires that the governor be the lexical head in the minimal domain (Epstein, 1991). In this case, *Otieno*, the noun is the head of the matrix clause and it also c-commands the anaphor *-e*. Therefore *Otieno* governs *-e*.

4.2.4 The Anaphor in the Dholuo Causative Construction

A causative is a form which indicates that a subject causes someone or something else to do or be something, or causes a change in state of an event (Shibatani, 2001). The expressions exemplified in data set 4 show that LDAs exist in Dholuo causative clauses.

Data set 4

- i. *Awino_i ne o-wach-o [CP ni Akinyi_j no-mi-yo Atieno o-neg-o chuo-re_{i/j/k}].*

Awino PST 3SG-say-PROG [that Akinyi PST-3SG-make-PROG Atieno 3SG-kill-PROG husband-POSS]

‘Awino_i said [CP that Akinyi_j made Atieno_k to kill her_{i/j/k} husband].’

- ii. *Awino_i no-wach-o [CP ni Atieno_j no-ket-e_j* mo-madh-o lach-ne_{i/j}].*

Awino PST 3SG-say-PROG [that Atieno PST-3SG-put-PROG 3SG-INF-drink-PROG urine-POSS]

‘Awino_i said [CP that Atieno_j made her_{i/j} to drink her_{i/j} urine].’

- iii. *Awino_i no-wach-o [CP ni ne o_i-ket-o nyamin-gi_{i/j} mo-nind-o e od-e_{i/j/k}].*

Awino PST-3SG-say-PROG [that PST-3SG-put-PROG sister-her INF-sleep-PROG PREP house-POSS]

‘Awino_i said [CP that she_i made her_{i/j} sister to sleep in her_{i/j} house].’

In sentence (i), the anaphor *-re* ‘her’ is found in the embedded causative construction. The anaphor is bound by the matrix subject *Awino* as well as *Akinyi* and *Atieno* within the embedded

construction. Principle B of the Binding theory (Chomsky, 1981) which states that the anaphor must be free in the minimal clause, is not violated since the pronoun is bound outside the local domain.

In sentence (ii), the anaphor *-e* refers either to *Awino* or someone external to the conversation. The anaphor *-ne* refers to *Awino*, *Atieno* or someone outside the conversation. Both anaphors are outside the matrix clause, occurring in the causative clause embedded to the matrix clause. Both anaphors are bound outside the minimal clause. *Awino* is in the matrix clause while *Atieno* is in the embedded clause. The anaphors *-e* and *-ne* are in the same clause with *Atieno*. The NP *Awino* has crossed and bound the anaphors *-e* and *-ne* which are in a different clause. *Atieno* does not bind *-e* but binds *-ne* within the same clause. When an anaphor co-refers with two or more antecedents, like in the case of sentence (i) and (ii) which co-refer with two antecedents, the situation is referred to as split antecedent (Dimitriadis and Everaert, 2002).

In (iii), the antecedent *Awino* and the anaphor *o-* are co-referential. They are not within the same clause. The pronoun is bound outside the local domain. This is not in line with Principle B of the Binding theory which requires that the pronoun be free in the local domain. The anaphors *-gi* and *-e* are within the causative construction. They co-refer with *Awino*, the subject of the matrix clause and *o-* the subject of the embedded clause. Using the Binding theory, *Awino* therefore binds *-gi* and *-e* outside the minimal clause.

4.2.5 The Dholuo Tensed Clausal Complement

Tensed clauses refer to clauses with finite verbs inflected for tense (Radford, 1997). Sentences in data set 5 reveal this phenomenon in Dholuo.

Data set 5

- i. *Okinyi_i o-ng'e-yo ni Otieno_j no-wach-o* [_{CP} *ni o_{i/j/k}-ratego*].

Okinyi 3SG-PRES-know-PROG that Otieno PST-3SG-say [that 3SG-strong]

'Okinyi_i knows that Otieno_j said [_{CP} that he_{i/j/k} is strong].'

- ii. *Okinyi_i par-o* [_{CP} *ni o_{i/j}-riek*].

Okinyi PRES-think-PROG [that 3SG-PRES-bright]

'Okinyi_i thinks [_{CP} that he_{i/j} is bright].'

- iii. *Akinyi_i o-ng'e-yo* [_{CP} *ni ne o_{i/j}-yue-yo mesa kende_{i/j}*].

Akinyi 3SG-know-PROG that [PST 3SG-wipe-PROG table 3SG-REFL]

'Akinyi_i knows [_{CP} that she_{i/j} wiped the table herself_{i/j}].'

Sentence (i)-(iii) are Dholuo expressions showing that LDAs exist in embedded tensed clausal complement. The anaphor in (i) is *o*- 'he' referring to either *Okinyi* or *Otieno*. The anaphor is bound outside the minimal clause by either *Okinyi*, *Otieno* or someone external to the conversation. The NP *Okinyi* is in the matrix clause while *Otieno* is in the embedded clause. These are R-expressions, meaning that they are names and are different entities (Chomsky, 1981). They are therefore not co-indexed. Principle C of the Binding theory requires that they remain free within the binding domain. The relationship between the anaphor and the antecedents is that of co-reference.

Sentence (ii) also has the anaphor *o*- 'he' which is bound by *Okinyi*. *Okinyi* is within the matrix clause while *o*- is in the tensed clause. The antecedent *Okinyi* therefore binds the anaphor outside

the local domain. Binding theory also applies in this case because *Okinyi* c-commands the anaphor. Principle B of the Binding theory is not violated since the pronoun is bound outside the binding domain. The subject of the lower clause in sentence (ii) is *o-* (he), which is case-marked by the verb of the matrix clause *paro* (thinks). Therefore *o-* is governed by the verb *paro*.

The anaphors *o-* and *kende* in sentence (iii) both refer to *Akinyi*. They are within the tensed clause. The pronoun *o-* ‘she’ and the reflexive *kende* ‘herself’ refer to *Akinyi* and someone else not mentioned in the sentence. The pronominal anaphor *o-* and the reflexive anaphor *kende* are bound by the antecedent *Akinyi* which is in the matrix clause.

4.2.6 The Dholuo Applicative Construction

According to McGinnis and Gerdts (2004), applicatives are referred to as event modifiers. They involve the instrumental and benefactive arguments and resemble English datives. For example, in sentence (i) of data set 6, *Ouma* is the benefactive argument, benefiting from the present bought by *Otieno*. *Otieno* is therefore the instrumental argument.

Data set 6

- i. *Ouma_i no-ng'e-yo [CP ni Otieno_j no-ng'iew-o-ne_{i/*j/k} mich].*

Ouma PST-3SG-know-PROG [that Otieno PST-3SG-buy-PROG-him present]

‘Ouma_i knew [CP that Otieno_j bought him_{i/*j/k} a present].’

- ii. *Awuor_i no-ng'e-yo [CP ni ne o_{i/j}-ng'iew-o-ne min-gi_{i/j} mich].*

Awuor PST-3SG-know-PROG [that PST 3SG-buy-PROG for mother-POSS present]

‘Awuor_i knew [CP that she_{i/j} bought her_{i/j} mother a present].’

- iii. *Awuor_i no-wach-o [CP ni ne o_{i/j}-ger-o ne min-gi_{i/j} ot].*

Awuor PST-3SG-say-PROG that PST 3SG-build-PROG for mother-POSS house]

‘Awuor_i said [CP that she_{i/j}built her_{i/j} mother a house].’

Dholuo allows LDAs in the applicative clause. In sentence (i), *-ne* ‘him’ is the LDA co-referring with *Ouma*, the subject antecedent, but not *Otieno*. The anaphor also refers to an individual not mentioned in the conversation. The anaphor refers to *Ouma* who benefited from the gift bought by *Otieno* or to another individual who also benefited from the gift. *Otieno* is the instrumental argument because he initiated the buying. The verb *ng’eyo* ‘know’ case-marks *Otieno*, the object antecedent. *Otieno* is governed by the verb *ng’eyo*.

In sentence (ii) the anaphor *-gi* refers to *Awuor* and an individual external to the conversation. The anaphor *-gi* co-refers with *Awuor* and *o-* which is within the embedded clause. The antecedent *Awuor* binds *-gi* outside the minimal clause. *Awuor* also c-commands and binds the anaphor *o-* which is outside the matrix clause. The anaphor *-gi* is coreferential with *Awuor* the instrumental argument and *o-*. *Min* in the embedded clause is the beneficiary of the present bought. Principle B of the Binding theory, which requires that a pronoun remains free within the same clause, is not violated.

Awuor in sentence (iii) is in the matrix clause and it binds the anaphors *o-* and *-gi* which are in the embedded applicative clause. Similarly, *Awuor* who initiated the buying is the instrumental argument whereas *min-gi* is the beneficiary. This does not violate Principle B of the Binding theory, which requires that the anaphor be free within the same clause.

4.2.7 The Anaphor in the Dholuo Small clause

In linguistics, the small clause is a construction that has the semantic subject-predicate characteristics of a clause but is verbless (Toman, 1991). While clauses usually contain a verb, which is finite or non-finite, the small clause lacks an overt verb. Dholuo exhibits expressions with the small clause as is shown in data set 7.

Data set 7

- i. ? *Ochieng*'_i *o-kaw-o* [_{CP} *baba-gi*'_{i/j} *kaka japuonj*].
Ochieng' 3SG-PRES-take-PROG[father-POSS as teacher]
'Ochieng'_i considers [_{CP} his_i father a teacher].'
- ii. ? *Atieno*'_i *o-yud-o* [_{CP} *osiep-ne*'_{i/j} *ka tij-e tek*].
Atieno PST-3SG-find-PROG[friend-POSS if work-POSS hard]
'Atieno'_i found [_{CP} her_i friend very difficult].'
- iii. *Achieng*'_i *o-yud-o* [_{CP} *wuod-e*'_{i/j} *ka otho*].
Achieng' PST-3SG-find-PROG [son-POSS if dead]
'Achieng'_i found [_{CP} her_{i/j} son dead].'

The anaphor *-gi* in (i) is within the small clause and is co-referential with *Ochieng*. Similarly, in sentence (ii), the LDA *-ne* is also within the small clause and is co-referential with *Atieno* and another person. In sentence (i), *-gi* 'his' is the subject of the lower clause and it is governed and case-marked by the outside governor, which is the verb of the matrix clause, the verb *o-kawo* 'considers.'

Similarly, the anaphor *-ne* in sentence (ii) is the subject of the lower clause, the small clause. It is governed by the verb *o-yudo* 'found' which is in the matrix clause. The anaphors *-gi* and *-ne*

are also bound by antecedents outside the minimal clause. Both antecedents, *Ochieng'* and *Atieno* c-command the anaphors.

In sentence (iii), the antecedent *Achieng'* binds the anaphor *-e* outside the minimal clause. Whereas Principle B of the Binding theory requires that the pronominal remains free within the binding domain, the pronominal *-e* is bound by *Achieng'* which is outside the small clause.

4.2.8 The Anaphor in the Dholuo Relative clause

Stockwell (1977) reveals that when the reference of a noun cannot be clarified satisfactorily by any determiner, then a relative clause is used for clarity by most languages. The clause is generally introduced by a relative pronoun such as *who*, *what* or *which*. Dholuo also allows LDAs occurring in the embedded relative clauses. This is illustrated in data set 8.

Data set 8

- i. *Japuonji ne ok o-kum-o wuoyij [CP ma-ne o-kwal-o pesa-ne_{i/*j/k}].*

Teacher PST NEG 3SG-punish-PROG boy [REL-PST 3SG-steal-PROG money-POSS]

'The teacher_i did not punish the boy_j [CP who stole his_{i/*j/k} money].'

- ii. *Onyango_i ne o-nen-o ng'at_j [CP ma-ne o-go-ye_{i/*j/k}].*

Onyango PST 3SG-see man [REL-PST-3SG-beat-him]

'Onyango_i saw the man_j [CP who beat him_{i/*j/k}].'

- iii. *Onyango_i ne o-ne-no ng'at_j [CP ma-ne o-hiny-o-re_{i/j}].*

Onyango PST 3SG-see-PROG man [REL-PST 3SG-hurt-PROG-SELF]

'Onyango_i saw the man_j [CP who hurt himself_{i/j}].'

The LDA *-ne* 'his' in sentence (i) is within the embedded relative clause. Likewise the LDA *-e* 'him' in sentence (ii) is also within the embedded relative clause. In (i), the anaphor is bound by

Japuonj, the subject of the higher clause, outside the minimal clause. In sentence (ii), *Onyango* binds *-ye* outside the minimal clause. Therefore, there is a co-referential relationship between the antecedents and the anaphors in the two sentences.

In sentence (iii) the anaphor *-re* is bound by the object antecedent *ng'at* 'man' and not the subject antecedent. The anaphor is bound outside the binding domain, violating Principle A of the Binding theory, which requires that the anaphor be bound within the minimal clause.

4.2.9 The Anaphor in the Dholuo Adverbial clause

An adverbial clause is a dependent clause which functions as an adverb (Greenbaum and Quirk, 1990). It contains a subject which is explicit or implied and a predicate. It modifies a verb, an adjective or other adverbs (Greenbaum and Quirk, 1990). The illustrations in data set 9 attest that such expressions exist in Dholuo.

Data set 9

- i. *Japuonjre_i ne par-o ni japuonj maduong'_j no-wuok* [_{CP} *bang' ka wend-e_{i/j} no-se-a*].

Student PST-think-PROG that teacher-big PST-3SG-leave [after3PL-visitor-POSS PST PERF-go]

'The student_i thought that the headteacher_j left [_{CP} after his/her_{i/j} visitors had gone].'

- ii. *Otieno_i no-wach-o ni Onyango_j no-chop-o* [_{CP} *ka osiep-ne_{i/j} pok o-luong-o nying ji*].

Otieno PST-3SG-say-PROG that Onyango PST-3SG-reach-PROG[before friend-POSS NEG3SG-call-PROGname people]

'Otieno_i said that Onyango_j arrived [_{CP} before his_{i/j} friend called the names of people].'

- iii. *Otieno_i ne o-wach-o ni ne o_{i/j}-pak-o-re_{i/j}* [_{CP} *kapok wend-e_{i/j} o-bi-ro*].

Otieno PST 3SG-say-PROG that PST 3SG-praise-PROG-SELF before NEG vsitor-PL
PST-come-PROG

‘Otieno_i said that he_{i/j} praised himself_{i/j} [before his/her_{i/j} visitors arrived].’

Sentences (i) and (ii) show the anaphors *-e* ‘his/her’ and *-ne* ‘his’ respectively are embedded in the adverbial clause. In (i), *Japuonjre* and *japuonj maduong*’ bind the anaphor *-e* outside the binding domain. The anaphor *-e* can pick both the subject and object antecedents. This is a case of split antecedent where the anaphor is co-referential with both antecedents.

In (ii), *Otieno* and *Onyango* also bind *-ne* outside the minimal clause. The LDAs are bound outside the local domains by their antecedents. Principle B of the Binding theory is violated since it requires that the pronoun is free within the binding domain. The anaphor therefore co-refers with the antecedents which are in the matrix clause.

In (iii), *Otieno* is co-indexed with the anaphors *o-* and *-re* in the matrix clause. *Otieno* c-commands both anaphors, therefore, binding them within the minimal clause. The relationship between *Otieno* and *-re* obeys Principle A of the Binding theory which states that an anaphor must be bound within the minimal clause. The anaphor *o-* violates Principle B of the Binding theory which requires that the pronoun remains free within the binding domain. *Otieno* also binds the anaphor *-e* which is embedded in the adverbial clause. This anaphor is bound outside the minimal clause.

4.2.10 The Dholuo Locative preposition

According to Giorgi (1991), the locative prepositions specify the location in time, direction and space of the subject. Data set 10 provides examples of expressions in Dholuo with locative prepositions

Data set 10

- i. ? *Japuon_i no-chiw-o mich ne Otieno_j [CP e dala-gi_{i/j}].*

Teacher PST 3SG-give-PROG gift INF Otieno [LOC home-POSS]

‘The teacher_i gave a gift to Otieno_j [CP at their_{i/j} / his_{i/j} home].’

- ii. *Onyango_i no-mak-o jakuo_j [CP e bwo kitanda-ne_{i/j}].*

Onyango PST-3SG-catch-PROG thief [LOC-under bed-POSS]

‘Onyango_i caught the thief_j [CP under his_{i/j} bed].’

- iii. ? *Onyango_i no-wach-o ni ne o_i-yud-o-re_i [CP e wi mesa-ne_{i/j}].*

Onyango PST-3SG-say-PROG that PST 3SG-find-PROG-SELF [LOC head table-POSS]

‘Onyango_i said that he_{i/j} found himself_{i/j} [CP on top of his_{i/j} table.]’

The anaphor *gi* ‘his’ in (i) is bound by *japuonj* the subject antecedent and *Otieno* the object antecedent. The anaphor is bound outside the binding domain, violating Principle A of the Binding theory.

The anaphor *ne* ‘his’ in (ii) is also bound by *Onyango* the subject antecedent and *jakuo* the object antecedent. The anaphor is bound outside the minimal clause, also violating Principle A of the Binding theory which states that an anaphor must be bound within the binding domain.

In sentence (iii), there is co-indexation between *Onyango*, the anaphor *o-* and *-re*. *Onyango* also binds the anaphors *o-* and *-re* within the minimal clause, which is the matrix clause. This relationship between *Onyango* and *o-* violates Principle B of the Binding theory which states that the pronoun must be free within the binding domain. *Onyango* also binds *-re* within the binding domain. This is in line with Principle A of the Binding theory which states that the anaphor must be bound within the binding domain (Chomsky, 1981). However, *Onyango* binds the anaphor *-ne* outside the minimal clause, violating Principle A of the Binding theory.

4.3 The Syntactic Domains in which LDAs are Ambiguous in Dholuo

LDAs which are also referred to as SE anaphors by Reinhart and Reuland (1993) are bound in the non-local domain (also called the finite domain) as opposed to the SELF anaphors. The LDAs are referred to as SE anaphors because they are monomorphemic, having only one morpheme such as ‘his,’ as opposed to SELF anaphors with two morphemes (bimorphemic). Examples of such anaphors are the reflexive anaphor ‘himself.’ Dholuo as a language allows embedding in different types of clauses and it is within these clauses that the ambiguous LDAs are realized.

Crystal (1991) defines ambiguity as a word or sentence that expresses more than one meaning. He identifies lexical ambiguity as that which is due to the alternative meanings of an individual lexical item. It is a situation where the same word has a set of different meanings, in other words, it is the property of an expression with more than one meaning or multiple meanings. Gorfein (1989) explains that semantic ambiguity for lexical items occur when a single word refers to multiple categories.

4.3.1 Ambiguity in the Dholuo Non-finite clause

The sentences in data set 11 are examples of Dholuo sentence constructions with the non-finite clauses embedded to the matrix clauses.

Data set 11

- i. *Ouma_i gen-o [CP neno woun-gi_{i/j}].*

Ouma PRES-expect-PROG [PRES-see father-his]

‘Ouma_i expects [CP to see his_{i/j} father].’

- ii. *? Otieno_i ne o-kwa-yo Onyango_j [CP mondo o-bed gi kwe gi osiepe-ne_{i/j/k}].*

Otieno PST 3SG-ask-PROG Onyango [INF 3SG-be with peace with PL-friend-POSS]

‘Otieno requested Onyango [CP to be peaceful with his_{i/j} friends].’

- iii. *Onyango_i ne o-yie [CP mondo odhi e tije-ne_{i/j}].*

Onyango PST 3SG-accept [INF 3SG-go in PL-work-POSS]

‘Onyango accepted [CP to go on his_{i/j} mission].’

- iv. *Onyango_i ne o-yie-ne Otieno_j [CP mondo o-dhi e tij-e_{i/j/k}].*

Onyango PST 3SG-allow-him Otieno [INF 3SG-go on PL-work-POSS]

‘Onyango_i allowed Otieno_j [CP to go on his_{i/j/k} mission].’

- v. *Otieno_i par-o [CP juang’-o od-gi_{i/j}].*

Otieno PRES 3SG-think-PROG [IMP 3SG-abandon-PROG house-POSS]

‘Otieno_i considers [CP abandoning his_{i/j}family].’

The non-finites which are the basic forms of verbs are used in statements to assert or falsify statements (Kusumoto, 2005). Infinitive can also be used in a presupposition, something that is assumed to be true (Keshet, 2007). In sentence (i) the anaphor-*gi* can either refer to the matrix subject *Ouma* or another person not mentioned in the sentence. *Ouma* c-commands the anaphor–

gi and binds it outside the minimal clause. Principle A of the Binding theory states that the anaphor must be bound within the minimal clause, but the principle is violated in this case. There is coreference rather than coindexation relationship. The anaphor refers to *Ouma* and another person not mentioned in the sentence. This makes the anaphor ambiguous.

In (ii), *Otieno* and *Onyango* bind *-ne* outside the minimal clause. The LDA *-ne* is ambiguous since it refers to *Otieno*, *Onyango's* friends or a third party not named in the sentence. In (iii), *Onyango* binds *-ne* outside the minimal clause. The LDA *-ne* is ambiguous since it refers to *Onyango* accepting to go on his own mission or *Onyango* accepting to go on another person's mission. In (iv) *Onyango* and *Otieno* bind *-e* outside the governing category. The anaphor *-e* is co-referential with both *Otieno* and *Onyango*, making it ambiguous. Principle A of the Binding theory which states that the anaphor should be bound by the antecedent within the minimal clause is violated because the anaphor is bound outside the minimal clause. The anaphor *-e* also refers to a third person not mentioned in the sentence. Sentence (v) has the LDA realized in the gerundive clause, which is also a non-finite clause. In the sentence, the subject antecedes the anaphor, which is also bound outside the local domain. The anaphor *-gi* is ambiguous since it co-refers with *Otieno* the subject antecedent and some other person not mentioned. The verb *paro*, which is in the matrix clause, governs *od-gi* (**his** family) which is the subject of the lower clause. Pragmatically, *-ne* in (ii) also refers to someone else not mentioned, where *Otieno* could be speaking in a situation known to *Onyango*. The anaphor *-e* in (iv) could also refer to someone else known to *Onyango* and *Otieno*. According to Cobuild (2001), pragmatics involves ways in which language is used to express what somebody really means in a particular situation, especially when the actual words used may appear to mean something different.

4.3.2 Ambiguity in the Dholuo Subjunctive clause

The occurrence of the Dholuo anaphor in sentence constructions shows ambiguity as in the expressions given in data set 12.

Data set 12

- i. ? *Ouma_i gen-o [CP ni osiep-ne_{i/j} bir-o lim-e_{i/j}].*

Ouma PRES 3SG-hope-PROG [that friend-POSS FUT-come-PROG visit-him]

‘Ouma_i hopes [CP that his_{i/j} friend will visit him_{i/j}].’

- ii. *Ouma_i no-nyis-o osiep-ne_{i/j} [CP ni o_{i/j}-bir-o lo-yo e piem].*

Ouma PST-tell-PROG friend-POSS that 3SG-come-PROG defeat-PROG in-contest

‘Ouma_i told his friend_{i/j} [CP that he_{i/j} will win in the contest].’

- iii. *Ouma_i no-wach-o [CP ni ne o_{i/j}-luor].*

Ouma PST 3SG-say-PROG [that PST-3SG-afraid]

‘Ouma_i said [CP that he_{i/j} was afraid].’

Thrainsson (1991) holds that LDAs allow binding in the subjunctive clause. In sentence (i), the possessive pronoun *-ne* and the personal pronoun *e-* both occur in the embedded subjunctive clause. The verb *geno* governs and case-marks *osiep-ne*, the subject of the lower clause. The possessive pronoun *-ne* either refers to *Ouma* or to *osiep-ne*. Similarly, *-e* refers to the matrix subject, *Ouma* or ‘to his friend’ mentioned in the sentence. The LDA *-e* is bound by *Ouma* which occurs outside the minimal clause or *osiep-ne* which is within the same clause. Therefore, the ambiguous anaphor is in the embedded clause-the subjunctive clause. The third person not mentioned is accounted for by pragmatics. In sentence (ii), *nyiso* assigns the nominative case to *Ouma* and the accusative case to *osiep-ne*. The anaphor *o-* prefixed to the verb *biro*, can either refer to the higher subject, *Ouma* or the lower subject *osiep-ne*, it is thus bound by either *Ouma*

or *osiep-ne*, hence causing ambiguity. The anaphor *o-* is bound by *Ouma* the matrix subject outside the minimal clause, whereas the anaphor *-ne* is bound by the antecedent *Ouma* within the minimal clause. The ambiguous anaphor *o-* is in the subjunctive complement clause.

In sentence (iii) the LDA *o-* is ambiguous in that it either refers to *Ouma* or someone else not in the sentence. The anaphor *o-* is case-marked by the verb *no-wacho* ‘said’ which is in the matrix clause. Therefore, the verb *no-wacho* governs the anaphor which is also the subject of the lower clause, the subjunctive clause. This is in line with Benedicto (1991) who states that lexical heads such as the verb *no-wacho* are governors. *Ouma* also binds *o-* outside the minimal clause. The ambiguous anaphor is in the subjunctive clause. Pragmatically, *Ouma* is aware of the other person not mentioned in the sentence. The observation here is that the relationship between the anaphors and the antecedents is that of coreference.

4.3.3 Ambiguity in the Dholuo Adjunct clause

Dholuo allows expressions with LDAs embedded in adjunct clauses. In data set 13, the study analyzes ambiguity in the adjunct clause.

Data set 13

- i. *Ouma_i no-duog-o dala [CP ka ne o_{i/j}-se kaw-o pesa-ne_{i/j}].*

Ouma PST 3SG-return-PROG home [when 3SG-PERF-take-PROG money-POSS]

‘Ouma_i returned home [CP when he_{i/j} had taken his_{i/j} money].’

- ii. *Ouma_i ne o-pak-o osiep-ne_{i/j} [CP ka ok o-nen-e_{i/j}].*

Ouma PST 3SG-praise-PROG friend-POSS [with NEG 3SG-see-him]

‘Ouma_i praised his friend_{i/j} [CP without seeing him_{i/j}].’

iii. *Otieno_i ne o-chak-o tich* [_{CP} *mondo o-kan pesa ne owad-gi_{i/j}*].

Otieno PST 3SG-start-PROG work [INF 3SG-save money for brother-POSS]

‘Otieno_i started work [_{CP} to save money for his_{i/j} brother].’

According to Benedicto (1991), an anaphoric element in the adjunct clause can be bound by a subject in the matrix clause. The Dholuo data have antecedents in the matrix clause, whereas the anaphors are in the embedded clause. In (i), *o-* and *-ne* are in the adjunct clause and can refer to *Ouma* or to an individual outside the sentence. This makes the anaphors ambiguous since the two are not specific on whether they refer to *Ouma* only or to some other person external to the conversation. Further, *Ouma* binds the anaphors outside the minimal clause. However, *o-* binds *-ne* within the same clause. It is also possible that *Ouma* is aware of the other person not mentioned in the sentence. Therefore, pragmatics account for the person not mentioned.

Sentence (ii) has the element *-e* which is the LDA in the construction either referring to *Ouma*, the matrix subject or his friend which is the lower subject, hence *-e* is ambiguous. The LDA *-e* co-refers with *Ouma*, the matrix subject as well as *osiep-ne*. It is observed that *-o* and *-ne* occur in the embedded adjunct finite clause in (i) and *-e* in the embedded adjunct non-finite clause as in (ii). However, the anaphor *-ne* in (ii) is not an LDA but it is ambiguous. It violates Principle B of the Binding theory which requires that a pronominal anaphor should be free within the minimal clause. In this case the anaphor either refers to *Ouma* or somebody else. This is possible when speaking in context by referring to a different person known to *Ouma* and his friend.

In sentence (iii), the anaphor *-gi* is ambiguous since it refers to either *Otieno* or to somebody else not mentioned in the sentence. *Otieno* binds the anaphor *-gi* outside the governing category. The

subject antecedent binds the anaphor outside the governing category. The other person not mentioned in the sentence is accounted for by pragmatics whereby it is *Otieno* who is aware of the person not mentioned.

4.3.4 Ambiguity in the Dholuo Causative Construction

Below are sentences which prove that LDAs occur in the causative clause in Dholuo. The expressions in data set 14 are followed by explanations of ambiguity within the causative clause.

Data set 14

- i. *Ouma_i no-wach-o* [_{CP} ni ne *o_{i/j}-ket-o* *Onyango_k mondo o-wuoth-i gi chong-e_{i/j/k}*].

Ouma PST-3SG-say-PROG [that PST-3SG-put-PROG Onyango INF3SG-walk-PROGwith PL-knee-POSS]

* ‘Ouma_i said [_{CP} that he_{i/j} made Onyango_k to walk with his_{i/j/k} knees].’

- ii. *Awino_i ne o-wach-o* [_{CP} ni *Akinyi_jno-mi-yo* *Atieno o-neg-o chuo-re_{i/j/k}*]

‘Awino_i said [_{CP} that Akinyi_j made Atieno_k to kill her_{i/j/k} husband].’

Awino_i no-wach-o [_{CP} ni ne *o-ket-o* *nyamin-gi_{i/j} mo-nind-o e od-e_{i/j}*].

Awino PST-3SG-say-PROG [that PST-3SG put-PROG sister-POSS INF-sleep-PROG PREP house-POSS]

‘Awino_i said [_{CP} that she_i made her_{i/j} sister to sleep in her_{i/j} house].’

Madugu (1985) discusses agentive causative construction in Yoruba and Nupe languages of Nigeria and states that in both languages, the construction is arrived at through embedding of structures. Likewise, in Dholuo, we discuss causative constructions embedded to the matrix causes. Sentence (i) is about *Ouma* reporting that he made *Onyango* walk on his knees. However, the anaphor *o-* indicates that someone else could also have caused *Onyango* to walk on his knees.

The LDA *-e* is also ambiguous because it can refer to *Ouma* causing *Onyango* to walk with *Ouma's* knees, *Ouma* causing *Onyango* to walk with someone else's knees. The ambiguity is realized within the embedded causative clause. It is *Ouma* and *Onyango* who are aware of the third party not mentioned in the sentence. The anaphor co-refers with *Ouma*, the antecedent outside the minimal clause, violating Principle A of the Binding theory. The anaphor also refers to *Onyango* which is within the minimal binding domain, although Principle B states that a pronominal should be free within the binding domain, hence violating this principle of the Binding theory. The verb *wacho*, in the matrix clause case-marks the *o-* in the embedded clause.

In sentence (ii), the anaphor *-e* refers to either *Awino*, the subject antecedent, *Akinyi* the intervening DP or *Atieno* the object antecedent. The anaphor *-e* is bound by the subject antecedent *Awino* outside the minimal clause. Principle A of the Binding theory which requires that the anaphor is bound within the minimal clause is therefore violated. *Akinyi* and *Atieno* bind *-e* within the same clause. The anaphor is embedded within the causative clause. Further, Principle B of the Binding theory stating that a pronominal must be free within the binding domain is not violated since the pronominal anaphor is bound outside the binding domain.

In sentence (iii), there are two anaphors in the causative construction, the anaphors *-gi* and *-e*. *Awino* binds the anaphors outside the local domain. This means that Principle B has not been violated, since it says that the pronominal should be free within the binding domain. The anaphor *-gi* is therefore co-referential with *Awino* making the anaphor ambiguous. The anaphor *-e* as well is bound by *Awino* making it also ambiguous because it also refers to both *Awino* and somebody else not mentioned.

4.3.5 Ambiguity in the Dholuo Tensed Clausal Complement

The sentences in data set 15 explain ambiguity in the tensed clausal complement. The sentences also attest to the fact that such expressions are acceptable in Dholuo.

Data set 15

- i. *Ouma_i paro* [_{CP} *ni o_{i/j}-chay-e_{i/j}*].

Ouma PRES-think [that he-hate-him/her]

‘Ouma_i thinks [_{CP} that he/she_{i/j} hates him/her_{i/j}].’

- ii. *Ouma_i o-ng’eyo* [_{CP} *ni Otieno_j o-chay-e_{i/*j/k}*].

Ouma PRES-3SG-know [that Otieno PRES-3SG-hate-him]

‘Ouma_i knows [_{CP} that Otieno_j hates him_{i/*j/k}].’

- iii. *Ouma_i ne owacho* [_{CP} *ni o_{i/j}-cha-re_{i/j}*].

Ouma PST 3SG-say [that Otieno 3SG-hate-SELF]

‘Ouma_i said [_{CP} that he_{i/j} hates himself_{i/j}].’

According to Ogihara (1996), tense in the matrix clauses are absolute because they take the speech time as reference time while tenses in complement clauses are relative since they are interpreted in the scope of the matrix tense and takes the temporal location of the matrix clause event as reference time. Safir (2008) however notes that the binding of LDAs cannot go past a finite clause boundary unless the complement clause is in the subjunctive. In sentence (i), *-e* is ambiguous since it refers to either the matrix subject *Ouma* or to *o-* within the minimal clause. Both *o-* prefixed to *achaya* representing the anaphor he/she and *-e* suffixed to *achaya* (*achaya*=noun) representing the anaphor him/her are ambiguous because they refer to Ouma and someone else not mentioned in the sentence. The antecedent *Ouma* binds *o-* and *-e* outside the minimal clause, violating Principle A of the Binding theory. The anaphor *o-* is the subject of the

lower clause, the tensed clause and it is case-marked and governed by the verb of the matrix clause *paro*. The other person not mentioned is pragmatically accounted for by the fact that *Ouma* is aware of the person in context.

The anaphor *-e* in (ii) is co-referential with *Ouma* and an individual not mentioned in the sentence, but not *Otieno*. This means that *Otieno* also hates someone else other than *Ouma*. This makes *-e* ambiguous since it can be interpreted in two different ways. If *-e* takes the subject of the minimal clause as the binder, then binding does not take place. This is because, in the minimal clause *-e* should be free, following Binding principle B of the Binding theory. It can only take *Ouma* as the binder. Therefore, the LDA *-e* is bound by the matrix subject. *Otieno*, the subject of the lower clause is also governed and case-marked by the verb *ngeyo* (thinks) which is also the matrix verb. *Otieno* is therefore governed by the matrix verb *ngeyo*. The other person not mentioned in the sentence is known to *Ouma* and *Otieno* making pragmatics to account for him/her.

In sentence (iii), the anaphor *o-* is co-indexed with *-re* in the tensed clause, obeying Principle A of the Binding theory which requires that anaphor is bound within the minimal clause. However, the anaphors co-refer with *Ouma* which is outside the minimal clause. The ambiguities of the anaphors arise as a result of the fact that *Ouma* is referring to himself or to someone else, who is known to *Ouma*. Further, *o-* being the subject of the lower clause is governed by the verb of the matrix clause *wacho* ‘said.’

4.3.6 Ambiguity in the Dholuo Applicative Construction

Dholuo exhibits sentence constructions with anaphors within the applicative clause. Data set 29 provides examples of sentences with applicative clause embedded to the matrix clause, followed by the explanations of the ambiguous anaphors.

Data set 16

- i. *Ouma_i no-wach-o [CP ni ne o_{i/j}-ng'iew-o ne min-gi_{i/j/k} mich].*

Ouma PST-say-PROG that PST-3SG [buy-PROG for NOM-mother-POSS present]

‘Ouma_i said [CP that he_{i/j} bought his_{i/j/k} mother a present].’

- ii. *Ouma_i ne o-ng'e-yo [CP ni Otieno_jo-ng'iew-o ne min-gi_{i/j/k} mich].*

Ouma PST 3SG-know-PROG that Otieno [PST 3SG-buy-PROG for NOM-mother-POSS present]

‘Ouma_i knew [CP that Otieno_j bought his_{i/j} mother a present.]’

- iii. *Awuor_i ne o-wach-o [CP ni ne o_{i/j}-ng'iew-o-ne min-gi_{i/j} mich].*

Awuor PST 3SG-say-PROG that PST 3SG [buy-PROG NOM-mother-POSS present]

‘Awuor_i said [CP that she_{i/j} bought her_{i/j} mother a present].’

- iv. *Ouma_i ne o-wach-o [CP ni Otieno_j ne par-ong'iew-o ne min-gi_{i/j/k} mich].*

Ouma PST 3SG-say-PROG that Otieno PST-IMP think-PROG[buy-PROG for NOM-mother-POSS present]

‘Ouma_i said [CP that Otieno_j thought of buying his_{i/j/k} mother a present].’

The arguments in the applicative constructions are either the instrumental or the benefactive arguments, according to (McGinnis and Gerds, 2004). The anaphor *gi* in (i) refers to *Ouma* the antecedent, which is also the matrix subject and *o-* the lower subject. The element *o-* can also refer to someone else other than *Ouma*. Consequently, *gi* can also refer to someone else not

mentioned in the sentence, but pragmatically known to *Ouma*, hence the ambiguity is realized. *Ouma* is co-referential with *-gi* which is outside the governing category, notably within the applicative clause.

As shown in (ii), *-gi* can either refer to *Ouma*, *Otieno* or someone else not mentioned in the sentence, but known to both *Ouma* and *Otieno*, thus the ambiguity which is realized in the embedded clause. The anaphor *-gi* is bound by *Ouma, Otieno* and the third person accounted for by pragmatics. This therefore shows that the anaphor takes both subjects as its antecedents, hence the ambiguity realized within the applicative clause.

In sentence (iii), *Awuor* the antecedent binds *-gi*. The anaphor *-gi* is ambiguous since *Awuor* could have bought a present to someone else's mother. The anaphor is bound outside the local domain. The ambiguity is realized in the applicative clause, which is also the embedded clause. The anaphor *o-* is within the applicative clause and it is also ambiguous since it either refers to *Awuor* or to someone else buying her mother a present. The person not mentioned is known to *Awuor*.

In sentence (iv), the anaphor *-gi* co-refers with the subject antecedent *Ouma* and the object antecedent *Otieno* and someone else not mentioned in the sentence. The anaphor is also bound outside the minimal clause. The anaphor is therefore ambiguous since it refers to more than one antecedent. The third person not mentioned is known to *Ouma* and *Otieno* in reference to the context of speech (Suleh, 2013). Principle A of the Binding theory, stating that the anaphor must be bound within the minimal clause is violated.

4.3.7 Ambiguity in the Dholuo Small Clause

The sentences in data set 17 are examples of Dholuo expressions showing anaphors within the small clause. The small clause is embedded to the matrix clause.

Data set 17

- i. ? *Ouma_i ne o-nyis-o Otieno_j ni* [_{CP} *japuonj_k o-kaw-e_{i/j}/*_{k/l} ng'at ma jahawi*].

Ouma PST 3SG-tell-PROG Otieno that[teacher PRES 3SG-take-him person REL lucky]

‘Ouma_i told Otieno_j that [_{CP} the teacher_k considers him_{i/j}/*_{k/l} lucky].’

- ii. ? *Ouma_i no-wach-o ni Otieno_j* [_{CP} *o-kaw-o osiep-ne_{i/j} jahawi*].

Ouma PST-3SG-say-PROG that Otieno [_{PRES} 3SG-take-PROG friend-POSS person-lucky]

‘Ouma said that Otieno_j [_{CP} considers his_{i/j} friend lucky].’

- iii. *Ouma_i ne o-yie ni japuonj_j* [_{CP} *oyud-e_i/*_{j/k} gi ketho*].

Ouma PST 3SG-accept that teacher [_{PST} 3SG-get him with mistake]

‘Ouma_i accepted that the teacher_j [_{CP} found him_i/*_{j/k} guilty].’

Stowell (1981) was the first to apply the term ‘small clause.’ Stowell (ibid) argues that a small clause is the maximal projection of its head predicate-category XP. Likewise, Balazs (2012) notes that small clauses are tenseless [NP, XP] structures, where XP is non-verbal. Sentence (i) in Dholuo in data set 17 contains the anaphor *-e* which refers to either *Ouma*, *Otieno* or a third person not mentioned in the sentence. The third person is not indicated in the sentence but is known to both *Ouma* and *Otieno* in discourse. This element is therefore ambiguous. The ambiguity occurs in the small clause. *Ouma* and *Otieno* are outside the minimal binding domain and are antecedents co-referential with *-e*. *Japuonj* on the other hand is within the minimal clause and does not bind *-e*, following Binding Principle B of the Binding theory.

Sentence (ii) contains the reportive verb ‘said’ which reports that either *Ouma* or *Otieno*’s friend is lucky. The anaphor *-ne* in the sentence can either refer to *Ouma* or *Otieno*, making it ambiguous. The anaphor *-ne* is bound by both *Ouma* and *Otieno* outside the minimal clause. Furthermore, the environment where *-ne* is located is an embedded clause, the small clause.

In sentence (iii), *Ouma* c-commands *-e* and co-refers with it. The anaphor can either refer to *Ouma* or to any other person not mentioned, but not to *japuonj*. *Japuonj* is free in the minimal clause. This means that only *Ouma* and the person not mentioned are the ones that bind *-e* outside the minimal clause. The person not mentioned is known to *Ouma* and *Japuonj*. Therefore pragmatics account for this other person. The ambiguity is caused by the fact that the anaphor refers to two NPs, *Ouma* and somebody else not mentioned. The location of the ambiguous anaphor is within the small clause.

4.3.8 Ambiguity in the Dholuo Relative Clause

It is possible to have anaphors in the relative clause in Dholuo expressions. This is shown in the illustrations in data set 18.

Data set 18

- i. *Odongo_j o-ng’ey-o ng’at_j [CP ma no-miy-e_i/*_{j/k} buk].*

Odongo PRES 3SG-know-PROG man [REL PST 3SG-give- him book]

‘Odongo_i knows the man_j [CP who gave him_{i/j/k} a book].’

- ii. *Opiyo_i ne o-mak-o jakuo_j [CP mane o-kwal-o alod-e_i/*_{j/k}].*

Opiyo PST 3SG-catch-PROG thief [REL PST 3SG-steal-PROG vegetable-POSS]

‘Opiyo_i caught the thief_j [CP who stole his_{i/*j/k} vegetables].’

iii. *Onyango_i ne o-nen-o*[*CP ng'at_j mane o-hiny-o-re*_{i/j}*].

Onyango PST 3SG-see-PROG [man REL 3SG-hurt-PROG-SELF]

'Onyango_i saw [*CP* the man_j who hurt himself*_{i/j}].'

Benedicto (1991) discusses relative clauses in Latin and states that LDAs occur in relative clauses in Latin. In the analysis, it is noted that there are relative clauses that are used as defining and non-defining clauses. Similarly, in the analysis, the study uses defining and non-defining relative clauses. Dholuo also differentiates defining from non-defining relative clauses. In sentence (i), *Odongo*, the subject antecedent and *ng'at* the object antecedent bind *-e* outside the minimal clause. The anaphor *-e* co-refers with either *Odongo* the higher subject or *ng'at*, the lower subject and someone else not mentioned. Both subjects antecede and c-command the anaphor *-e*. The other person not mentioned is known to *Odongo*. This person is accounted for pragmatically. Having to refer to the two antecedents and the other one not mentioned makes the LDA ambiguous in that environment, the relative clause.

The illustration given in (ii) shows that the anaphor *-e* is bound by the higher subject *Opiyo*. The lower subject, *jakuo* does not bind *-e* since *jakuo* does not steal his own vegetables. The anaphor *-e* is bound by someone else not mentioned in the sentence. The disjoint reference makes the anaphor ambiguous. *Opiyo* and the other person bind the anaphor outside the minimal clause. The other person not mentioned in the sentence is known to *Opiyo*, therefore this person is catered for by pragmatics. The ambiguity is realized in the relative clause.

In sentence (iii), the anaphor *-re* is bound by the object antecedent *ng'at* and not the subject antecedent *Onyango*. In this case the anaphor is not ambiguous. The antecedent *ng'at* binds the anaphor *-re* in the local domain, obeying Principle A of the Binding theory.

4.3.9 Ambiguity in the Dholuo Adverbial Clause

Following are sentences in Dholuo confirming that there are expressions in the language that exhibit anaphors in the adverbial clause. This is illustrated in data set 19.

Data set 19

- i. *Atieno_i par-o ni Akinyi_j ne o-ndik-o barua [CP kapok o_{i/j/k}-bir-o].*

Atieno PRES-think-PROG that Akinyi PST 3SG-write-PROG letter [before 3SG-PST-come-PROG]

‘Atieno_i thinks that Akinyi_j wrote the letter [CP before she_{i/j/k} came].’

- ii. *Atieno_i ne o-nge-yo ni osigo ne o-yud-i [CP kar-e_{i/j} mar tich].*

Atieno PST 3SG-know-PROG that luggage PST 3SG-find-PROG [place-her for work]

‘Atieno_i knew that the luggage was found [CP at her_{i/j} place of work].’

- iii. *Japuonjre_i ne par-o ni japuonj maduong’_j no-wuok [CP bang’ ka wend-e_{i/j/k} nose-a].*

Student PST-think-PROG that teacher-big PST-3SG-leave [ADV PL-visitor-his/her PERF-go]

‘The student_i thought that the headteacher_j left [CP after his/her_{i/j/k} visitors had gone].’

According to Jurie (2007), adverbials in clause structure can appear in sentence initial, medial and final position. Quirk, Greenbaum, Leech and Svartvik (1985) also posit that the end position of adverbials is the position at the end of a clause following all obligatory clause elements. Likewise, the Dholuo data have adverbials at the final position. In sentence (i) the anaphor *o-* is

co-referential with *Atieno*, the higher subject and *Akinyi*, the lower subject. It is bound by both antecedents *Atieno* and *Akinyi* outside the minimal clause. This causes the anaphor to be ambiguous within the embedded adverbial clause. The anaphor can also refer to a third person not mentioned in the sentence. The third unmentioned person is known to *Atieno* and *Akinyi*.

In sentence (ii), *Atieno* binds *-e* outside the minimal clause, allowing a co-referential relationship between the antecedent and the anaphor. The anaphor *-e* refers to *Atieno* or someone else not mentioned in the sentence, therefore causing the anaphor to be ambiguous. The person not mentioned is known to *Atieno*, therefore accounted for pragmatically.

In sentence (iii), the anaphor *-e* is bound by the subject antecedent *japuonjre* and the object antecedent *japuonj maduong'*, making the anaphor ambiguous. The anaphor is also bound outside the minimal clause, violating Principle A of the Binding theory. The anaphor *-e* also refers to someone else not mentioned in the sentence, but known to both *japuonj* and *japuonj maduong'*, making pragmatics to cater for the third person.

4.3.10 Ambiguity in the Dholuo Locative Preposition

Dholuo exhibits expressions with LDAs occurring within the locative clause. Sentences in data set 20 show that ambiguous LDAs exist in the locative clauses.

Data set 20

- i. *Japuonj_i no-mi-yo Otieno_j mich [CP e dala-gi_{i/j/k}].*

Teacher PST-3SG-give-PROG Otieno gift[LOC home-POSS]

‘The teacher_i gave Otieno_j a gift [CP at his_{i/j/k} home].’

ii. *Onyango_i no-mak-o jakuo_j [CP e bwo kitanda-ne_{i/j/k}].*

Onyango PST-3SG-catch-PROG thief [LOC bed-POSS]

‘Onyango_i caught the thief_j [CP under his_{i/j/k} bed].’

iii. ? *Onyango_i no-wach-o ni ne oi_j-yud-o-re_{i/j}[CP e wi mesa-ne_{i/j}].*

Onyango PST-3SG-say-PROG that PST 3SG-find-PROG-SELF-PREP [LOC head table-POSS]

‘Onyango_i said that he_{i/j} found himself_{i/j} [CP on top of his_{i/j/k} table].’

According to Terzi (2008), locatives are the modifiers of a noun, place, part of a DP, which is the complement of a functional head. They may also be followed directly by the complements appearing in the form of a clitic with genitive case. Similarly, the locatives in the analysis modify nouns within the clauses. The anaphor *-gi* in (i) is co-referential with *Japuonj* and *Otieno* causing the ambiguity. The anaphor violates Principle A and B of the Binding Theory. This is because it is bound outside the minimal clause thereby violating Principle A of the Binding theory. *Japuonj* binds *-gi* outside the minimal clause. *Otieno* also binds *-gi* outside the minimal clause. The anaphor also refers to another person not mentioned in the sentence. The verb *no-mi-yo* governs *Otieno* and assigns nominative case to *Japuonj* and accusative case to *Otieno* as well.

The same scenario is experienced in sentence (ii), where the anaphor *-ne* co-refers with *Onyango* and *jakuo* and a third person not mentioned in the sentence. The third person in sentence (i) and (ii) is accounted for by pragmatics. In sentence (i), *japuonj* and *Otieno* are aware of the third person while in sentence (ii), the third person is known by *Onyango* and *jakuo*.

In sentence (iii), *Onyango* is co-indexed with *o-* and *-re* within the same clause. This obeys Principle A of the Binding theory. However, the anaphors are ambiguous within the minimal clause as a result of the discourse in context. *Onyango* could be referring to someone else other than himself. Further, the anaphor *-ne* co-refers with *Onyango*, *o-* and *-re*, making it ambiguous. The anaphor is also bound outside the local domain.

4.4 Strategies for Resolving Ambiguity

It is observed throughout the literature and in the discussion in sub-sections 4.3.1-4.3.10 that anaphors are generally ambiguous in embedded clauses. The study discussed strategies that help to resolve the ambiguous anaphors. These strategies are discussed in sub-sections 4.4.1 to 4.4.5.

4.4.1 Obligatory Co-reference Strategy

Obligatory co-reference is a property of logophoricity, which refers to special West African pronouns that take the ‘author of discourse’ as antecedent (Butler, 2009). Logophoricity also refers to anaphors that are bound outside the local domain (Clement, 1975) and (Reuland, 2006). Long-distance anaphor is therefore used interchangeably with logophors. One of the strategies used to interpret ambiguous readings is through obligatory co-reference. An anaphor found in a clause embedded under a verb of speech, thought, perception and emotion obligatorily establishes co-reference with the subject of the higher clause (Culy, 1997). The following Dholuo sentences exemplified in data set 21 show the ambiguous anaphors followed by their interpretations.

Data set 21

- i. *Onyango_i no-nyis-o Owino_j [CP ni Ouma_k ok o-her-e_i/_j*/_k/i].*

Onyango PST-3SG-tell-PROG Owino [that Ouma PRES NEG-3SG-like him]

‘Onyango_i told Owino_j [CP that Ouma_k does not like him_{i/j/*_k/l}].’

ii. *Onyango_i no-nyis-o Owino_j [CP ni Ouma_k ok o-her-e_{i/j/*_k/l}].*

‘Onyango_i told Owino_j [CP that Ouma_k does not like him_{i/j/*_k/l}].’

iii. *Onyango_i par-o [CP ni Owino_j o-ng’e-yo ni Ouma_k ok o-her-e_{i/j/*_k/l}]*

Onyango PRES 3SG-think-PROG[that Owino PRES 3SG-know-PROG that Ouma PRES
NEG 3SG-like-him]

‘Onyango_i thinks [CP that Owino_j knows that Ouma_k does not like him_{i/j/*_k/l}].’

iv. *Onyango_i par-o [CP ni Owino_j o-ng’e-yo ni Ouma_k ok oher-e_{i/j/*_k/l}].*

Onyango_i thinks [CP that Owino knows that Ouma does not like him_{i/j/*_k/l}].

v. *Onyango_i par-o [CP ni Owino_j ok o-her-o owad-gi_{i/j/k}]*

Onyango PRES 3SG-think-PROG[that Owino PRESNEG 3SG -like brother-POSS]

‘Onyango_i thinks [CP that Owino_j does not like his_{i/j/k} brother.]’

vi. *Onyango_i par-o [CP ni Owino_j ok o-her-o owad-gi_{i/j/*_k}]*

‘Onyango_i thinks [CP that Owino does not like his_{i/j/*_k} brother]’

vii. *Onyango_i no-wach-o ni Owino_j ne yuak [CP ka o_{i/j/k}-wuok e ot].*

Onyango PST-3SG-say-PROG that Owino PST 3SG-cry[when PST 3SG-leave house]

‘Onyango_i said that Owino_j was crying [CP when he_{i/j/k} left the house].’

viii. *Onyango_i no-wach-o ni Owino_j ne yuak [CP ka o_{i/j/*_k}-wouk e ot].*

‘Onyango_i said that Owino_j was crying [CP when he_{i/j/*_k} left the house].’

In sentence (i) the anaphor –*e* embedded in the subjunctive clause co-refers with the subject of the matrix clause (the higher subject), which is *Onyango* and the intervening subject in the lower clause. The anaphor could also be referring to someone else apart from Onyango and Owino,

hence the ambiguous reading. This use of the pronoun is evidence that expression of point of view is the underlying semantic function of logophoric reference system (Bond, 2006). An utterance is associated with a centre which is a triple consisting of the participants (speaker and addressee), the time and the space of the utterance. *Onyango*, *Owino* and *Ouma* are aware of the other person not mentioned in the sentence. Since the anaphor establishes obligatory co-reference with the subject of the higher clause, sentence (i) should read as (ii). The sentence is thus unambiguously interpreted as *-e* being co-referential with *Onyango* and not *Owino*, *Ouma* or the other person not mentioned since the anaphor obligatorily co-refers with the subject of the higher clause. The anaphor is embedded under a verb of speech (tell). In sentence (i), *Ouma* and *-e* obeys locality condition but they are not co-indexed since Principle B of the Binding theory requires that the Pronoun remains free within the binding domain.

Koopman and Sportiche (1989) also state that an LDA in a clause embedded under a verb of speech, thought, perception and showing emotion obligatorily establishes co-reference with the matrix subject. A similar situation is witnessed in sentence (iii) where the anaphor *-e* co-refers with either *Onyango* or *Owino* and a third person not mentioned. The third person is known to *Owino* and *Onyango* as suggested by Bond (2006) that they are participants. This makes the reading ambiguous. To resolve the ambivalence, obligatory co-reference assists in the interpretation. The anaphor therefore obligatorily co-refers with the subject of the higher clause and not the subject of the lower clause, *Owino*. Sentence (iii) is then read as in (iv). The LDA is notably embedded under the verb of perception. Sentence (v) has an anaphor embedded under a verb of thought. The reading is ambiguous since the anaphor co-refers with either *Onyango* or *Owino*. There is also a third person not mentioned that the anaphor refers to. The person is known

to *Onyango*, *Owino* or the reporter. This tells us that pragmatics takes effect in this situation (Bond, 2006). To interpret the anaphor *-gi* unambiguously, the obligatory co-reference strategy is applied. According to Butler (2009), the anaphor obligatorily establishes coreference with the subject of the higher clause. Therefore *-gi* co-refers with the subject of the higher clause, *Onyango* and not *Owino*, hence the reading in sentence (vi).

Sentence (vii) shows a sentence embedded under a verb showing emotion, which is the verb *yuak* ‘cry.’ The reading of the sentence is ambiguous because *o-* co-refers with both *Onyango*, the subject of the higher clause and *Owino*, the subject of the lower clause and somebody else not mentioned, but known to *Onyango* and *Owino* as suggested by Bond (2006). Obligatory co-reference strategy is applied to help disambiguate the anaphor. The anaphor *o-* therefore obligatorily co-refers with the subject of the higher clause, *Onyango*, making the reading unambiguous as in sentence (viii). In the data provided, the anaphor co-refers with the subject of the higher clause as noted by Butler (2009).

4.4.2 Control Theory

As mentioned earlier in the theoretical framework, sub-section 1.7.3, Control theory is one of the modules of the GB theory. According to Chomsky (1981), it regulates the distribution and interpretation of PRO. PRO is an empty category which is both an anaphor and a pronominal. It has person, number and gender features but lacks the phonological manifestation. PRO remains in ungoverned position (Chomsky, 1981). It is possible to interpret ambiguous LDAs in Dholuo expressions using Control theory. The sentences provided in data set 22 are used to illustrate how the theory works.

Data set 22

i. *Otieno_i ne o-kwa-yo Onyango_j [CP mondo o-bed gi kue gi osiepe-ne/ge_{i/j/k}].*

Otieno PST 3SG-ask-PROG Onyango [INF 3SG-be with peace with PL-friend-POSS]

‘Otieno_i requested Onyango_j [CP to be at peace with his_{i/j/k} friends].’

ii. *Otieno_i ne o-kwa-yo Onyango_j [PRO_j mondo o-bed gi kue gi osiepe-ne/ge].*

‘Otieno_i requested Onyango_j [PRO_j to be at peace with his friends].’

iii. *Onyango_i ne o-yie-ne Owino_j [mondo o-dhi e tije-ne_{i/j/k}].*

Onyango PST 3SG-agree-him Owino [INF 3SG-go in PL-work-POSS]

‘Onyango_i allowed Owino_j [to go on his_{i/j/k} mission].’

iv. *Onyango_i ne o-yie-ne Owino [CP PRO_i mondo o-dhi e tije-ne].*

‘Onyango_i allowed Owino_j [CP PRO_i to go on his mission].’

v. *Onyango_i no-nyis-o Owino_j [CP ni o-nego o_{i/j/k}-som].*

Onyango PST-3SG-tell-PROG Owino [that 3SG PERF-PROG 3SG-read]

‘Onyango_i told Owino_j [CP that he_{i/j/k} should read].’

vi. *Onyango_i no-nyis-o Owino_j [CP PRO_j ni o-nego o-som].*

‘Onyango_i told Owino_j [CP PRO_j to read].’

vii. *Atieno_i no-wach-o ni Akinyi_j o-her-o [CP chuo-re_{i/j/k}]*

Atieno PST-3SG-say-PROG that Akinyi PRES-3SG-love-PROG [husband-her]

‘Atieno_i said that Akinyi_j loves [CP her_{i/j/k} husband].’

viii. *Atieno_i no-wach-o ni Akinyi_j o-her-o [CP PRO_j chuo-re].*

‘Atieno_i said that Akinyi_j loves [CP PRO_j her husband].’

To interpret sentence (i) giving it an unambiguous reading, Control and PRO can be applied.

According to Haegeman (1994), infinitival clauses without overt subjects have a non-overt

subject represented as PRO. PRO is roughly equivalent to a pronoun such as he, she or you. The ambiguity in (i) can be removed by *Onyango*, the object antecedent controlling PRO, therefore giving the sentence an unambiguous reading as shown in sentence (ii). Further still, in Control theory, ambiguous reading can be interpreted by PRO referring to the subject antecedent and not the object antecedent as in (iii). The anaphor refers to *Onyango* the subject antecedent and *Owino* the object antecedent and a third person not mentioned in the sentence. To interpret the sentence and give the anaphor an unambiguous reading, subject-control can be applied (Haegeman, 1994). The Subject, *Onyango* controls the null element PRO. This therefore means that the anaphor refers to *Onyango* and not *Owino*. Sentence (iii) will therefore read as (iv).

Looking at sentence (v), the meaning is ambiguous due to the fact that either the subject or the object can act as an antecedent of *o*- which is the LDA. Huang (1982) states that the ambiguity is as a result of the possibility of the speaker reporting what exactly the subject NP, in this case *Onyango* said to *Owino*, the object antecedent. This could possibly be that *Onyango* himself should study. However, because ‘told’ is an object-control verb, the reading would be, *Onyango* suggesting to *Owino* that he should study. A third person not mentioned, but catered for pragmatically also makes the reading ambiguous. This reading therefore, supports the control theoretic analysis. The sentence will therefore be interpreted as in sentence (vi).

In sentence (vii), *Akinyi* binds the null element PRO and therefore *-re* co-refers with *Akinyi* and not *Atieno*. Stowell (1990) observes that the clausal object controls PRO and the only reading is one in which the object antecedent and the anaphor are co-indexed, in this case *Akinyi* and *-re* are co-indexed. The sentence therefore reads as sentence (viii).

Data set 23 still gives illustrations on how Control theory interpretes ambiguous anaphors in Dholuo.

Data set 23

i. *Akinyi_i ne mor [CP ka o-wuoth-o gi chong-e_{i/j}]*

Akinyi PST happy [INF 3SG-walk-PROG with knees-POSS]

‘Akinyi_i was happy [CP to walk on her_{i/j} knees].’

ii. *Akinyi_i ne mor [CP PRO_i ka o-wuoth-o gi chong-e].*

Akinyi_i was happy [CP PRO_i to walk on her knees].

iii. *Otieno_i par-o [CP juang’-o od-e_{i/j}].*

Otieno PRES 3SG-think-PROG [abandon-PROG house POSS]

‘Otieno_i considers [CP abandoning his_{i/j} family].’

iv. *Otieno_i par-o [CP PRO_i juang’-o od-e].*

Otieno_i considers [CP PRO_i abandoning his family].

v. *Otieno_i ne o-nind-o [CP karit-o pesa-ne_{i/j}].*

Otieno PST-3SG-sleep-PROG [IMP-wait-PROG money-POSS]

‘Otieno_i slept [CP while waiting for his_{i/j} money].’

vi. *Otieno_i ne o-nind-o [CP PRO_i karit-o pesa-ne].*

‘Otieno_i slept [CP PRO_i while waiting for his money].’

vii. *Akinyi_i no-wach-o ni ne o_{i/j}-nyis-e_{i/j}[CP mondo o-a].*

Akinyi PST-3SG-say-PROG that PST 3SG tell-her [INF3SG-go]

‘Akinyi_i said that she_{i/j} told her_{i/j} [CP to leave].’viii)

viii. *Akinyi_i ne owacho ni ne o_i-nyis-e_j [CP PRO_j mondo o-a].*

‘Akinyi_i said that she_i told her_j [CP PRO_j to leave].’

In sentence (i), the anaphor $-e$ is ambiguous since it refers to *Akinyi* and another person not mentioned in the sentence. Haegeman (1994) posits that in such a case, PRO obligatorily refers to the subject, which is *Akinyi*. To disambiguate $-e$, *Akinyi* and PRO (the null element) obligatorily co-refer. This means that $-e$ therefore refers to *Akinyi*. The reading is therefore interpreted as in sentence (ii). This sentence means that it is *Akinyi* and nobody else walking on her knees.

Sentences (iii) and (v) also have ambiguous anaphors. In sentence (iii), the anaphor $-e$ either refers to *Otieno* or someone else not mentioned in the sentence. The person not mentioned is only known to *Otieno* and the person reporting. According to Epstein (1991), PRO can obligatorily refer to the subject of the main clause, in this case it is *Otieno*. It is therefore interpreted to read as sentence (iv), where *Otieno* and PRO co-refer. It is *Otieno* and not any other person considering abandoning his house. In sentence (v), the anaphor $-ne$ refers to either *Otieno* or someone else not mentioned. This person is known to *Otieno* and the person reporting. Bond, (2001) states the participants in the discourse are aware of the person not mentioned. It is therefore interpreted to read as sentence (vi) where *Otieno* and PRO obligatorily corefer.

Sentence (vii) is another example which shows that ambiguous LDA can be interpreted unambiguously using the Control theory. Napoli (1993) states that PRO can obligatorily refer to either the subject or object antecedent. In sentence (vii), to interpret the anaphor, PRO is controlled by the object antecedent $-e$ and not the subject antecedent *Akinyi*. The reading therefore, is that PRO corefers with $-e$ and not *Akinyi*, as illustrated in sentence (viii).

4.4.3 The Subject-orientation Strategy

Subject-orientation is a feature of LDA and according to Giorgi (2004), Principle A of the Binding theory does not explain subject-orientation. In subject-orientation, the only possible antecedent for the anaphor is the subject, as opposed to other arguments such as the object. Data set 24 gives illustrations of ambiguous anaphors and their interpretations.

Data set 24

- i. *Otieno_i ne par-o ni Onyango_j no-wuok [CP ka-pok nyamin-gi_{i/j/k} o-chop-o].*

Otieno PST 3SG think-PROG that Onyango PST 3SG leave [before sister-his PST-3SG-reach-PROG]

‘Otieno_i thought that Onyango_j left [CP before his_{i/j/k} sister arrived].’

- ii. *Otieno_i ne par-o ni Onyango_j no-wuok [CP ka-pok nyamin-gi_{i/*j/*k} o-chop-o].*

‘Otieno_i thought that Onyango_j left [CP before his_{i/*j/k} sister arrived].’

- iii. *Akinyi_i no-nyis-o Adhiambo_j [CP ni od-e_{i/j/k} no-tur].*

Akinyi PST 3SG tell-PROG Adhiambo [that house-POSS PST 3SG break]

‘Akinyi_i told Adhiambo_j [CP that her_{i/j/k} house was broken into].’

- iv. *Akinyi_i no-nyis-o Adhiambo_j [CP ni od-e_{i/*j/*k} no-tur].*

‘Akinyi_i told Adhiambo_j [CP that her_{i/*j/k} house was broken into].’

- v. *Onyango_i luor [CP ni a_j-bi-ro yany-e_{i/*j/k}].*

Onyango PRES 3SG afraid [that 1SG-come-FUT-PROG abuse-him]

‘Onyango_i is afraid [CP that I_j will abuse him_{i/*j/k}].’

- vi. *Onyango_i luor [CP ni a_{j/*j/*k}-bi-ro yany-e_{i/*j/*k}].*

‘Onyango_i is afraid [CP that I_j will abuse him_{i/*j/*k}].’

- vii. *Akinyi_i par-o [CP ni i_j-nyal-o goy-e_{i/*j/k}].*

Akinyi PRES 3SG think-PROG [that 2SG-MOD-PROG beat-her]

‘Akinyi_i thinks [_{CP} that you_j can beat her_{i/*j/k}].’

viii. *Akinyi_i par-o* [_{CP} *ni i_j-nyal-o* *goy-e_{i/*j/*k}*].

‘Akinyi_i thinks [_{CP} that you_j can beat her_{i/*j/*k}].’

In sentence (i), the anaphor ‘his’ refers to either *Otieno*, *Onyango* or a third person unmentioned in the sentence, but known to both *Otieno*, *Onyango* and the person giving the report, causing the ambiguous reading. As suggested by Bond (2006), the third person is catered for by pragmatics in that the participants in the discourse are aware of the person. To interpret the ambiguity so that it can be read unambiguously, consideration is made on the subject-orientation of LDAs where the subject must act as an antecedent. In the sentence, as Strahan (2001) suggests, the anaphor has to skip the first available subject (*Onyango*) and can only refer to the subject of the higher clause *Otieno*. The subject of the lower clause, *Onyango* is not available as an antecedent because the structural syntactic condition for antecedent-hood which is the c-command is fulfilled by both nominals (*Otieno* and *Onyango*). However, only one qualifies as an antecedent (Giorgi, 2004). The reading will therefore be as in sentence (ii).

To give sentence (iii) a reading that is not ambiguous, application of subject-orientation strategy is applied. This gives rise to a reading that makes *-e* co-refer with *Akinyi*. Both the subject and the object c-command the anaphor. The anaphor also corefers with the person not mentioned. The only antecedent that can be picked for the anaphor is the subject and not the object antecedent (Giorgi, 2006). Therefore sentence (iii) would be read as sentence (iv).

Languages such as Chinese experience blocking effect as a property of LDAs in their languages. Blocking effect is a situation where an intervening first or second person prevents the anaphor from being bound by the antecedent of the higher clause (Giorgi, 2007). Dholuo, unlike Chinese or Italian languages does not experience blocking effect as a property of LDA. This is illustrated in sentences (v) and (vii), also interpreted as (vi) and (viii) respectively. In sentence (v), the intervening first person singular *a*-‘I’, does not block the anaphor from referring to the higher subject. However, the anaphor is ambiguous because it is either referring to *Onyango* or to someone else not mentioned in the sentence. The person not mentioned is accounted for by pragmatics. To interpret it unambiguously, subject orientation strategy will apply. In subject orientation, the LDA is co-referential with the subject of the higher clause which is *Onyango* as posited by Strahan (2001) in the study of Norwegian long distance reflexives. Therefore sentence (v) is interpreted as sentence (vi)

In sentence (vii), the intervening nominal is the second person singular *i*-‘you’ which does not block *-e* from referring to *Akinyi*. The anaphor is however ambiguous since it either refers to *Akinyi* or somebody else not mentioned in the conversation. The third person is known to *Akinyi* and the person reporting. Similarly, the subject-orientation strategy is applied to disambiguate the anaphor and gives it an unambiguous reading, therefore, it will be read as sentence (viii).

It is observed that Principle A of the Binding theory does not explain subject orientation. Strahan (2001) states that the Binding conditions, do not set any constraints on the antecedent of the anaphor, so this must be dealt with via some other mechanism. Strahan (ibid), further notes that LDAs are ruled by logophoric principles and is therefore subject oriented.

4.4.4 Emphatic Pronoun Strategy

According to Reinhart and Reuland (1989), emphatic pronoun is one type of anaphor. Cobuild (2001) states that emphatics are pronouns which give special importance to something. Storoshenko (2010) suggests that an emphatic pronoun can be used to disambiguate ambiguous readings. This is in terms of stress placement. Dholuo allows emphatic pronouns in expressions to emphasize some quality of the person being referred to. In the sentences provided in data set 25, it is observed that the ambiguous anaphors are able to receive emphatic pronouns so that they are unambiguously interpreted.

Data set 25.

- i. *Onyango_i o-ng'e-yo [CP ni o_{i/j}-bi-ro lo-yo].*

Onyango 3SG-PRES-know-PROG [that 3SG-FUT-come-PROG win-PROG]

'Onyango_i knows [CP that he_{i/j} will win].'

- ii. *Onyango_i o-ng'e-yo [CP ni en_i owuon_i o_i-bi-ro lo-yo].*

Onyango 3SG-PRES-know-PROG[that he himself 3SG-FUT-come-PROG win-PROG]

'Onyango_i knows [CP that he_i himself_i (he) will win].'

- iii. *Onyango_i o-ng'e-yo [CP ni o_i-bi-ro lo-yo en_i owuon_i].*

Onyango 3SG-PRES-know-PROG[that 3SG-FUT-come-PROG win-PROG he himself]

'Onyango knows [CP that he_i will win he_i himself_i].'

- iv. *Onyango_i owuon_i o-ng'e-yo [CP ni o_i-bi-ro lo-yo].*

Onyango himself 3SG-PRES-know-PROG [that 3SG-FUT-come-PROG win-PROG]

'Onyango_i himself_i knows [CP that he_i will win].'

- v. *Otieno_i wach-o [CP ni o_{i/j}-twang'-o sad-e_{i/j}]*

Otieno 3SG PRES say-PROG [that 3SG-PRES-fix-PROG shirt-his]

‘Otieno_i says [_{CP} that he_{i/j} fixes his_{i/j} shirt].’

v. *Otieno_i owuon_i wach-o* [_{CP} ni en_i owuon_i o-twang’-o sad-e_{i/j}].

Otieno himself_{3SG} PRES-say-PROG [that he himself 3SG-PRES-fix-PROG shirt-his]

‘Otieno_i himself_i says [_{CP} that he_i himself_i fixes his_{i/j} shirt].’

vii. *Otieno_i owuon_i wach-o* [_{CP} ni en_i owuon_i o-twang’-o sad-e_i owuon_i].

Otieno himself 3SG PRES-say-PROG [that he himself 3SG-PRES-fix-PROG shirt-his own]

‘Otieno_i himself_i says [_{CP} that he_i himself_i fixes his own shirt].’

viii. ? *Akinyi_i no-wach-o* [_{CP} ni ne o-nyis-e_{i/j} mondo o-a].

Akinyi PST-3SG-say-PROG [that PST 3SG-tell-her INF3SG-go]

‘Akinyi_i said [_{CP} that she_{i/j} was told to leave].’

ix. ? *Akinyi_i no-wach-o* [_{CP} ni no-nyis-e_i en_i owuon_i ni mondo o-a].

Akinyi PST-3SG-say-PROG [that 3SG himself PST-3SG-tell-her that INF3SG-leave]

‘Akinyi_i said [_{CP} that she_i herself_i was told to leave].’

In sentence (i), the anaphor *o-* corefers with *Onyango* and a person not mentioned. The person not mentioned is known to the reporter of the information and *Onyango*. This makes the anaphor ambiguous. To disambiguate the anaphor, *o-* has to receive an emphatic pronoun, giving rise to a reading of the nature shown in (ii). The emphatic can either precede the anaphor or come after it, at the end of the sentence as illustrated in (iii). It is important to note that the anaphor cliticizes the verb *come* (*biro*). It cannot therefore disappear even after receiving the emphatic since it is the LDA that co-refers with the subject of the higher clause, *Onyango*. Storoshenko (2010) also posits that emphatics can appear in more than one position. It is further noted that the use of the emphatic self pronoun occurs immediately following the antecedent. This is illustrated in sentence (iv). The self pronoun is c-commanded by a subject antecedent.

In sentence (v), *Otieno* antecedes the anaphors *o-* and *-e* which are embedded within the subjunctive clause. The anaphors refer to *Otieno* and a person not mentioned, but known to *Otieno* and the addressor. This makes the sentence ambiguous. To give the sentence an unambiguous reading, the self anaphor will be slotted immediately after the subject of the higher clause, *Otieno*, and another one slotted after the object antecedent, *o-*. The sentence therefore reads as sentence (vi). The anaphor *-e* remains ambiguous because it has not been disambiguated. To give it an unambiguous reading, the reflexive *owuon* has to be slotted immediately after *sad-e*. This finally gives rise to a new sentence which tells us that the shirt, which is *Otieno*'s is made by nobody apart from *Otieno* himself. The sentence will then read as in (vii). This is in line with the discussion done by Storoshenko (2010).

The anaphor *-e* is coreferential with Akinyi and another person who is known to Akinyi and the person reporting. This other person is catered for pragmatically. To disambiguate the ambiguous anaphor on sentence (viii), the emphatic pronoun should come immediately after the anaphor. The reading therefore indicates that it is *Akinyi* and not anybody else that was told to leave. The illustration is shown in sentence (ix).

Data set 26 presents sentences with ambiguous anaphors preceding the antecedents. The ambiguities of the anaphors are interpreted using the emphatic pronoun.

Data set 26.

- i. ? *Bedo ni ne o_{i/j}-lew-o [CP ne o-kuod-o wi japuonji].*

Because that PST 3SG-late-PROG [PST 3SG embarrass-PROG head teacher]

‘That he_{i/j} came late [CP embarrassed the teacher_i].’

- ii. ? *Bedo ni ne o_{i/j}-dhaw-o [CP ne o-mi-yo ji o-ring-o japuonji]*

Because that PST 3SG-quarrel-PROG [PST3SG-make-PROG people PST 3PL run-PROG teacher]

‘That he_i/j quarrelled [_{CP} made people run away from the teacher_i].’

iii. ? *Bedo ni ne o_i/*_j-lew-o* [_{CP} *ne o-kuod-o wi japuon_i owuon_i*].

Because that PST 3SG-late-PROG [PST 3SG embarrass-PROG head teacher himself]

‘That $he_i/*_j$ came late [_{CP} embarrassed the teacher_i himself_i].’

iv. ? *Bedo ni ne o_i/*_j-dhaw-o* [_{CP} *ne o-mi-yo ji o-ring-o japuon_i owuon_i*].

Because that PST 3SG-quarrel-PROG [PST 3PL-make-PROG people run teacher himself]

‘That $he_i/*_j$ quarreled [_{CP} made people run away from the teacher_i himself_i].’

The anaphor as observed in sentences (i) and (ii) comes before the subject. This means that the c-command principle is not followed in this case. Dholuo therefore can allow clauses to be subjects without head nouns. This phenomenon is a case of backward anaphora (Safir, 2008). Backward anaphora is a situation whereby the anaphor precedes the antecedent. The sentences are ambiguous since the pronominal anaphor can either refer to *japuonj* or to any other person not mentioned in (i) and (ii). The other person mentioned is known to *japuonj* and the person reporting. This, therefore means that pragmatics account for the person not mentioned in (i) and (ii) in that the arguments in the sentences are aware of the person. To interpret the sentences and give them unambiguous readings, the emphatic pronoun is provided immediately after the noun phrases. The sentences will therefore have a reading with an emphatic pronoun after the noun phrase as in (iii) and (iv).

The emphatic pronoun can also be used in the interpretation of ambiguous anaphors in null subject constructions in Dholuo. Radford (1997) states that in null subject languages (NSLs), the

finite verbs (verbs which carry tense such as present or past tense) such as ‘talks’ licenses either an overt subject like ‘John’ or a covert subject. However, in a non-null subject language such as English, finite verbs only license overt subjects. Rizzi (1982) observes that non-referential NSLs (partial NSLs) never have obligatory null subjects, while referential (or consistent) NSLs typically do, in some contexts. The sentences in data set 27 have no overt subject antecedents that the anaphors refer to.

Data set 27.

i. *Ng’a-ma ne o-wuok oko mo-kwong-o_i [CP ne o-ting’-o buge-ne_{i/j}].*

Who- that PST-3SG-go out that-3SG-first-FV[PST 3SG-carry-PROG books-POSS]

‘The one who went out first_i [CP carried his/her_{i/j} books].’

ii. *Ng’a-ma ne o-wuok oko mo-kwong-o_i [CP ne o-ting’-o buge-ne_i owuon_i].*

Who-that PST 3SG-go out that-3SG-first-FV[PST 3SG-carry-PROG PL-book-POSS EMPH]

‘The one who went out first_i [CP carried his/her_i own_i books].’

iii. *Mana jo-ma o-luong-i_i [CP e-ma nyal-o ting’-o ofuke-g_{i/i}].*

Only those-that 3PL-call-PST [REL MOD-PROG carry-PROG3PL-bag-POSS]

‘Only those who are called_i [CP can carry their_{i/j} bags].’

iv. *Mana jo-ma o-luong-i_i [CP e-ma nyal-o ting’-o ofuke-g_i giwegi_i].*

Only those-that 3PL-call-PST [REL MOD-PROG carry-PROG3PL-bag-POSS EMPH]

‘Only those who are called_i [CP can carry their_i own_i bags].’

The antecedent in (i) is covert in the sense that it is the whole phrase “*Ng’a-ma ne owuok oko mokwongo.*” This phrase antecedes the anaphor *-ne* which is also ambiguous. This is due to the fact that it can refer to “*Ng’a-ma ne owuok oko mokwongo*” carrying his own books or carrying some other person’s books. This other person must be known to the person who went out first.

To give the anaphor an unambiguous reading, an emphatic is placed after the anaphor as illustrated in (ii).

Similarly, sentence (iii) has a non-overt antecedent which is co-referential with the anaphor–*gi*.

The phrase “*Mana joma oluongi*” antecedes the anaphor–*gi*. The anaphor is ambiguous and has two possible readings. The reading is that “*Mana joma oluongi*” can carry their own bags or they can carry other people’s bags. The people not mentioned in the sentence are known to “*joma oluongi*” and the reporter of the information. To interpret the sentence unambiguously, an emphatic pronoun is provided after the LDA, hence the interpretation in sentence (iv).

Dholuo exhibits and allows co-reference in imperatives as illustrated in data set 28. The ambiguous anaphors in the imperatives can be unambiguously read using emphatic pronouns.

Okoth-Okombo (1997) argues that imperatives in Dholuo are characterized by two structural features. These include the absence of an overt subject and the presence of a main verb in the active voice. Okoth-Okombo (1997) further states that imperatives generally have their communicative functions which include giving commands, making requests or challenging someone to do something.

Data set 28.

- i. *Par ni Onyango_i o-ng’e-yo*[*CP ni o_i/j-tuo*].

IMP that Onyango PRES 3SG-know-PROG [that PRES3SG-sick]

‘Imagine that Onyango_i knows [_{CP} that he_i/j is sick].’

- ii. *Par ni Onyango_i owuon_i o-ng’e-yo* [*CP ni o_i-tuo*].

IMP that Onyango REFL [PRES3SG-know-PROG that PRES 3SG-sick]

‘Imagine Onyango_i himself_i knows [CP that he_i is sick].’

or

iii. *Par ni Onyango_i o-ng’e-yo [CP ni en_i owuon_i otuo].*

IMP that Onyango PRES-3SG-know-PROG [that 3SG REFL PRES3SG-sick]

‘Imagine Onyango_i knows [CP that he_i himself_i is sick].’

iv. *Par ni Onyango_i o-ng’e-yo [CP ni ne o-yie-ne_{i/j} mondo o-chiem].*

IMP that Onyango PRES 3SG-know-PROG [that PST 3SG-allow-him INF3SG-eat]

‘Imagine that Onyango_i knows [CP that he_{i/j} was allowed to eat].’

v. *Par ni Onyango_i owuon_i o-ng’e-yo [CP ni ne o-yie-ne mondo o_i-chiem].*

IMP that Onyango REFL PRES 3SG-know-PROG [that PST 3SG-allow-him to 3SG-eat]

‘Imagine that Onyango_i himself_i knows [CP that he_i was allowed to eat].’

or

vi. *Par ni Onyango_i o-nge-yo [CP ni ne o-yie-ne en_i owuon_i mondo o_i-chiem].*

IMP that Onyango PRES 3SG-know-PROG [that PST 3SG-allow-him he REFL INF 3SG-eat]

‘Imagine that Onyango_i knows [CP that he_i himself_i was allowed to eat].’

To interpret the imperatives and obtain an unambiguous reading, an emphatic is used and placed after the NP *Onyango* or after the anaphor. The emphatic reading of sentence (i) is interpreted as (ii) or (iii). Likewise, sentence (iv) also reads as sentences (v) or (vi) after interpretation.

This analysis follows Storoshenko’s (2010) observation in which he states that emphatics can appear in more than one position. In this instance, the emphatics come either after the NP *Onyango* or after the anaphor *en*.

4.4.5 The R-Expression Strategy

According to Chomsky (1981), Principle C of the Binding sub-theory requires that r-expressions which are names which must be free in the binding domains. An r-expression can be used as a strategy to disambiguate an ambiguous reading (Dimitriadis & Everaert, 2002). This is possible by slotting a name instead of the anaphor. This determines the context in which the activity took place. LDAs embedded in the locative clauses can be interpreted using the r-expressions as indicated in data set 29.

Data set 29.

i. *Japuonj_i ne o-chiw-o mich ne Otieno_j [CP e dala-gi_{i/j/k}].*

Teacher PST 3SG-give-PROG gift INF Otieno [LOC home-POSS]

‘The teacher_i gave Otieno_j a gift [CP at his_{i/j/k} home].’

ii. *Japuonj ne o-chiw-o mich ne Otieno [CP e dala Otieno].*

Teacher PST 3SG-give-PROG gift INF Otieno [LOC home Otieno]

‘The teacher gave a gift to Otieno [CP at Otieno’s home].’

or

iii. *Japuonj ne o-chiw-o mich ne Otieno [CP e dala Japuonj].*

Teacher PST 3SG-give-PROG gift INF Otieno [LOC home teacher]

‘The teacher gave a gift to Otieno [CP at the teacher’s home].’

or

iv. *Japuonj ne o-chiw-o mich ne Otieno [CP e dala gi Okumu].*

Teacher PST 3SG-give-PROG gift INF Otieno [LOC home Okumu]

‘The teacher gave a gift to Otieno [CP at Okumu’s home].’

v. *Onyango_i no-mak-o jakuo_j [CP e bwo kitanda-ne_{i/j/k}].*

Onyango PST-3SG-Catch-PROG thief [LOC bed-POSS]

‘Onyango_i caught the thief_j [_{CP} under his_{i/j/k}bed].’

vi). *Onyango no-mak-o jakuo* [_{CP} e bwo kitanda Onyango].

Onyango PST-3SG-catch-PROG thief [LOC bed Onyango]

‘Onyango caught the thief [_{CP} under Onyango’s bed].’

or

vii). *Onyango no-mak-o jakuo* [_{CP} e bwo kitanda jakuono].

Onyango PST-3SG-catch-PROG thief [LOC bed thief-DEM]

‘Onyango caught the thief [_{CP} under the thief’s bed].’

or

viii). *Onyango no-mak-o jakuo* [_{CP} e bwo kitanda Owino].

Onyango PST-3SG-catch-PROG thief [LOC bed Owino]

‘Onyango caught the thief [_{CP} under Owino’s bed].’

ix). *Japuonj_i no-kow-o wendo_j* [_{CP} e dala-gi/ne_{i/j/k}].

Teacher PST-3SG-escort-PROG visitor [LOC home-POSS]

The teacher_i escorted the visitor_j [_{CP} to his/their home_{i/j/k}]

x). ? *Japuonj no-kow-o wendo* [_{CP} e dala gi wendo]

Teacher PST-3SG-escort-PROG visitor [LOC home POSS visitor]

The teacher escorted the visitor [_{CP} to the visitor’s home]

Or

xi). ? *Japuonj no-kow-o wendo* [_{CP} e dala gi japuonj].

Teacher PST-3SG-escort-PROG visitor [LOC home teacher]

The teacher escorted the visitor [_{CP} to the teacher’s home].

Or

xii. *Japuonj no-kow-o wendo* [_{CP} *e dala-gi Akinyi*].

Teacher PST-3SG-escort-PROG visitor [_{CP} LOC home POSS Akinyi]

The teacher escorted the visitor [_{CP} to Akinyi's home].

The anaphor in sentence (i) can refer to *Japuonj*, *Otieno* or a third party not mentioned but is known to *japuonj*, *Otieno* and the person reporting. Sentence (i) can, therefore, be interpreted as sentence (ii), (iii) or (iv), where the anaphor *-gi* can be replaced with the name *Otieno*, *Japuonj* or the third person who in this case, is named *Okumu* to interpret the ambiguity. The anaphor in sentence (v) refers to *Onyango*, *jakuo* and a third person not mentioned in the sentence but one known to the reporter, *Onyango* and *jakuo*. The sentence can be interpreted as in (vi), (vii) or (viii). The anaphor *-ne* is replaced with the name *Onyango*, *Jakuo-no* or *Owino*. *Owino* in this case is the third person. The R-expression that disambiguates the anaphor comes last in the sentence.

In sentence (ix), the anaphor *-ne/gi* is long-distance bound within the adverbial clause. It is ambiguous either referring to *japuonj*, *wendo* or someone else not mentioned in the sentence, but is known to *japuonj* and *wendo*. The ambiguous anaphor can be interpreted as in sentence (x), (xi) or (xii). This means that the anaphor can either be interpreted to refer to *japuonj*, *wendo* or *Akinyi*. *Akinyi* is catered for by pragmatics and not syntax.

4.5 Conclusion

This chapter has provided a discussion of the findings of Dholuo LDAs with particular reference to the applicability of the GB Theory to its analysis. The chapter has generally described and

then analyzed the data using sub-theories of Government, Binding and Control, and Case theory, laying emphasis on the establishment of the importance and relevance to the modules of the GB theory to Dholuo data. Furthermore, the chapter has dwelt on the domains in which LDAs are realized, the domains in which the LDAs are ambiguous in Dholuo and an explanation on the strategies through which ambiguous elements are interpreted. Like any other natural language, Dholuo anaphors can be explained using the GB theory (Chomsky, 1981). In the ambiguous anaphors, there is the unmentioned party who can only be explained by pragmatics. In this instance, it is noted that the unmentioned party is known to the people mentioned in the sentence and to the person giving the report. The LDAs are bound outside the local domain and they corefer with the antecedents and are not coindexed since they are not within the same clause. This brings us to the conclusion that the ambiguous LDAs in Dholuo may not be interpreted purely by syntax but also by pragmatics. Chapter 5, which follows, contains the summary, conclusions and recommendations of the thesis.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter comprises four sections namely: summary, conclusions, recommendations and suggestions for further research.

5.1 Introduction

There is a presentation of an overview of the study as a whole and conclusions basically based on the findings. The organization of this chapter is as follows. The summary of the findings of this study will be in section 5.2 whereas section 5.3 will focus on conclusions. Section 5.4 will highlight on the recommendations that arise from the findings and finally, section 5.5 focuses on suggestions for further research.

5.2 Summary of Findings

This study set out to analyze Dholuo long-distance anaphora data and to determine the extent to which the modules of GB theory are adequate in the analysis of the data. The study was guided by four objectives.

The first objective was to describe the syntactic domains in which long-distance anaphors occur in Dholuo. It was established in the study that LDAs exist in several syntactic domains in Dholuo. They occur in embedded clauses. The clauses in which the LDAs occur in Dholuo include the non-finite clause, the subjunctive clause, the adjunct clause, the causative clause as well as the tensed clausal complement. The other clauses in which LDAs are realized are the applicative clause, the small clause, the relative clause, the adverbial clause and the locative prepositions. It was established in this section that the LDAs and their antecedents' relationship is one of coreference rather than one of coindexing. This is due to the fact that the anaphors are

bound outside the minimal domain. The LDAs outside the minimal clause are bound by discourse. This means that they are not purely bound by syntax.

The second objective was to determine the syntactic domains in which long-distance anaphors are ambiguous in Dholuo. Through the application of the GB Theory, it was observed that the domains in which LDAs are ambiguous in Dholuo are quite a number. It was evident that LDAs in Dholuo are non-clause bounded. This means that they occur outside the minimal clauses. The ambiguous elements are realized in the non-finite complement clause and the subjunctive clause. Other domains include the adjunct clause, tensed clausal complement, applicative clause, the small clause, the relative clause, the adverbial clause and the locative prepositions. It was observed that the ambiguity of the anaphors was caused by more than one antecedent referring to the same anaphor. There was also the unmentioned person in the sentence. The unmentioned third party is known by the other people named and the person reporting. It is therefore concluded that pragmatics cater for this unmentioned person.

The third objective discussed the strategies through which ambiguous elements are disambiguated. Several strategies came into play to disambiguate the ambiguous anaphors giving them unambiguous readings. The strategies used included obligatory co-reference, Control theory, and subject-orientation strategy. Further still, the other strategies that were employed included the emphatic pronoun strategy and the use of R-expressions. It was observed that obligatory coreference and subject orientation are features of LDA whereas emphatic pronoun is a type of LDA. Since the relationship between LDA and the antecedent is that of coreference, and coreference is a resolve in the discourse part of grammar, we therefore conclude that

pragmatics plays a part in disambiguating ambiguous LDAs in Dholuo. Control theory and R-expression were also strategies used to disambiguate ambiguous anaphors. Control theory is a sub-theory of the GB theory of syntax whereas R-expression is Condition C of the Binding sub-theory of syntax. This therefore shows that syntax also has a role in disambiguating the ambiguous LDAs in Dholuo.

5.3 Conclusion

Using available data collected from respondents, the study tested the occurrence of Dholuo LDAs in different domains, the domains where the LDAs are ambiguous and the disambiguation of ambiguous LDAs in the embedded clauses applying the four modules of GB theory, the Government theory, Binding theory, Case theory and Control theory.

In line with the findings of the study, the following conclusions were drawn. It emerged that Dholuo allows the occurrence of LDAs in a variety of syntactic domains. It was also observed that Dholuo LDAs do not occur in isolation, they cliticize onto the verbs, adjectives and nouns. It was also noted that the anaphors exist in clauses embedded to the main clauses. Furthermore, the LDAs occur outside the minimal clauses where they co-refer with the subjects of the matrix clauses. The study focused on anaphors and antecedents located in the same sentence, which is intrasentential.

The second objective of the study focused on the determination of the syntactic domains in which Dholuo LDAs are ambiguous. It was established that there are a number of syntactic domains in which LDAs are ambiguous. The anaphors are bound outside the local domain, hence

the name long-distance anaphors. It was observed that the sentences used in the analysis contain names of people as antecedents. The study established that the ambiguity of the LDAs was as a result of the anaphors carrying more than one meaning. The ambiguous anaphor also has a third party not mentioned in the sentence. This unmentioned person is known to the speaker and the arguments mentioned in the sentence. This brought us to the conclusion that pragmatics accounts for the unmentioned person. It was also noted that the relationship between the antecedents and the LDAs was that of coreference, instead of co-indexation.

Lastly, the strategies through which ambiguous anaphors are interpreted were exploited. It was established that ambiguous anaphors in Dholuo could be disambiguated using a variety of strategies. Worth noting was that features of the LDA such as obligatory co-reference and subject-orientation were employed as strategies for interpreting ambiguous LDAs. Using obligatory co-reference, the anaphor obligatorily establishes co-reference with the subject of the higher clause. Subject-orientation strategy was also used to interpret LDAs unambiguously. It was observed that the LDA skips the first available subject (the object antecedent) and only refers to the subject antecedent. In this case, the LDAs obligatorily co-refer with subjects of the matrix clauses. One of the modules of the GB Theory, the Control theory was also used to disambiguate ambiguous anaphors.

Emphatic pronoun, one type of LDA, also provided interpretations for ambiguous LDAs. To interpret an ambiguous anaphor using the emphatic pronoun, it was observed that the pronoun either comes after the anaphor or after the subject or object antecedent. Ambiguous anaphors in null-subject constructions or non-overt subjects and imperatives were also interpreted using the

emphatic pronoun. It was however noted that some null-subject expressions are cases of backward anaphora. This means that they do not follow the c-command principle, but still they are able to be interpreted using the emphatic pronouns. Finally, it was noted that through the introduction of a name, an ambiguous reading was interpreted through the application of R-expression.

5.4 Recommendations

The first objective of the study discussed ten domains where LDAs occur in Dholuo sentences. These included the non-finite, the subjunctive, the adjunct, the causative, the tensed clausal complement, the applicative, the small clause, the relative, the adverbial and the locative preposition clauses. The study therefore recommends that other domains where LDAs are realized in Dholuo such as the indicative clause and the finite clause should be taken up for study.

The second objective of the study analysed ten domains in which LDAs are ambiguous in Dholuo. It was noted that the domains where the LDAs were realized are the same domains where the ambiguity of anaphors were realized. The study recommends that a study be conducted to find out whether ambiguous anaphors can be realized in emedded indicative and finite clauses in Dholuo.

The third objective of the study discussed the strategies through which ambiguous anaphors were disambiguated in Dholuo. The strategies employed were obligatory coreference, a feature of LDA, Control theory, a sub-theory of the GB theory, the subject-orientation strategy, also a

feature of LDA, emphatic pronoun, a type of LDA and r-expression, one of the principles of the Binding sub-theory of the GB theory. The study recommends that a research be undertaken to find other strategies that can disambiguate anaphors within the GB theory.

5.5 Suggestions for further research

This study is based on ambiguous LDAs in Dholuo and how to interpret them within the GB theory of Chomsky (1981). In 1995, Chomsky considered that the constraints of the GB theory can be reformulated in minimalist terms. It is suggested that a study of Dholuo LDA should be undertaken within the Minimalist Program (Chomsky, 1995).

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APPENDICES

**APPENDIX A
ANAPHORA TYPOLOGY QUESTIONNAIRE**

Adapted from Safir (2008)

Questionnaire response for Dholuo language.

PART 1: GENERAL INFORMATION

The following questionnaire will be administered in written to informants of Dunga village, Kisumu town.

Background Information

Year of birth.....

Sex.....

Residence.....

PART 2: Write Dholuo sentences with pronouns or reflexives (anaphors) in every section.

a) Anaphors in the non-finite clause

1

2

3

4

b) Anaphors in the subjunctive clause

1

2

3

4

c) Anaphors in the adjunct clause

1

2

3

4

d) Anaphors in the causative construction.

1

2

3

4

e) Anaphors in the Dholuo tensed clausal complement.

1

2

3

4

f) Anaphors in the applicative construction.

1

2

3

4

g) Anaphors in the Dholuo small clause

1

2

3

4

h) Anaphors in the Dholuo relative clause.

1

2

3

4

i) Anaphors in the adverbial clause.

1

2

3

4

j) Anaphors in the locative preposition.

1

2

3

4

k) Anaphors in constructions with non-overt subjects.

1

2

3

4

APPENDIX B

A completed sample of the Questionnaire.

a) Anaphors in the non-finite clause

1. Ouma dwa-ro-ni mondo osiep-ne o-yud mich.
2. Otieno no-kwa-yo Ouma ni o-miye buk.
3. Akinyi no-par-o ne nyamin-gi ni mondo o-kaw law-e.
4. Ouma geno neno wuongi.
5. Otieno nokwayo Onyango mondo obed gi kue gi osiepene/ge.
6. Onyango ne oyie mondo odhi e tijene.
7. Onyango noyiene Otieno mondo odhi e tijene.
8. Otieno paro juang'o odgi.
9. Akinyi ne mor ka owuotho gi chonge.
10. Otieno paro juang'o ode.

b) Anaphors in the subjunctive clause

1. Onyango ne paro ni otieno ne dware tuome.
2. Onyango geno ni Otieno biro miye pesa.
3. Onyango ne paro ni Otieno ne ohinyore gi kidi.
4. Ouma geno ni osiepne biro lime
5. Ouma nonyiso osiepne ni obiro loyo e piem.
6. Ouma nowacho ni ne oluor.
7. Onyango nonyiso Owino ni Ouma ok ohere.
8. Onyango paro ni Owino ong'eyo ni Ouma ok ohere.
9. Onyango nonyiso Owino ni onego osom.
10. Atieno nowacho ni Akinyi ohero chuore.
11. Onyango paro ni Owino ok ohero owadgi.
12. Akinyi nowacho ni ne onyise mondo oa.
13. Akinyi nonyiso Adhiambo ni ode notur.
14. Onyango luor ni abiro yanye.
15. Akinyi paro ni inyalo goye.
16. Onyango ongeyo ni obiro loyo.
17. Otieno wacho ni otwang'o sade.

c) Anaphors in the adjunct clause

1. Ka ne osewuoyo gi galamoro to Otieno noa.
2. Otieno notho kapok owuoyo gi wuode.
3. Otieno noturo tiende ka nong'ado ndara.
4. Ouma noduogo dala ka ne osekawo pesane.
5. Ouma ne opakosiepne ka ok onene.
6. Otieno ne ochako tich mondo okan pesa ne owadgi.

d) Anaphors in the causative construction.

1. Awino ne owacho ni Akinyi nomiyo Atieno onego chuore.
2. Awino nowacho ni Atieno nokete momadho lachne.
3. Awino nowacho ni ne oketo nyamingi monindo e ode.
4. Ouma nowacho ni ne oketo Onyango mondo owuothi gi change.

e) Anaphors in the Dholuo tensed clausal complement.

1. Okinyi ong'eyo ni Otieno nowacho ni oratego.
2. Okinyi paro ni oriek.
3. Okinyi ong'eyo ni ne oyueyo mesa kende.
4. Ouma paro ni ochaye.
5. Ouma ong'eyo ni Otieno ochaye.
6. Ouma nowacho ni ochare.

f) Anaphors in the applicative clause.

1. Ouma nong'eyo ni Otieno nong'iewone mich.
2. Awuor nongeyo ni ne ongiewone mingi mich.
3. Awuor nowacho ni ne ogero ne mingi ot.
4. Ouma nowacho ni ne ong'iewo ne mingi mich.
5. Ouma ne ong'eyo ni Otieno ong'iewo ne mingi mich.
6. Awuor ne owacho ni ne ong'iewo ne mingi mich.
7. Ouma ne owacho no Otieno ne paro ng'iewo ne mingi mich.

g) Anaphors in the Dholuo small clause

1. Ochieng' okawo babagi kaka japuonj.
2. Otieno oyudo osiepne ka tije tek.

3. Otieno oyudo wuode ka otho.
4. Ouma ne onyiso Otieno ni japuonj okawe ng'at ma jahawi.
5. Ouma ne owacho ni Otieno okawo osiepne jahawi.
6. Ouma ne oyie ni japuonj oyude gi ketho.

h) Anaphors in the Dholuo relative clause.

1. Japuonj ne ok okumo wuoyi mane okwalo pesane.
2. Onyango ne oneno ng'at mane ogoye.
3. Onyango ne oneno ng'at mane ohinyore.
4. Odongo ong'eyo ng'at ma nomiye buk.
5. Opiyo ne omako jakuo mane okwalo alode.

i) Anaphors in the adverbial clause.

1. Japuonjre ne paro ni japuonj maduong' nowuok bang' ka wende nose a.
2. Otieno nowacho ni Onyango nochopo ka osiepne pok oluongo nying ji.
3. Otieno ne owacho ni ne opakore kapok wende obiro.
4. Atieno paro ni Akinyi ne ondiko barua kapok obiro.
5. Atieno ne ong'eyo ni osigo ne oyudi kare mar tich.
6. Otieno ne paro ni Onyango nowuok kapok nyamingi ochopo
7. Japuonj ne ochiwo mich ne Otieno e dalagi.
8. Onyango nomako jakuo e bwo kitandane.
9. Onyango nowacho ni ne oyudore e wi mesane.
10. Japuonj nokowo wendo e dalane/gi

j) Anaphors in the Dholuo locative preposition

1. Japuonj nomiyo Otieno mich e dalagi.
2. Onyango nomako jakuo e bwo kitandane.
3. Onyango nowacho ni ne oyudore e wi mesane.

k) Anaphors in constructions with non-overt subjects.

1. Bedo ni ne olewo ne okuodo wi japuonj.
2. Bedo ni ne odhawo ne omiyo ji oringo japuonj.
3. Ng'ama ne owuok oko mokwongo ne oting'o bugene.
4. Mana joma oluongi ema nyalo ting'o ofukegi.
5. Par ni Onyango ong'eyo ni otuo.

6. Par ni Onyango ong'eyo ni ne oyiene mondo ochiem.