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# Antecedents and Determiner Phrases in Zarma

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## Abstract

Information about the nature and the forms of pronouns, anaphors and referential expressions of Zarma, a Nilo-Saharan language of the Songhai group, abounds in the descriptive literature, but there has not been any known thorough and comprehensive analysis of these items, especially within the modern approach to Binding Theory. And perhaps, on the assumption that a fundamental restriction exists on the way languages express their rules of construal. I therefore examine pronouns, anaphors and referential expressions and show that the language distinguishes between reflexives and reciprocals at least morphologically, whereas they share obvious syntactic and semantic properties. I point out that pronouns, particularly the long forms of the third person, *nga* and *ngey*, have pronominal as well as anaphoric properties; they sometimes make evident antilocality effects of the Condition B type i.e. they do have local antecedents. I adopt the movement approach to harmonise the opposite demands of binding conditions on pronouns, anaphors and referential expressions. I make use of the same approach to discuss the interrelationship between control and binding and explicate the relevance of precedence and c-command to the formulation of binding vis-à-vis Zarma data. This study gives an interesting account of the grammatical properties and the interpretation of nominal and pronominal expressions (determiner phrases) from Zarma; an aspect of the language that has hitherto not received any systematic linguistic attention.

**Key words:** Binding conditions; Doubling constituent; Pronouns; Anaphors; R-expressions; Zarma

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## 1. INTRODUCTION

As contained in a number of popular literature on binding, languages vary in terms of the way many of them employ special means to express reflexive predicates and others do what is diverse. In ordinary sense, binding theory attempts to explain the way different kinds of nominal expressions have anaphoric relations among one another as well as how they happen to have reference to things in the world (Büring, 2005). Data from different languages have provided different ideas and postulations about the principles that govern binding in natural language. In fact, Dechaine and Wiltschko (2017, p.60) argue against a hallmark of the Government and Binding Theory which assumes that reflexives are a homogeneous class, within and across languages. Writings on Binding Theory (BT) mainly recognise three types of NPs (here considered as DPs): non-reflexive pronouns otherwise called pronominals; reflexives and reciprocals popularly referred to as anaphors and full DPs also known as R-expressions. Within the standard BT framework, each of these DPs is associated with a condition; either that the DPs have the same index or not. For instance, a pronoun is expected to be free in its local domain (condition B); an anaphor is locally bound (condition A); and an r-expression is free always (condition C). In opposition to the specified binding conditions, Zarma data, as shown in this study, provide examples where pronouns and reflexive pronouns can be both locally bound. This is a cross linguistic fact that has turned the conditions to uncritical assumptions about binding, leading to the development of a movement approach to the competing conditions on binding as a

module of the theory (Hornstein 2001, Kayne 2002). Thus, the core goal of this paper is to examine how the derivational perspective of the Minimalist Program that contemplates Binding in movement terms can be used to analyse the Zarma data. I proceed as follows. Section 2 describes the data sources and gives terse information on the orthography and the marking of tone in Zarma. Section 3 of the paper reviews prior descriptive literature on Zarma and sister languages with a view to showing the gap the study intends to fill. In section 4, I examine the properties of pronouns, anaphors (reflexives & anaphors) and r-expressions in Zarma, and later present the puzzle of non-complementarity in the distribution of pronouns and reflexive pronouns. Section 5 introduces the movement analysis, in particular the doubling constituent approach (Kayne, 2002), to explain the non-complementarity of pronouns and anaphors, and extends same to what is understood as condition C effects i.e. r-expressions. Section 6 of the paper discusses the interrelationship between Control and Binding, and section 7 gives an extensive insight on the relevance of C-command and precedence in relation to the analysis of antecedents. The paper closes with the conclusion in section 8.

## 2. DATA FOR THE STUDY

The data described in this study come from two sources: a) conversations with native speakers of Zarma, who speak the variety of the language spoken in Niamey, and b) written texts for speakers and learners of Zarma. Original data collected are transcribed using the IPA symbols, which in some cases slightly differ from the official orthography of Zarma, while data from written texts are cited as per the original. As it is with many African languages, Zarma is a tone language, though the meaning of a word is almost always unambiguous in its context of use. Thus, several published texts especially those for speakers and learners do not indicate tone with the standard IPA diacritics unless the word involved is ambiguous (see Cawyan Zarma sanni, an instructional course in Zarma). In view of this and the irrelevant role of tone in the analysis of the data used for this study, sparing attention is paid to tone in this paper.

## 3. A REVIEW OF DESCRIPTIVE LITERATURE

Zarma has very rich descriptive accounts, none of which, as far as I know, is at the centre of the discussion of the standard dichotomy between anaphors and pronominals. Tersis (1972, 1981), Hamani (1981) and Oumarou (1993) are descriptive works on the phonology and grammar of Zarma. Ruhlen (1976, 1987 & 1994) also provide significant information about features common to Zarma as well as languages in the Nilo-Saharan phylum. According to these studies, Zarma has a large number of suffixes and few prefixes which are either agglutinating or inflectional; nouns could be singular or plural and, could be derived from verbs via suffixes and, prefixes could be added to adjectives and numbers. Moseley and Asher (1994) capture this tendency in their description of Nilo-Saharan languages as having very complex morphologies. The complexity intended here relates to the difficulty likely to be encountered while making attempts to describe the regularities as well as the irregularities predicted by the data in a systematic fashion.

In the descriptions of Zarma in these works and lexical data base of the language, there is ample evidence to the effect that no ordering consistency exists across pairs of elements in the language. For instance, no dominant order exists between the subject, object and verb, same as with object and verb, whereas subject consistently occurs before the verb. Similarly, a noun always precedes the adjective that modifies it while no specific sequence exists in the order of object, oblique and verb. In this regard, Bender (2000) avers that, on a large scale, the language is partly SVO and partly SOV; a feature or peculiarity of the language that Jayeola (2020) further confirms. The apparent show of inconsistency in Zarma is different from what is found in other Songhay languages where there is the dominant sentence order (see Heath 1998, Kossmann 2009, and Christiansen 2010) among others. Another study on Zarma is Abdoulaye (2018). In this work, Abdoulaye states that locative markers in Zarma are postpositions, similar to what Heath (1998) reports for Koyra Chiini, a sister language where on a large scale, postpositions are considered as a feature of most Songhay languages and that prepositions are few. Abdoulaye (ibid.) assumes that Zarma is not a serializing language because it simply strings the verbs with the help of an infinitive marker, contrary to Jayeola (2021), whereas Heath (1998) describes Koyra Chiini as a language with serializing features. In spite of Abdoulaye's (2018) recognition of infinitive marking in Zarma, he says nothing about control structures, where deletion under identity could yield to a base generated empty category PRO (cf. Hornstein, 2001, p.24).

According to Oumarou (1993), Verbs in Zarma do not have tenses neither are they conjugated. Thus, all grammaticalized TAM (Tense-Aspect-Modality) distinctions appear at the level of the predicative marker and the lexical verb lacks proper inflection. Also, arguments do not have case forms; case is determined essentially by the structural order of words. Sibomana (1995) discusses properties of focus in Zarma while his (2008) work covers a wide range of topics on the grammar of Zarma, which include phonology, morphology and syntax. He shows that the language differentiates personal pronouns in relation to person i.e. first, second and third person. Also, singular and plural pronoun forms are not morphologically related at least for the first and

second persons and, there is no gender distinction in Zarma, therefore, the third person singular pronoun **à** can be interpreted as he, she, it, him, her, his, hers, its, one or one's depending on its position (structural) in the sentence. Similarly, Jayeola (2019) examines personal and possessive pronouns in Zarma and, on the evidence of distribution i.e. the similarities between pronouns and determiner, modification and coordination, avers that determiners - definite/indefinite and pronouns are functional items that are generated in the same position. As relevant as Sibomana (2008) and Jayeola (2019) are to the present study, they do not delve into how nominal and pronominal expressions in terms of binding structures could be interpreted and analysed.

Interestingly, we find descriptive accounts on the issue related to binding in other Songhay-related or sister languages, Koyra Chiini (Heath, 1998) and Yanda Dom (Heath, 2017) among others. In the two languages under reference, Heath provides extensive accounts of reflexives and anaphors but does not analyse the data along the line of the canonical binding theory presented in Chomsky (1981) or the modern Binding theory.

Since, it has been reported that languages have pronominal elements that yield to covaluation vis-à-vis the daunting diversity in the way languages explore this phenomenon, it worths the effort to put Zarma data to test. In what follows, therefore, I examine the properties of the three types of DP in relations to the three condition effects assumed in the standard binding theory.

## 4. PROPERTIES OF PRONOUNS, ANAPHORS AND R-EXPRESSIONS IN ZARMA

This section provides the basic features and backgrounds of Zarma pronouns, anaphors and r-expressions. Each of these pronominal and nominal expressions is examined in turns.

### 4.1 Pronouns

In general descriptive terms, pronominals are not referentially defective; they may depend on an antecedent but need not. In Zarma, pronouns syntactically behave like their counterparts in several other languages; they are morphologically distinctive only in relations to number and person but not gender or case marking. The pronouns can be used as subject, object and also as possessive, by this token, they can replace all sorts of nouns in the language. As one will observe from (1), pronouns in Zarma, like other languages, lack intrinsic descriptive content of their own. This and several other features of pronouns explain my reason for taking them as instantiations of the functional determiner category.

1a) À na Gambi no fárí
3sg Perf.Pos Gambi give field
'He gave a field to Gambi.'

b. $Ay_x$ ci ni se $ay_x$ dí Kadi
1sg tell you Comp 1sg see Kadi
'I told you that I saw Kadi.'

In (1a), *à* 'he' does not refer to Gambi, the theme or *fari* the goal because it must be free in its local domain subject to Condition B. However, in (1b), the two pronouns, *ay* 'I' coindexed, refer to the same entity. This situation does not contradict what plays out in (1a) because one is found in the lower clause and the other one occurs in the upper clause.

In (2a), the derivation is licit under the indicated indexation, where the antecedent, *Kadi* cannot be said to be too remote from *à* 's/he'. In this case, *à* strictly takes the reading, *she* because its antecedent *Kadi*, has a feminine feature. This reading is appropriate because the pronoun and its antecedent are not within the same clause and the pronoun, with a bound variable reading, is preceded and c-commanded by its antecedent. On the other hand, the arbitrary reading of *à* in (2a) is available because *à* may not require an antecedent in consonance with the stipulation of binding condition B.

2a) Nda $Kadi_x$ du nooru boobo $à_{x/j}$ ga koy Makka
Comp Kadi get/have money many 3sg Imperf.Pos go Mecca
'If Kadi gets a lot of money, s/he will go to Mecca.'

b. $À_x$ ne $nga_x$ ga koy fu
3sg say 3sg Imperf.Pos go house
'He said he (himself) will go home.'

Syntactically, (2b) is largely identical to (2a); each of *à* and *nga* functions as the subject of the matrix clause and the embedded clause respectively. However, unlike the available arbitrary reading of the pronouns in (2a), *nga*, the subject of the lower clause, gets a bound interpretation. This has not violated the requirement set by the binding condition B, but it appears intriguing. I consider that the strict reading of the pronoun as a bound variable obtains from the form of the pronoun, which is the long form of the third person pronoun. Jayeola (2019) avers that the long form of the third person pronoun will normally always occur in the subject position of an embedded or lower clause to refer back to the subject of the matrix or main clause. This analysis finds a further support in (3a), where *ngey*, the long form of the third person plural pronoun is coreferential with the subject of the matrix clause.

3a) $I_x$ ne $ngey_x$ ga koy fú
3pl say 3pl Imperf.Pos t go home
'They said (that) they will go home.'

Furthermore, when the subject of the matrix and the subject of the embedded do not corefer, the short form of the third person pronoun is preferred. Thus, as shown in (3b), the subject of the lower clause does not get a bound variable reading. If this assumption is correct, it may be appropriate to understand the use of the long pronouns in (2b) and (3a) as a mark or an indicator of emphasis (Jayeola, 2019).

3b) $À_x$ ne $a_j$ ga koy fu
3sg say 3sg Imperf.Pos go house
'He said he will go home.'

It is possible for *à*, the shorter form for the third person singular pronoun to occur in both subject and object positions when they do not refer to the same person. This is the case with example (4) below.

4) $À_x$ si du $à_j$
3sg Imperf.Neg get/obtain 3sg
'S/he will not get it.'

If the two arguments of the predicate in (4) are coindexed, the derivation will crash for being uninterpretable. Thus, apart from the feature of pronouns which can affect their readings as shown in (2&3), indexation is another crucial factor that can make a derivation licit or otherwise. (5a) is unacceptable given the indicated indexation as the object pronoun does not require a clause mate antecedent. This situation questions the veracity of Cook and Newson's (2007, p.166) definition of binding as "α binds β iff: α and β are co-indexed and α c-commands β". All the conditions set by the definition are met in (5a), yet the derivation is not licit; the fact is that the subject as well as the object deserves an arbitrary reading to make the derivation convergent. So, coindexation is not obligatory in the case of (5a). In this vein, example (5b) is grammatical.

5a) *$À_x$ si du $à_x$ kàlá súbà
3sg Imperf.Neg get/have 3sg P tomorrow
b. $À_x$ si du $à_j$ kàlá súbà
3sg Imperf.Neg get/have 3sg P tomorrow
'He won't get it until tomorrow.'

It is obvious from the foregoing that pronouns in Zarma have pronominal as well as anaphoric properties, which I will discuss later in this paper. This fact about Zarma is similar to what Reuland (2017, p.11) reports in most Germanic and Romance languages where first and second person pronouns can be locally bound.

### 4.2 The Anaphors in Zarma

In this paper, anaphors serve as a cover term for the reflexive and reciprocal. This is based on the assumption that an anaphor is an expression which cannot have independent reference and this fact has a direct bearing on the way the reflexive and reciprocal behave in Zarma. Theoretically speaking, anaphors are referentially defective elements that are meant to depend on a linguistically expressed antecedent for their interpretation; they cannot be used deictically (Reuland, 2017). I will show in this paper that reflexives and reciprocals are not syntactically different; the difference between them is basically semantic in nature. I will discuss the features of each of them below.

Reflexives in Zarma are consistently morphologically complex. Similar to the situations in Dogon languages, Culy and Kodio (1994, p.320) and Yanda Dom, Heath (2017, p.484), Zarma has a periphrastic reflexive which is formed from the word for 'head' *bôŋ* with a pronominal possessor that agrees in number and person with its antecedent. The pronominal possessor linearly occurs before the word for head. The situation in Zarma is reminiscent of what Heath (1998, p.329) describes as composite reflexive pronouns in Koyra Chiini, a related Songhai language. This feature of Zarma reflexive is the same as what Dechaine and Wiltschko (2017) among other researchers describe as body-part reflexives. Let us consider the following examples.

6a) $ay_x$ dí [ay bôŋ$_x$]
1sg see 1sg head
'I saw myself.'
b. $Tairou_x$ na [nga bôŋ$_x$] kar
Tairou Perf.Pos 3sg head beat
'Tairou beat himself.'
c. *$À_x$ di [ay bôŋ$_x$]
He see 1sg head
He saw myself.'

For the reason that binding principle A states that reflexives must be locally bound (Chomsky 1981), *ay bôŋ* 'myself' and *nga bôŋ* 'himself' refer to *ay* 'I' and *Tairou* in (6a) and (6b) respectively. Therefore, the coindexation of the object DPs with the subjects in (6a & b) is obligatory because in each case, the coindexed items are arguments of the verbs *dí* 'see' and *kar* 'beat' in (6a) and (6b) respectively, and are coreferential. It is important to mention that when the *bôŋ* reflexive has a third person singular antecedent; it takes the form *nga bôŋ* as in (6b) above. Our examples in (6) conform to the prediction by Rudnev (2017), who describes reflexives as a form of pronouns that are bound variables which take most or all their features from their antecedents by means of Agree relation. When the contrary is to the effect, the resultant construct is ungrammatical. Example (6c) is ill-formed on account of no Agree relation between the reflexive particle and its presumed antecedent, all of which occur within the same clause. On the other hand, the configuration in (7a) is bad because the DP coindexed with the reflexive item does not fall within the governing category of the reflexive item.

7a) *ay$_x$ dí Kadi watika Tahirou na [ay bôŋ]$_x$ kar
1sg see Kadi when Tahirou Perf.Pos 1sg head hit
b. ay dí Kadi watika Tahirou$_x$ na [nga bôŋ]$_x$ kar
1sg see Kadi when Tahirou Perf.Pos 3sg head hit
'I saw Kadi when Tahirou hit himself.'

In (7a), we observe agreement relations of person and number between the pronoun *ay* 'I', the subject/agent of the upper clause and the reflexive pronoun *ay bôŋ* 'myself', the object/patient of the lower clause but the expression is adjudged ungrammatical. This is so because the pronoun in the upper clause cannot bind the reflexive in the lower clause. Example (7b) is licit because *nga boŋ* 'himself' is bound by *Tahirou*, the subject of the lower clause, and they both occur within the same local domain. Besides, the two arguments share agreement of person and number and are coindexed. From the foregoing, we can tentatively conclude that the bindee, which in this case is the reflexive pronoun, must have an appropriate antecedent as its binder in addition to the condition of being clause mates. Thus, the standard binding condition A applies to the examples in (7).

Reciprocals, as I have hinted earlier, refer to another form of anaphors. In Zarma, reciprocal is morphologically distinct from reflexives. However, it is not too different semantically from reflexives because it expresses mutual relations. Also, it has the same syntactic locality as reflexives; its antecedent DP occurs within the same clause. The situation can best be described as the one in which an anaphoric relation exists between an antecedent nominal, usually the subject, and a dependent reciprocal item, where the denotation of the dependent reciprocal depends on the value of its antecedent. Consider the following examples in (8).

8a) Iri$_x$ si ba care$_x$
1pl Imperf.Neg like Recip
'We do not like each other.'
b. Iri$_x$ ga ba care$_x$
1pl Imperf.Pos like Recip
'We love each other.'
c. Araŋ$_x$ go ga care$_x$ kar
2pl Prog Recip hit/beat
'You were hitting/beating each other/one another.'

Morphologically, Zarma reciprocal is not composite; this is unlike the situation in English, where the reciprocal item is divisible into distributor part and reciprocator part. Everaert (2005, p.133) illustrates the situation in English as shown in (9).

9) John and Mary each$_i$ like [e$_i$ other]
distributor reciprocator

In all of the examples in (8), *care* occurs in bare form, and functions as a distributor anaphor that takes a plural antecedent. Also, in each of the examples in (8), we have a reciprocal event where the same participant is involved in two semantic roles of the same predicate. It is also the case that, reciprocity as observed in each of these examples is a relation between two distinct arguments, whose predicate has the same transitive argument structure as the arguments that are not in anaphoric relations. In Zarma, for example, (10a&b) below have the same argument structure because the verb is transitive in both cases.

10a) Tairou$_x$ na Kadi kar
Tairou Perf.Pos Kadi beat
'Tairou beat Kadi.'
b. Áràŋ$_x$ ga care$_x$ kar
2pl Imperf.Pos Recip beat
'You beat each other/one another.'

As the examples in (11) suggest, reciprocal is subject to principle A of the binding theory, same as what we have seen of the reflexive above. The item shows a property that matches its antecedent.

11a) *Ay ci ní se Abou dí care
1sg tell 2sg Comp Abou see Recip
'I told you that Abou saw each other.'
b. *Hamadou de Tahirou ne [care sí day zaara]
Hamadou Conj Tahirou say Recip Imperf.Neg buy cloth
'Hamadou and Tahirou said that each other will not buy the cloth.'

Example (11a) is not correct because the reciprocal *care* does not have a local antecedent in the sentence. There is a mismatch of features between Abou, the subject of the lower clause, and the reciprocal item *care,* both of which occur in the same local domain. *Abou* is singular while *care* appears to be inherently plural. In this case, *care* is uninterpretable. It is not just the mismatch of features in (11b) that causes the derivation to crash; it is also the case that *care* does not have an independent reference and so cannot stand in the subject position. The conclusion we can draw from (11) is that the examples are illicit because they contradict the binding condition A.

From the discussion so far, reflexives and reciprocals in Zarma have obvious semantic and syntactic properties in common. This description of the reciprocal in Zarma accords with Yang's (1983) assertion, cited in Everaert (2005, p.128), that the distribution of reciprocals is cross-linguistically similar to that of reflexives. I have mentioned earlier that the two items share the semantic property of expressing mutual relations. Syntactically, they both seem to function as DPs, and hence, as the examples have illustrated, can occupy typical DP positions. In addition to this, they can be focused as indicated in (13).

12a) Ni$_x$ go ga [ni bôŋ]$_x$ hali
2sg Prog 2sg head deceive
'You are deceiving your self.'
b. Iri$_x$ ga bay [care$_x$]
1pl Imperf.Pos know Recip
'We know each other.'

13a) Ni bôŋ no ni go ga [~~ni bôŋ~~] hali
2sg head Foc 2sg Prog deceive
'You are deceiving YOUR SELF.'
b. Care no iri ga bay [~~care~~]
Recip Foc 1pl Imperf.Pos know
'We know EACH OTHER.'

Examples in (12) are the neutral forms of the derived structures in (13). The reflexive *ni bôŋ* and the reciprocal *care* in (12) are found in their canonical object positions whereas, the need for these items to check their focus feature necessitates their movement to the specifier position of the focus phrase (FocP) in (13). It is observed that the basic constructions in (12) superficially display a non-configurational form. This is due to the nature of the word order in Zarma, which I have earlier mentioned.

At the moment, there appears to be no evidence to suggest that anaphors (reflexives and reciprocals) can play an intensifying role in Zarma. If this is correct as far as Zarma is concerned then, Zarma reflexives behave differently from their Chinese counterparts, where they can be located at a non-argument position Zheng (2018, p.140).

Notwithstanding the shared semantic and syntactic characteristics, there are also noticeable meaning differences between reflexives and reciprocals as our examples have suggested. One, it is possible for reflexives to be either singular or plural; whereas, the item *care* 'each other/one another' requires a thematic variable that has a distinct value. For instance, the condition set by *care* is that it must select an antecedent that is not singular, but it may be associated with any pronominal person as shown in (8). Example (14) is unacceptable because there is a mismatch of features between *care* and its syntactic antecedent.

14) *Kadi na care kar
Kadi Perf.Pos Recip hit
'Kadi hit each other.'

It is therefore the case that in each of the examples in (8), the subject is strictly interpreted as plural. In fact, where reflexive is plural, it does not have the same reading as reciprocal. Consider the following examples in (15):

15a) Irí di iri bôŋ dǐjó́ ra
1pl see 1pl head mirror P
'We saw ourselves in the mirror.'
b. Alli de Rakiatou ga bay care
Alli Conj Rakiatou Imperf.Pos know Recip
'Alli and Rakiatou know each other.'

In another vein, unlike reflexives, reciprocal *care* in its true function is in a reciprocating relationship to a semantically multiple plural antecedent and there is no morphological difference on the basis of whether the number of reciprocating individuals is two or more than two. Assuming that *iri* 'we' in (15a) implies two participants, X and Y, the reading will be that X sees X and Y sees Y, whereas for (15b), it means that *Alli* knows *Rakiatou* and *Rakiatou* knows *Alli*. In all of these examples, the condition that an anaphor must have a binder within its local clause is satisfied.

### 4.3 The R-expressions in Zarma

Schadler (2017) argues that a proper name cannot be bound by a pronoun according to condition C. This is not surprising, given that proper names are referentially more specific than third person pronouns.

16a) *Kadi$_x$ di Kadi$_x$
Kadi see Kadi
'Kadi saw Kadi.'
b. Kadi$_x$ di Kadi$_j$
Kadi see Kadi
'Kadi saw Kadi.'

The sentence in (16a) is bad because the two occurrences of the DP *Kadi* are coindexed. However, the sentence is deemed acceptable if it infers that two different individuals named *Kadi* are being pointed at as shown in (16b). In this case, they do not corefer. This, therefore, provides an empirical support for the assumption that r-expressions otherwise called Full-DPs cannot occur with a sentence internal antecedent, even outside of the same local clause, full-DPs do not co-refer, but they can antecede a pronoun (I will illustrate this later). This account has a lot in common with the example below, where the DP *Abou* in the lower clause is not bound by the morphologically identical DP in the upper clause.

17) Abou$_x$ si bay hala Abou$_j$ ga funa suba
Abou Imperf.Neg know Comp Abou Imperf.Pos alive tomorrow
'Abou does not know whether Abou will be alive tomorrow.'

Although *Abou* as the subject of the matrix clause asymmetrically c-commands the subject of the embedded clause, one is not an antecedent of the other. This means that it is apt to argue that Full-DPs must not be bound but they can c-command each other (I will discuss the relevance of c-command and precedence later in this study). It is important to state at this point that the data available for this study conform to the judgement that Full-DPs must not be bound. However, there is evidence from other languages to suggest that binding condition C is not actually uncontroversial, a discussion I would like to avoid. Büring (2005) and the references therein provide illuminating insights into some issues relating to the distribution of Full-DPs. I will return to the analysis of condition C later.

### 4.4 Absence of Complementarity between Pronouns and Reflexives in Zarma

It would appear from the foregoing that pronouns, anaphors and referential expressions are clearly defined in terms of distributions and binding, but we find examples that make it difficult for us to state in clear terms a principle which can account for the distribution of one to the exclusion of others. In particular, the idea of complementarity between pronouns and anaphors does not seem significant if we consider the configurations in (18).

18a) À na gondi wi nga fú o ra
3sg Perf.Pos snake kill 3sg room Det P
'He killed a snake inside his (own) room.'
b. Ay dí nooru ay jerga
1sg see money 1sg P
'I saw some amount of money beside me.'

In relations to syntactic patterns, example (18a) in particular is not different from the *bôŋ* reflexives which can be expressed formally as possessed DPs, where a possessive pronoun possesses the noun *bôŋ* 'head'; in this case, there is dependency between *à* 'he' the subject and *nga* 'his' possessor of the post verbal NP *fú* 'room'. It then means that there may be a bound interpretation of *nga* in (18a) though not necessary, since *nga* can refer to any individual in discourse. Thus, this dependency is not syntactically encoded, but only represented at the level of logical form. In (18b), the constituent that is considered as a possessor in (18a) now functions as the complement of a postposition, *jerga* 'beside'. As for example (18b), only one interpretation seems plausible; the two pronouns strictly refer to the same person. In this case, the second occurrence of *ay* 'I' unambiguously expresses coreference in contrast to the stipulation of the binding condition B. If we follow Heath's (1998, p.334) description of a similar situation in Koyra Chiini, *nga* with a bound interpretation would be regarded as a simple reflexive pronoun. Nonetheless, the configuration in (18a), according to Reuland (2017), does not qualify as reflexive because the sentence does not denote a reflexive killing-relation, thus, no reflexive predicate is formed. In the light of Reuland, it is preferable to refer to *nga* as a subtype of anaphors i.e. dedicated possessive anaphor. Based on logical form representations, our analysis of the examples in (18) is in order. In each of the cases where coreference is possible, the pronouns in question are non-distinct in features for person, number and gender. It must immediately be reiterated that Zarma lacks a specification for gender, thus non-distinctness and not feature composition assists the interpretation of the example in (18a).

Returning to the issue of the interpretation of the non-reflexive pronouns in (18), Chomsky (1981) posits that prepositional phrases do allow pronouns to be locally bound, a situation that is contrary to the binding condition B, which predicts that pronouns and anaphors are in complementary distribution. The complications observed in the interpretation of the pronouns in (18) arise in the sense that each of the DPs in question functions as the argument of their respective postpositions. As it appears, it is not appropriate to say that the verbs *wí* 'kill' and *dí* 'see' in (18a) and (18b) respectively select for the PPs because they do not require a second internal argument. In the opinion of Büring (2005), the binding domain for the coindexed pronouns should be the PPs and not the entire clause. In this case, the pronouns are said to be free within PPs. This account contradicts Hestvik (1991) cited in Elbourne (2008, pp.124-5). According to Hestvik, the whole sentence is the governing category because the verbs, and not the prepositions, assign theta roles to the prepositional object, which in the Zarma case is postpositional. If this prediction is correct then, there is a breakdown in the purported complementary distribution of pronouns and reflexives.

English also provides a striking example of data that challenges the complementarity hypothesis between pronominals and reflexives. Consider the examples in (19) from Dechaine and Wiltschko (2017, p.61).

19a) I believe that Paul loves Mary more than **me.**
b. I believe that Paul loves Mary more than **myself.**

In (19a), the pronominal 'me' is locally free and is bound outside of its local domain; this is in line with condition B. However, in (19b), the reflexive form 'myself' is free within its local domain and bound outside, contrary to condition A. This situation suggests that Zarma

is not alone in falsifying the claim that reflexive pronouns are homogeneous in terms of their constructional relationships i.e. antecedents and anaphors.

Another set of data in (20) below provides a considerable amount of evidence that appears to set aside the notion of complementarity between pronouns and reflexives. The situation here does not suppose any variations as to the domain in which pronominals and reflexives should be differentiated in terms of having or not having co-referential antecedent. In this case, we can have pronouns in the same syntactic position as reflexives.

20a. À na nga daaro neera
3sg Perf.Pos 3sg bed sell
'He sold his (own) bird.'
b. I kande ngey bariyey
3pl buy 3pl horses
'They bought their (own) horses.'
c. $Ni_x$ go ga $[ni\ b\hat{o}\eta]_x$ hali
2sg Prog 2sg head deceive
'You are deceiving yourself.'

Example (20c) is not problematic as far as binding conditions on pronouns and anaphors are concerned because the theta roles of agent and patient of the predicate *hali* 'deceive' end up on the same argument, qualifying the configuration as a true reflexive. However, sentences in (20a & b) are not transparent to the standard binding conditions. In these examples, we have two instances of non-reflexive pronouns in the same clause occupying the subject and object positions. Based on their interpretations, it is possible to say that the two non-reflexive pronouns in each of the sentences do not co-refer in strict compliance with binding condition B. Another possible interpretation of the same examples is the reverse of what the binding condition B will make us to assume. In (20a) for instance, *à* 'he', the subject of the sentence may be bound by *nga* 'his', and the same sense naturally extends to (20b), where the subject pronoun *I* 'they' and the possessive form *ngey* 'their' share features of person and number. The complication here may be traced to the properties of possessive pronouns and their effects. It therefore implies that (20a & b) falsify the judgement about pronouns not being bound within the same clause.

As follows from the foregoing, complementarity is a principle that is violated, and it is costly to preserve it. Consequently, it is appropriate to assume that conditions on binding do not constitute a unitary phenomenon such that the operations involved must differ. I will address this shortcoming in the section that follows.

## 5. TOWARDS AN ANALYSIS OF CONDITIONS ON BINDING IN ZARMA

Within the context of the standard Binding Theory, anaphors are distinguished from pronouns based on their individual feature specifications. Thus, anaphors are specified as [+anaphoric] and [-pronominal], i.e. they are bound in their governing category because they do not have capacity for inherent reference. This stance follows directly from condition A. On the other hand, the two-valued features of [± pronominal] are used to mark pronouns as [+pronominal] and [-anaphoric], indicating that pronouns are not analyzable as co-referential, i.e. they are free in their governing category, a stipulation derivable from condition B. Correspondingly, Zarma provides a strong empirical basis for the standard Binding Theory, by distinguishing pronominals from anaphors. Nevertheless, there is a measure of restrictions on the way Zarma expresses its rules of construal, contrary to the sharp distinction made in the standard Binding Theory. This is due to the fact that, there exists a class of pronouns in the language that has pronominal as well as anaphoric properties; they do have local antecedents. This situation poses a daunting challenge to the account within the standard Binding Theory.

In view of the foregoing, I shall analyse the sloppy data in the light of movement terms adopted in Minimalist Program. I should mention here that, henceforth I will cease the use of coindexing as means of encoding dependencies because Chomsky (1995) avers that indices violate the Inclusiveness Condition, which limits syntactic computations to morpho-syntactic objects in the numeration.

Let me begin the analysis by revisiting example (18) above, where pronominals in locative PPs may be bound in their governing category, contrary to condition B. Also, we can have pronominals in the same syntactic position as reflexives (20). I should reiterate here that condition B of the standard Binding Theory presupposes that a pronoun must not have a binder within its local clause. This condition strictly applies to examples (21a&b) below but the one in (21c) fails with respect to condition B effects.

21a) Iri ga kwaayo no ni se
3pl Imperf.Pos shirt give 2sg P
'We will give you the shirt.'
b. À si du à kala suba
3sg Imperf.Neg get/obtain 3sg until tomorrow
'S/he will not get it until tomorrow.'
c. Abou na nga tahamu neera
Abou Perf.Pos 3sg shoe sell
'He sold his own shoe.'

Examples (21a & b), where the subjects and the objects do not co-refer will require a different derivational account from the structure in (21c) where *Abou* function as the antecedent of *nga*. Since the subject and the object in (21a & b) do not corefer, I assume that each of the subject and object positions is filled by simple external merge because each of the pronouns is present in the numeration to play a role in the derivation. Furthermore, in the spirit of Kayne (2002), there are condition B effects

in (21a & b) because of the absence of an intermediate landing site between the theta-position of the object and that of the subject.

According to Hornstein (2001, p.178), "pronouns are part of the computational system and serve to repair otherwise illegible non-convergent derivations". This assertion appears to follow from traditional accounts in generative grammar, which suggest that transformations introduce pronouns through pronominalization. This implies that pronouns are not part of the numeration used to derive convergent expressions, but they are allowed into a derivation whenever their absence does not permit convergence. Following Hornstein's account therefore, *nga*, whose interpretation depends on the subject *Abou* in (21c), is deemed to enter into the derivation as a last resort because its absence does not make the derivation licit. Thus, the logical form structure of (21c) is given as (22a).

22a) Abou na [pronoun nga tahamu] neera
Abou Perf.Pos 3sg shoe sell

(22a) is formed from (21c) by assuming that a set of operations deletes a copy of *Abou* in the DP *Abou tahamu* 'Abou's shoe' and replaces it with *nga* 'his'; which functions as a resumptive pronoun in this case. It then means that the resumptive pronoun is grammatically licensed with a bound variable interpretation.

However, this analysis is harmful because it goes against an aspect of the Minimalist assumption. It does not see the pronoun as a part of the lexical array in the numeration; an account that is counter intuitive to Chomsky's (1995) inclusiveness condition (IC). Inclusiveness condition prevents the computational system from introducing new elements in the course of the derivation, and this is exactly what Hornstein's analysis does. In the sense of Kayne (2002) therefore, what plays out in (21c) is an instance of antecedent–pronoun case which involves two distinct theta-roles, one for the antecedent *Abou* and a distinct one for the pronoun *nga*. The derivation in (21c) indicates that the double *Abou* moves from within the doubling constituent [*Abou nga*] into a higher theta-position, i.e. the Spec TP, as the example in (22b) shows.

22b) Abou na [~~Abou~~ nga] tahamu neera
Abou Perf.Pos 3sg shoe sell

The analysis in (22b) differs slightly from the one in (22a) in that, (22b) recognises the presence of the pronoun *nga* in the numeration, and derivationally forms a constituent with its antecedent *Abou*. In this case, *Abou* originates from the Spec of *nga*. We can extend the same analysis presented above to the example in (23) where the postpositional phrase *fu o ra* 'inside the room' is assumed within the standard binding theory to allow the pronoun *nga* to be locally bound with the subject *Kadi*.

23) Kadi na gondi wí [[~~Kadi~~ nga] fu o ra]
Kadi Perf.Pos snake kill 3sg room Det P
'Kadi killed a snake inside her own room.'

Following Kayne (2002, p.141), contra the standard condition B effects, we can collapse the derivation of the structures in (21c & 23) by assuming that for *nga* to have *Abou* as antecedent in (21c) and *Kadi* in (23), *nga* and the antecedent DP in each instance must start out as a doubling constituent, i.e. a pronoun can be interpreted only via its filled Spec which, in this case, is a product of pure Merge (external). The derivation in (23) for instance is licit because [*Kadi nga*] a double constituent, starts out in the complement position of the postposition *ra* 'inside' and the Spec of the $D^o$ [*Kadi nga*] serves as the intermediate landing site between the theta-position of the doubling constituent [*Kadi nga*] and the theta-position of the double *Kadi*, which is the subject theta position of *wí* 'kill'. Thus, *Kadi's* movement to its ultimate landing site, Spec TP is cyclic in nature. Furthermore, the complement-head order of the VP witnessed in (22 & 23) is as a result of movement of the complement which originates as the complement of the verb but has to move to the outer specifier position of the light verb to check its accusative case overtly in the manner that replicates the unified spec-head case checking relationship.

The configuration in (24) contains two clauses whose subjects may not be bound. In such a case, each of the subjects will be assumed to enter the derivation through direct merge. In that wise, *Ramatu* is interpreted as free in (24a) i.e. not anteceding *à*; its occurrence in the topmost Spec-TP, is a result of external merge. In another vein, a bound reading of *à*, the subject of the lower clause is possible such that an antecedent-pronoun relation exists between *Ramatu* and *à*. Here, we instigate movement. As we have earlier explained, it is a movement out of a constituent of the form [*Ramatu-à*]. As illustrated in (24b), *Ramatu* and *à* 'she' are merged together as a double constituent but get separated at some stage of the derivation.

24a) Nda Ramatu du nooru boobo à ga koy Makka
Comp Ramatu get/have money many 3sg Imperf.Pos go Mecca
'If Kadi gets a lot of money, s/he will go to Mecca.'
b. Nda Ramatu du nooru boobo [~~Ramatu~~ à] ga koy Makka

When a bound interpretation is not required for *à*, it means that *Ramatu* cannot start from within a doubling constituent, if it does, it will not be able to reach certain positions relative to *à*. And we take this to be a condition C effect. It then follows that condition B and condition C are analyzable in terms of movement.

Just as (22-23) is reminiscent of the expression of sentences where subject and object are coreferential, so is the main reason for the existence of reflexives. But, obviously in those examples, what we have are mere dependency relations, not reflexive relations per se. The situation in (21-23) further confirms our earlier assumption that Zarma pronouns seem to have both pronominal and anaphoric properties. Thus, it is safe to assume that true reflexive constructions of Zarma can as well enter a doubling constituent analysis same as for the pronoun in (23). Let us see how this approach can handle the Zarma data.

25a) ay dí ay bôŋ dijo ra
1sg see 1sg head mirror.Det P
'I saw myself in the mirror.'

b. [$_{TP}$ ay [$_{T}$ [$_{VP}$ ~~ay~~ [$_{V}$ dí [$_{DP}$ ~~ay~~ ay [$_{D}^{o}$ ay-ay] bôŋ [$_{PP}$ [$_{DP}$ dijo [$_{P}$ ra ]]]]]]]].

The derivation illustrated in (25b) is the structural analysis for (25a), which proceeds as follows: *dijo* 'the mirror' a determiner phrase (DP), merges with the postposition *ra* 'in' a P, to project into a PP, the complex postpositional phrase in turn merges into the adjunct position of the head V, *di* 'see' that subcategorises for the DP, *ay-ay bôŋ*. The entire VP then merges into the complement position of the TP, whose head T is phonetically null.

Ignoring the presence of the PP adjunct, *dijo ra* 'in the mirror', we explain the derivation in (25b) as the one in which the subject of the sentence originates from the doubling constituent in the object position of the verb *dí* 'see', and the presence of *bôŋ* meaning 'self' makes the Spec DP count as an intermediate pronoun position to which [*ay-ay*] raises. Subsequently, the pronoun moves to the specifier position of the VP where it gets the experiencer θ-role of *dí* 'see'. It finally raises to Spec TP where it checks its nominative case and EPP features. The correctness of this analysis is based on the assumption that *ay bôŋ* 'myself' also checks the accusative case feature of *dí* 'see' as well as the corresponding θ-role. *Bôŋ,* in ordinary sense, translates as 'head', but its presence in cases such as (25) makes coreference available, same as 'self in English. This is in addition to the fact that the verb *dí* 'see' is easily interpretable as reflexive. In the event that *bôŋ* does not get adjoined to a pronoun/D, such a derivation is not licit, which is the reason for the non-convergence of (26).

26. *ay di bôŋ
1sg see head

It is clear from (25b) that movement actually interprets as copy plus deletion, in agreement with the Copy Theory of Movement which predicts that only the last occurrence of a copy is spell-out. Thus, the only copy of the moved *ay* 'I' that survives to the AP (Articulatory Phonetic) interface is the one at the Spec TP. In addition, due to the requirement set by the Linear Correspondence Axiom (LCA), Kayne (1994), the bottom copy of *ay* must delete. The deletion of *ay* is a requirement of the principle of Phonetic Form (PF) component in the case of overt movement, Chomsky (1995, p.202).

I have shown in this paper that reflexives and reciprocals are not different as far as their distribution is concerned; they are both subject to principle A of the standard Binding Theory. What we have witnessed in this study represents the category described as local reciprocals which must have a local antecedent. We can therefore extend the same analysis pursued for reflexives to the treatment of the reciprocal by assuming that the reciprocal in Zarma is formed by overt movement. The illustration is presented in (27).

27a) Abou de Tahirou si ba care
Abou Conj Tahirou Imperf.Neg like/love Recip
'Abou and Tahirou do not like each other.'

b. [$_{TP}$ [$_{DP}$ Abou de Tahirou] [$_{T}$ Ø [NegP [Neg si [$_{VP}$ ~~Abou de Tahirou~~ [$_{V}$ ba [$_{DP}$ ~~Abou de Tahirou~~ care [$_{D}^{o}$ ~~Abou de Tahirou care~~]]]]]]]

The notation in (27b) instantiates a TP projection, where the conjoined DP, *Abou de Tahirou*, which originates from the object position as $_{D}^{o}$ alongside the reciprocal, *care*, occurs in the specifier position of the TP through successive cyclic movement. The VP, whose head V is *ba* 'like', constituent selects *care*. Also, the negative phrase (NegP), headed by *si*, glossed as imperfective negative, functions as the complement of the null T head, and takes the whole VP as its complement. I need to emphasise that the reciprocity in the reading of (27) is due to the presence of *care* in the numeration. Therefore, the Logical Form (LF) structure of (27a), as shown in (27b), predicts that the doubling constituent, [*Abou de Tahirou care*] starts out in the object position of *ba* 'like' and first moves to the Spec of the DP, an intermediate landing site. At this point, the double constituent gets separated and, [*Abou de Tahirou*] raises to the specifier position of the VP where it gets the θ-role of *ba* 'like'. It finally moves to the Spec TP to check its nominative case features. This analysis presumes that the reciprocal, *care*, can check case, accusative, and as well impose interpretive requirements on the variables of the complex predicate formed by means of movement.

As the Zarma data have helped to clarify in this section, Kayne's (2002) specific approach has an edge over Hornstein's, which is not in agreement with the inclusiveness condition. Kayne's mechanism advances arguments in the direction of considering pronouns as present in the numeration by simple external merge. Kayne achieves this feat by specifying an antecedent–pronoun case, involving two distinct theta-roles. This creation resolves the puzzle created by the opposite demands on binding conditions on pronouns, anaphors and referential expressions. Thus, a pronoun with anaphoric properties i.e. a pronoun with an antecedent DP must start out as a

doubling constituent because a pronoun can be interpreted only via its filled Spec. The same reasoning extends automatically to the treatment of anaphors. Similarly, in the spirit of Kayne (2002), condition B effects become operational when there is the absence of an intermediate landing site between the theta-position of the object and that of the subject. This mechanism or perspective introduces structural homogeneity to the analysis of Zarma pronouns with both pronominal and anaphoric properties. As shown in the section that follows, I extend the same analysis to the treatment of control in embedded clauses.

## 6. CONTROL AND BINDING RELATIONS IN ZARMA

There is an intricate relationship between binding and control, both of which are modules within the Government and Binding framework although the derivation and analysis of these modules have greatly changed within the minimalist assumption. From the perspective of works in early Generative Grammar, control structures are those in which a mechanism is adopted to express the relations involved in the assignment of reference to the empty subject of an infinitive or non-finite clause. Thus, the focus of control centres on the referential dependency between the understood subject of the non-finite clause, typically labeled as PRO, recognised as the controlee, and some arguments within the matrix clause, subject or object, referred to as the controller, and the relationships between these arguments (controller and controlee) require interpretations. And, the interpretation of the arguments in question is the subject matter of binding. Let consider the following examples.

28a) À si ba [nga izo] [PRO ma goy ne]
3sg Imperf.Neg want 3sg child Inf. work here
'S/he will not want her/his child to work here.'
b. Iri ga ba [PRO koy habu]
1pl Imperf.Pos want go market
'We want to go to market.'
c. Ay ga sobay [PRO nere ji chire sa suba]
1sg Imperf.Pos begin sell oil red P tomorrow
'I will begin to sell palm oil from tomorrow.'

There are two clauses in each of the examples in (28) with one superficial subject argument. It is the case that *ba* 'want' and *sobay* 'begin' in (28b) and (28c) respectively behave as subject-control verbs because the understood subjects of the embedded clause are the matrix subjects. For instance, the two positions occupied by the non-reflexive pronoun *ay* 'I' and PRO in (28c) do not fall within the same governing category, showing the binding condition B effect. The same condition applies when we have an object-control verb as in (28a). The object of the matrix clause is the understood subject of the infinitival clause. An immediate implication of this is that PRO cannot be separated from its antecedent by a finite clause boundary. In each of the situations in (28b) and (28c), pro and PRO are not in the same governing category, they are coreferential and the understood subject i.e. the controlee, acts as a binder.

Similarly, as a consequence of condition A effects, we observe that an embedded reflexive will always co-refer with its controller in control structures. Depending on the interpretation available to the structure in question, the controller of the embedded reflexive could be the matrix subject or object. This is illustrated in the following examples.

29a) Kadi a ga ba [[PRO] nga bǒŋ wi]
Kadi Agr Imperf.Pos want 3sg head kill
'Kadi wants to kill herself.'
b. À ga ba [[PRO] nga bǒŋ di digi o ra]
3sg Imperf.Pos want 3sg head see mirror Det P
'She wants to see herself in the mirror.'
c. I ga ba ni [[PRO] ma ni bǒŋ kar]
3pl Imperf.Pos want 2sg Inf 2sg head beat
'They want you to beat yourself.'

The configurations in (29) assume an empty DP as the subject of the embedded infinitival clause, referred to as PRO. This analysis supports the relevance of phrase structural c-command as far as the standard Binding Theory is concerned. The interpretation of PRO is dependent on what it is coreferred. For instance in (29a & b), PRO depends on the matrix subject while it is the object in (29c). In both instances however, PRO serves as the unambiguous binder for the reflexive item in the embedded clause. From our discussions of the interaction

between binding and control, we observe that the boundary of an embedded infinitival clause is transparent for binding. Also, regardless of the distance between the embedded reflexive pronouns and their antecedents, reflexives in those cases strongly favour a bound-variable reading.

In the derivation of control structures, especially the type we have encountered in this study, PRO can be analysed as a residue of movement, which is understood as the product of operations copy and delete. The minimalist inclination adopted here in the treatment of PRO is a great departure from the early Generative Grammar account of control structures. Let us consider (30) for illustration.

30a) Ramatu ga ba koy habu
Ramatu Imperf.Pos want go market
'Ramatu wants to go to market.'

b. [$_{TP}$ [$_{DP}$ Ramatu [$_{T}$ ga [$_{VP}$ ~~Ramatu~~ [$_{V}$ ba [$_{DP}$ [$_{D^o}$ ~~Ramatu~~ PRO] koy habu]]]]]]

The analysis in (30b) follows from Kayne (2002, pp.135-6), who assumes that there is a pronominal double in the structure, such that the double *Ramatu* moves into the subject theta-position of the verb *ba* 'want', where it equally checks the D-feature of the TP and nominative case. This situation confirms the position that a controller always shows a Case determined by the matrix predicate, never a Case determined by the embedded predicate (Kayne, 2002, p.136). On the other hand, the subject theta-position of *koy* 'go' is deemed to be borne by [~~Ramatu~~ PRO]. By implication, the last copy of *Ramatu* which survives at the spell-out in the Spec TP of the matrix clause is the antecedent of its silent copy in the Spec TP of the embedded clause which corresponds to PRO. The movement analysed here conforms to the Minimal Link Condition also known as the Shortest Move.

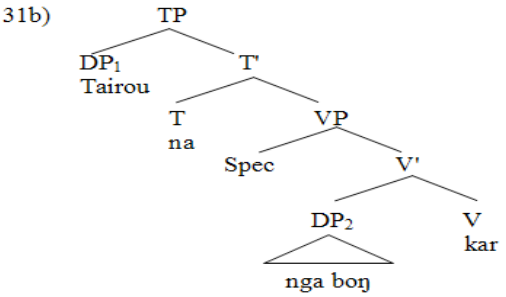
## 7. C-COMMAND, PRECEDENCE AND ANTECEDENT RELATIONS IN ZARMA

Chomsky (1981, 1982) incorporates the relation c-command into the anaphora theory of the Government and Binding framework through the definition of syntactic binding as "an NP is bound if it is coindexed with a c-commanding NP", and within the standard Binding Theory account, an anaphor must have an appropriate antecedent. From the foregoing, two notions: C-command and Antecedent are relevant to the discussion of binding conditions. Radford (1988, p.115) defines c-command as "X c-commands Y iff the first branching node dominating X dominates Y, and X does not dominate Y, nor Y dominate X", and Büring (2005, p.2) defines antecedent as "A is the antecedent of B iff (if and only if) (i) A precedes B, and (ii) A and B corefer. The relations of c-command and antecedent, as defined above, are relevant to the description of anaphora in Zarma. Let us consider the example in (31).

31a) Tairou na [nga bôŋ] kar
Tairou Perf.Pos 3sg head beat
'Tairou beat himself.'

C-command relation, as expressed in (31a), significantly helps in the interpretation of the DP *Tairou* as the antecedent of the reflexive DP *nga bôŋ*. The subject, *Tairou* c-commands the object reflexive DP *nga bôŋ* 'himself' because the first branching node above the $DP_1$ is TP and the TP dominates $DP_2$. The analysis is represented in the P-marker below.

31b)




Furthermore, *Tairou* could bind *nga bôŋ* because *Tairou* c-commands and precedes *nga bôŋ*; conversely, *nga bôŋ* could not bind *Tairou*, because it neither c-commands nor precedes *Tairou*. This, in effect, means that the two DPs in the sentence cannot be reversed without resulting into an ungrammatical expression. The reversal of the DPs is the reason for the illicit nature of the example in (32).

32) *nga bôŋ na [Tairou ~~nga~~] ~~bôŋ~~ kar
3sg head Perf.Pos Tairou beat

In addition, our use of the doubling constituent approach will bar a configuration of the type in (32) because the pronominal part of [*Tairou nga*] cannot be extracted in line with Chomsky's (2001, p.13) phase impenetrability condition (PIC). In this regard, (32) is not only illicit for contravening the c-command condition; it is bad because PIC will not allow *nga* alongside *bôŋ* move into the Spec-TP as it is the case in (32).

In double object constructions as well, a reflexive pronoun must be c-commanded by its antecedent. This incidence is illustrated with the example in (33).

33a) Ay na ay bôŋ no noru
1sg Perf.Pos 1sg head give money
'I gave myself money.'

b. Moussa na nga bôŋ no noru
Moussa Perf.Pos 3sg head give money
'Moussa gave himself money.'

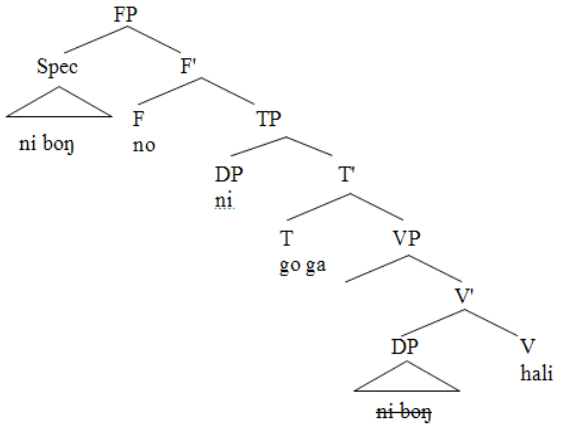
Larson (1988, p. 336), following Barss and Lasnik (1986) posits that double object structures show an asymmetry with respect to the licensing of anaphors. This may seem to be the case because the reflexives, *ay bôŋ* 'myself' and *nga bôŋ* 'himself' are c-commanded by their respective antecedents, *ay* 'I' and *Moussa*, but the anaphor-antecedent relation of the type shown in (33) is not between the two objects, indirect and direct.

On the other hand, precedence as a structural condition on reflexive pronouns predicts that the antecedent of an anaphor must linearly precede it. The examples in (31 & 33) meet this condition, making the derivation to converge. An apparent disregard for this stipulation is another reason for the ungrammaticality of the structure in (32); this is in spite of the person and number agreement between the subject and the object.

Notwithstanding the potent relevance of precedence in the definition of binding, there appears to be some amount of limitations of this notion. When the reflexive item is focused as in example (34) below, it moves to the specifier position of the focus phrase (FocP) to check its focus features, and the notion of precedence seems to have failed.

34a) Ni bôŋ no ni go ga [~~ni bôŋ~~] hali
2sg self Foc 2sg Prog deceive
'You are deceiving YOURSELF.'

34b)




The diagram in (34b) is a projection of focus phrase (FP), where the object DP *ni bôŋ* 'yourself', dominated by the V', through external merge, moves to the specifier position of the FP whose head is the particle *no*. The node F takes the TP whose head is the particle *go ga* as its complement. Also, the head V, *hali* 'deceive', a transitive verb, takes a DP complement and ultimately projects into a full VP.

Given the syntax and the interpretation of the structure in (34b), the subject *ni* 'you', analysed as a DP in the specifier position of the tense phrase (TP), still binds the object *ni bôŋ* 'yourself' but not vice versa. However, by means of a movement operation, the object linearly precedes the subject, contrary to the claim about precedence. At a glance, this situation seems to find support in Büring (2005, p.13), who posits that the inclusion of precedence in the definition of binding should be dropped. Nevertheless, I will provide explanations as to why the intuitive concept of antecedence is still relevant to the configuration in (34).

Turning to c-command, the same problem applies to its application as far as binding is concerned. In (34), the bound element *ni bôŋ* 'yourself' precedes and c-commands its binder *ni* 'you', and the derivation does not crash. In other words, the subject *ni* c-commands the object *ni bôŋ* asymmetrically, but *ni bôŋ* precedes *ni*. Interestingly, it may not be appropriate to prohibit the relevance of precedence to Zarma on the basis of the instantiation of the configuration in (34) since Zarma superficially spots both SVO and SOV. The occurrence of the reflexive item in the sentence initial position is a product of movement, making the focused copy of the reflexive pronoun to leave behind at its source position a null phonetic spell-out. Theoretically speaking, the focused DP that replicates internal merge to FocP originates from a preverbal position, satisfies the Economy Principle of Attract Closest Principle which requires that the (EPP) features of F should attract the closest DP to move to Spec-FP. The said FP has a strong head whose specifier feature must be checked in order that the FP is convergent. Of importance to this analysis is the assumption that the strong feature that requires checking does not reside in the moved element, Adesola (2005, p. 67).

From the aforesaid, we can hypothesize that focus projection represents an instance of reconstruction raising which presupposes that an element is interpreted at the base/source position and not in the position to which it is raised (cf. Zeijlstra 2013). In the words of Büring (2005, p. 250), the moved copy of an item is pronounced but is ignored at LF while the one in base position is interpreted but phonetically deleted. It therefore means that, *ni bôŋ* though precedes *ni* superficially in (34), it is interpreted at the position where we have its silent copy and not the position of its second occurrence (Spec-FP). This account implies that the antecedent of the reflexive item *ni bôŋ* in (34) still c-commands and precedes its bindee *ni*. In fact, the derivational definition of c-command as "x c-commands all and only the terms of a category y with which x was paired by merge or by move in the course of the derivation" by Epstein (1995) cited in Brody (2002, p. 27) gives further evidence for the explanation we have provided here.

## 8. CONCLUSION

Similar to situations in many languages, Zarma pronouns are not referentially defective, whereas anaphors are referentially defective items that depend on linguistically expressed antecedents for interpretation. On the basis

of the data described in this study, pronouns show pronominal and anaphoric properties; they can be locally bound. Pronouns can perform emphatic role but reflexive and reciprocal do not seem to serve any intensifying role in Zarma. Reflexive and reciprocal share some amount of semantic and syntactic properties; they express mutual relations and can be focused. While reciprocal appears to be inherently plural, reflexive, depending on the nature of its antecedent, could be singular or plural.

The aspects of Zarma discussed in this study show that the distribution of pronouns, anaphors (reflexives and reciprocals) and referential expressions is near-complementary. Pronouns occur in the same syntactic position as reflexives; this is in addition to pronouns being locally bound when they function as the complement of a P head to project into a PP. I analyse the situation as the one in which the doubling constituent account (Kayne 2002) appeals to operations merge and move in the derivation. In a similar fashion, control structures are treated as a residue of movement realised through operations copy and delete. The study further highlights the relevance of c-command and precedence to the Zarma data and argues that the application of the two notions is not harmful. The analysis pursued in this study as per construal relationships between some items has removed the complex networks of relations, operations, and locality restrictions from the mechanisms required to explain their distribution. In particular, this approach reveals the wane of the opposite demands on pronouns, anaphors and referential expressions imposed by the different condition effects.

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## LIST OF ABBREVIATIONS USED

The following abbreviations/symbols are used in this paper:

Agr = Agreement Marker, AP = Articulatory Phonetic, BT = Binding Theory, Comp = Complementizer, Conj = Conjunction, Det = Determiner, DP = Determiner Phrase, EPP = Extended Projection Principle, F = Focus Marker, FP = Focus Phrase, Imperf = Imperfective Aspect, Inf = Infinitive Marker, LF = Logical Form, Neg = Negative Marker/Negation, NegP = Negation Phrase, P = Preposition/Postposition, Perf = Perfective Aspect, PF = Phonetic Form, Pl = Plural, Pos = Positive, PP = Preposition/Postposition Phrase, Prog = Progressive Aspect, Recip = Reciprocal, Sg = Singular, Spec = Specifier, T = Tense, TP = Tense Phrase, V = Verb, VP = Verb Phrase, θ = Theta, Ø = Phonetically realized as zero, * = Denotes an ungrammatical expression, 1, 2, 3 = First, Second, Third Person