Internal structures of relative clause in Zarma

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Abstract

Although extensive works have been done on languages of the Nilo-Saharan family with generalizations made about the defining characteristics of their relative clauses, little can be said of this in relation to Zarma despite being a member language of the family. This paper investigates the features of Zarma relative clauses using the raising approach as well as some relevant aspects of the Minimalist Program (MP). Although, Zarma relative clauses are typologically postnominal, the study shows that the language employs discrete relative clause marker different from relative pronoun just as it uses gapping and resumptive pronoun strategies. Zarma relative clauses largely follow the universal pattern though relativisation in the language does not yield Subject object verb (SOV) ordering as assumed in some literature.

1   Introduction

This paper examines the syntax of relative clause constructions in Zarma, a prominent language of the south western part of Niger Republic. Although Zarma, a Nilo-Saharan language of the Songhay family spoken in the west of Niger Republic has received extensive attention in linguistics study, several aspects of its syntax still require systematic linguistic study. One of such is the architecture of Zarma's relative clauses. Interestingly, a number of descriptive accounts on the topic exist in other Songhay-related or sister languages (cf. Heath 1999a, 1999b, 2014, 2017; Christiansen 2010; and Kossmann 2010, among others). Tersis (1980) gives an account of the relative clause in Zarma, providing information about its internal structure i. e., the different positions that are relativisable. Similarly, Sibomana (2008) presents the characteristics of the relative clause in Zarma, stating that a series of transformations such as Imbrication, Equi-NP deletion, and Insertion of *ka* are involved in its derivation. Sibomana's account is not too different from that of Tersis (1980), who presents several possibilities of insertions inside the sentence where a relative clause is integrated. This study assumes that the views did not explain some interesting aspects of the syntax, typology, as well as semantics of relative clause constructions in Zarma. I need to stress that this study does not aim to invalidate the models adopted by Tersis (1980) and Sibomana (2008) but it aspires to present an analysis of the relative clause, which is consistent with some of the recent theoretical analyses of relatives. According to Downing (1978: 378), cited in Vries (2002: 14), a universal syntactic characterisation of relatives is impossible. This is so because languages vary with respect to the way relative clauses are formed, even within a single language as it is possible to have more than one distinct way of forming a relative clause. This simply means that relative clauses manifest in many different ways. To this end, this paper attempts to find out

facts about the syntax of relative clause constructions in Zarma. According to Keenan/Comrie (1977), relative clauses could be postnominal, prenominal and internal based on the position of relative clauses with respect to the main clause. Vries (2002: 20) refers to the internal type as circumnominal and adds the fourth one known as correlatives. As far as the Zarma data used in this article is concerned, similar to what other languages (related/unrelated) allow, relative clauses in Zarma are essentially postnominal. Languages categorized as mainstream Songhay have a single strategy which makes use of the invariable relative morpheme /kaa/ in Timbuktu (cf. Heath 1999a: 186) or /kaŋ ~ kan ~ ka/ in Gao (cf. Heath 1999b: 241). My consultants consistently produce *ka* as the invariable relative complementizer that introduces relative clauses. In some texts however, the item is realised as *kaŋ* (cf. *Cawyan Zarma Sanni*, an instructional course in Zarma, lesson 13), while in others it is articulated as *kan*. These different forms are variants depending on the dialects (cf. Sibomana 2008: 93). As shown in (1), the relative marking morpheme occurs immediately after the head NP.

(1)

a	*Hincini*	*Ka*	*Sheu*	*day*
	goat	RM	Sheu	buy
	'The goat which Sheu bought'			
b	* *Hincini*	*Sheu*	*day*	
	goat	Sheu	buy	

As will be shown later in this paper, the particle is homophonous with *ka* 'that', a complement clause introducer. The relative morpheme *ka* can be distinguished from its use as a complementizer 'that' on the basis of its syntactic position i. e. verb complement. In some available texts, i. e. Grigson (2002: 29), Sibomana (2008: 90), the particle is described as a relative pronoun but, here, I will label it as a relative marker because it does not count or function as a personal or interrogative pronoun in the language. Also, it is invariant because no matter the feature of the head NP, the relative particle is always the same. This implies that the relative marker does not share phi-features like number, gender, person and agreement with the head NP. It is equally obligatory in the derivation of relative clauses in Zarma because the absence of the relative marker does not make a relative clause legitimate. I attribute the ungrammaticality of the structure in (1b) to a lack of the relative marker. This fact is alluded to by Kossmann (2010). Taking a cue from (1) above, relative clauses are derivations in which a full-fledged sentence is turned into a subordinate clause in a way that it becomes a modifier of an NP which forms an integral part of the main clause.

The paper adopts Kayne's (1994) raising approach for the theoretical account of the subject matter, complemented with relevant insights from Chomsky's (1995) Minimalist Program. Data employed for the study was elicited from a variety of Zarma spoken in Niamey, the capital of Niger Republic. Large chunks of the primary data are transcriptions from conversations with language consultants. Secondary data are from published works such as linguistic articles and written texts for Zarma speakers and learners. The study largely uses the official orthography of Zarma which this work considers non-phonemic due to the influence of French, the country's official language. Therefore, readers who are familiar with the literature on Zarma will notice divergence between the available texts and some of the data. Though Zarma is a tone language, most published texts especially those for speakers and learners do not

mark tone (cf. Cawyan Zarma Sanni, an instructional course in Zarma, 2020). This is partly because the meaning of a word is almost always unambiguous in its context of use. To this end, sparing attention is paid to tone marking in this paper.

The rest of the paper is organised as follows. Section 2 discusses the relative clause as a noun modifier. Section 3 exemplifies how the determiner (definite) and its subsets – demonstratives and numerals – interact in the formation of relative clauses. Section 4 discusses features of the relative clause constructions as subordinate/embedded clauses. Section 5 accounts for the alternation of arguments (theme and recipient objects) as it relates to relative clause formation. The features that define relative and complement clauses are examined in Section 6, while Section 7 is the conclusion.

2   Relative clause as a noun modifier

Generally speaking, a relative clause is a subordinate clause which limits or defines the reference of the head noun. Traditionally, there are restrictive (defining) and non-restrictive (non-defining/appositional) relative clauses. It would not be speculative to suggest that there is no phonological nor syntactic device in Zarma which distinguishes between restrictive and non-restrictive relative clauses. Principally and consistently, relative clauses in Zarma modify their host (head of a noun phrase), giving no room for an alternative interpretation of the clause. As will be discussed in Section 3, the head NP of a relative clause may be morphologically marked as definite, indefinite or generic. Regardless of their morphological shapes, the head NP of the relative clause in Zarma is always semantically definite. This may be the reason why Zarma relative clauses are simply restrictive. This is similar to the situation in Kwa languages, which only use the restrictive relative clause type (cf. Saah 2010: 102). Tentatively, this description of Zarma supports the assertion that distinction between restrictive and non-restrictive clauses is not marked in African languages (cf. Watters 2000: 225, cited in Saah 2010: 102). However, Watters' generalization is contradicted by Christiansen (2010: 236) who identifies non-restrictive relative constructions in Tadaksahak, a Berberised Songhay language spoken in Mali. As it is with other languages, relative clauses in Zarma are qualifiers. The example in (1a) reveals that a relative clause in Zarma is postnominal i. e. embedded relative as a noun modifier which comes after the noun it modifies. This contrasts with Japanese and Turkish (Payne 1997: 326) where relative clauses may occur before the head noun; or examples like Tamasheq (cf. Christiansen 2010: 226) and Kusaal (cf. Abubakari 2019: 30) which are considered to have relative clauses with an internal head. Hornstein/Nunes/Grohmann (2005: 65) describe relative clause as a sentence that can function as a kind of giant adjective. This is similar to Sibomana's (2008: 85) description of relative clause in Zarma as a sentence having the same function as an adjective. Consider the following examples.

(2)

a *Zaara   ka   Zouretou   zay*
   cloth   RM   Zouretou   steal
   'The cloth which Zouretou stole'

b *Aluboro   ka   ŋwa   dundu*
   man   RM   eat   yam
   'A/the man who ate yam'

Example sentences in (2) illustrate a number of properties with which relative clause in Zarma is associated. The modified nouns are *zaara* 'cloth' in (2a) and *aluboro* 'man' in (2b). In each case, the antecedent noun phrase occurs on the left edge or periphery of the clause and is immediately followed by the relative morpheme *ka*. I assume, following Downing (1978: 378), cited in Vries (2002: 14), that there is coreference between terms inside and outside the relative clause, and the relative is an assertion about the relative NP. This is strongly in agreement with the raising analysis, where the head is assumed to be generated and interpreted in the relative clause; after raising, it is semantically part of the main clause too (cf. Vries 2002: 77).

On the basis of the morpho-syntactic property of the structures in (3), I shall assume that the embedded relative phrase (RelP) in the NP obligatorily contains a copy of the NP which has been relativised. This means that the NP *bonkare* 'cloth' synonymous to *zaara,* externally merges with *dàŋ* 'wear' in the embedded clause but gets raised to the specifier position of the RelP to check its relative feature, leaving a phonetically null copy behind.

(3)
a *Iri   di   bonkare* [*ka   Sheu   dàŋ   <bonkare>*]
   1pl   see   cloth   RM   Sheu   wear
   'We saw the cloth which Sheu wore.'
b *Hincini* [*ka   Sheu   day   <hincini>*] *à   bú*
   goat   RM   Sheu   buy   ?   die
   'The goat which Sheu bought died.'

Each of the bracketed expressions in (3) is a relative clause because it contains what is recognised as the relative marker *ka* that serves as the head of the projection. By configuration, *bonkare* 'cloth' in (3a) originates as the object complement of the verb *dàŋ* 'wear' but gets raised to a position before the relative marker, where it functions as the object of the matrix clause. In (3b), *hincini* 'goat', the relativised NP is also a constituent that is semantically shared by the matrix clause and the relative clause. The implication of this account is that the θ-role and the syntactic role that each of the relativised NPs plays in their respective relative clauses, are in principle independent of its roles outside the relative. To this end, in (3a) *bonkare* is the theme in the main clause as well as in the relative clause. It also functions as the object in each of the clauses. In (3b) however, *hincini* is the pivot NP. It is an experiencer in the main clause and a patient in the relative. Syntactically, it is the subject in the matrix clause and the direct object in the relative clause.

In line with the Split-CP Hypothesis (cf. Rizzi 1997), this study analyses each of the bracketed expressions as a projection of RelP which serves as a satellite to their respective NPs. Thus, the last occurrence of the NP *bonkare* in (3a) stands in a spec-head relation with the relative marker *ka* and the whole RelP serves as the complement of the verb *dí*. I hold this view because *ka* is not a relative pronoun, as such; it could not have been the case that the identical NP in the insert clause changes to *ka,* as it was the case in the traditional account (cf. Yusuf 1997; Sibomana 2008).

As pointed out in all the examples in (3), relative clauses are preceded by the head nouns to which they serve as modifiers. This account is a proven piece of evidence for the Head-Complement order proposed for Zarma in Jayeola (2019). As hinted in the preceding paragraph, there is no compelling reason to refer to *ka* as a relative pronoun although it is insensitive to case marking just like personal pronouns (cf. Jayeola 2016). Also, *ka* is not a true pronoun because apart from functioning as the relative marker, it cannot be used to substitute for a noun phrase or a single noun in an argument position.

3   Co-occurrence of relative clauses, determiners and other modifiers

Section 2 describes the relative clause as one of the satellites of a NP which by the head-complement order proposed for Zarma has the order D<N<RelP. I notice in the Zarma examples that when the head noun in a relative clause is modified by an adjective, the adjective occurs closer to the noun than the relative clause; a situation that allows the adjective to automatically specify or define only the head noun. Consider in this regard the following examples.

(4)

a *Fuwo   taji   ka   ay   cina*
   house.Def   new   RM   1sg   build
   'The new house which I built.'

b **Fuwo   ka   ay   cina   taji*
   house.Def   RM   1sg   build   new
   (Intended meaning: 'The new house which I built.')

c *Tatanbale   hibi   kayna   ka   ay   day*
   pigeon   black   small   RM   1sg   buy
   'A/the small black pigeon which I bought.'

d *Hansi   beri   híbí   ka   ay   na   wi*
   dog   big   black   RM   1sg   Perf   kill
   'A big black dog which I (have) killed.'

e *Hanso   beri   hibi   ka   ay   na   wi*
   Dog.Def   big   black   RM   1sg   Perf   kill
   'The big black dog which I (have) killed.'

The linear ordering of constituents suggested by the examples in (4) indicates that the relative clause marker *ka* consistently occurs after an adjective or its series that specify over the head noun. It is ungrammatical for the RelP to occur before adjective, which explains the ungrammaticality of (b). Examples (4c and d) show that adjective stacking is not defined by any specific order. The definite/indefinite distinction made in the glossing of the data in (4) is due to the presence of the definite marker *o* in (4a and e). In fact, outside relative syntax, when this element or its variant accompanies any NP/N, it marks the noun phrase/noun as definite (cf. Jayeola 2019). In (4c) for instance, where the particle is absent, *tántábàlé* refers to a particular pigeon in the context of the expression. This is the same with *hansi* in (4d). As examples (4a and e) indicate, Zarma places determiners at the right edge of the noun phrase, a common phenomenon in West African languages (cf. Creissels et al. 2008: 142). However, the pattern found in Zarma is different from the one found in Kanuri where postnominal relatives are immediately juxtaposed to their antecedent, but they are followed by a definite marker. Simp-

ly put, Kanuri allows relative clause to precede the definite determiner whereas relative clause occurs after definite determiner in Zarma. The co-occurrence of definite/indefinite item with adjective and relative clause indicates that each of them occurs in different positions. I will not go into the details of a proposal for an analysis that accounts for the projection of a DP that takes an N/NP as its complement here; reader is referred to Jayeola (2019).

The behaviour of numerals in terms of interaction and co-occurrence relation in the generation of relative clause is similar to that of adjectives just explained. The numerals which ordinarily modify the head noun stand between the head noun and the relative clause introducer, (5a) is ill-formed because numeral precedes the head noun. Consider the examples in (5).

(5)

a   **Hinza*   *zaama*   *ka*   *ni*   *day*
      three   knife   RM   2sg   buy
      'The three knives which you bought.'

b   *Zaama*   *hiŋka*   *taji*   *ka*   *Musa*   *day*
      knife   two   new   RM   Musa   buy
      'The two new knives which Musa bought.'

c   *Zaama*   *taji*   *hiŋka*   *ka*   *Musa*   *day*
      knife   new   two   RM   Musa   buy
      'The two new knives which Musa bought.'

d   *Tasa*   *kayna*   *waraŋka*   *ka*   *ay*   *dí*
      plate   small   twenty   RM   1sg   see
      'The twenty small plates which I saw.'

e   *Tasa*   *waraŋka*   *kayna*   *ka*   *ay*   *dí*
      plate   twenty   small   RM   1sg   see
      'The twenty small plates which I saw.'

f   *Hansi*   *beri*   *zongu*   *ka*   *ni*   *zay*
      dog   big   hundred   RM   2sg   steal
      'The hundred big dogs which you stole.'

g   *Hansi*   *zongu*   *beri*   *ka*   *ni*   *zay*
      dog   hundred   big   RM   2sg   steal
      'The hundred big dogs which you stole.'

As indicated by the glossing of the data in (5), Zarma allows relative clauses whose noun heads are not supported by an overt determiner element similar to the situation in Kwa languages (cf. Aboh 2010: 28). This is indicative of the fact that Zarma relative clauses are mainly restrictive. Tentatively, as the data in (5) have indicated, I feel that numeral, adjective and relative clause occupy different syntactic positions thus, they can co-occur. When numerals and adjectives in Zarma modify a noun in a relative clause, the order of the two modifiers is not fixed; it can be numeral before adjective or adjective before numeral without any corresponding semantic effect on the derivation. However, the relative clause will always occur after the two modifiers, an indication that they (numeral and adjective) have scope over the head noun that is being modified by the relative clause.

The claim I would like to make on the flexible order between numerals and adjectives is partly in tune with Hawkins' (1983) principle of mobility. The principle predicts that adjectives, demonstratives, and numerals are more likely to move around the head because they are mo-

bile. In effect, I will analyse the numeral as a head that projects and selects a noun or noun phrase as its complement, making the numeral to scope over the N/NP. The presence of the N/NP at the phrase initial position is as a result of movement that is triggered by the need for the numeral to check its strong specifier features. On the other hand, the occurrence of adjectives before or after numerals is understood as the effect of the adjunct role which adjectives normally play. The derivation is captured in Image 1.
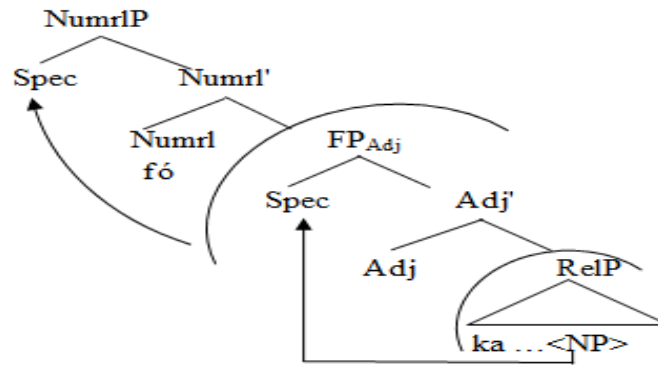

Image 1: Co-occurrence of numerals and adjectives in relative clause

The structure in Image 1 indicates that, when adjective precedes numeral, the whole functional phrase (FP) moves to the spec- NumrlP where the RelP is not phonetically realised. However, when the adjective follows the head, (numeral), the NP moves cyclically through spec-FP to Spec-NumrlP. For the sake of emphasis, I like to maintain that the co-occurrence of numeral and relative clause within the same derivation indicates that they belong to different syntactic categories.

The mechanism for the remarkable free word order patterns just discussed is at the moment not transparent. To explain the phenomenon in a fine grained manner, I contemplate that numerals in Zarma do not belong to a uniform syntactic category. The language appears to show internal variation in the properties of numerals same as for adjectives as well as nouns. If this assumption is well driven, then, the account provided for adjective stacking still suffices. However, the proposal is confronted with the challenge of drawing semantic as well as phonological distinctions between adjectives and numerals. Besides, a remarkable difference exists between the syntax of numerals and that of adjectives in Zarma: adjectives can be stacked or concatenated, however in terms of distribution, numerals cannot be serialised. This is because number reference reflects a unit of specific attribute with a one-to-one relationship with the head Noun. At the moment, I cannot account for the similarity in the word order patterns discussed above because they seem to be arbitrary. Further study is required in this respect.

Demonstrative as a subset of determiners can also co-occur with relative clauses in Zarma. Characteristically, demonstratives project and select noun as complement just as the projection of the head *ka* drives the relative clause. On account of their co-occurrence possibility, this paper proposes that demonstratives and relative clauses occupy different syntactic positions. This is illustrated in (6).

(6)

a *Hincini odi ka ay day*
   goat   that   RM 1sg buy
   'That goat which I bought.'

b *Woi bora ka iri ga bay*
   this   girl   RM 1pl Imperf know
   'This girl who we know.'

c *Woi bora ka iri mo bay*
   this   girl   RM 1pl Neg   know
   'This girl who we do not know.'

d *Gobu wo ka ay day*
   stick   this   RM 1sg buy
   'This stick which I bought.'

A cursory look at (6) shows that two variants of the proximal demonstrative exist in Zarma. These are *woi* 'this/these' which consistently occurs before its complement NP/N and *wó* which linearly follows its complement. When demonstrative, adjective and relative clause modify an NP/N, the NP/N always precedes the adjective while the demonstrative, when it is *woi,* occurs before the modified NP/N. The demonstrative follows the adjective when it is *wó* or *ódì.* This order is not reversible otherwise the derivation will crash. Consider the examples in (7).

(7)

a *Woi bora kuku ka iri dí*
   this   girl   tall   RM 1pl see
   'This tall girl who we saw.'

b **Woi kuku bora ka iri dí*
   this   tall   girl   RM 1pl see
   (Intended meaning: 'This tall girl who we saw')

c *Hincini hibi odi ka iri day*
   goat   black   that   RM 1pl buy
   'That black goat which we bought'

d **Hincini odi hibi ka iri day*
   goat   that   black   RM 1pl buy
   (Intended meaning: 'That black goat which we bought')

e *Gobu kayna wo ka ay day*
   stick   small   this   RM 1sg buy
   'This long stick which I bought.'

f **Gobu wo kayna ka ay day*
   Stick   this   small   RM 1sg buy
   (Intended meaning: 'This small stick which I bought')

All the asterisked expressions in (7) are bad because the head of the projections DEM shows up in the medial position contrary to the prediction of the LCA. In line with the LCA, the ex-pected uniform order is Dem-Adj-Noun-RelP but this gets altered at the superficial level as a result of movement. To this end, expressions in (7b, d and f) are ill- formed on account of a movement constraint: in (7b), *bora* 'girl' started out as complement of the adjective *kuku* 'tall' and is supposed to raise to the spec-AdjP to check the strong complement feature of *woi*.

The same explanation suffices for (7d and f) where *hibi* 'black' and *kayna* 'small' are functional projections that occur between the demonstrative particles (ódì and wó) and the NPs *hincini* 'goat' and *gobu* 'stick' respectively. To derive the acceptable surface order, the NPs should move to the Spec-AdjP to form a noun-adjective sequence; the entire noun-adjective sequence hosted by the functional AdjP moves to the Spec-DemP. This explains why (8c and e) converge and (7d and f) crash for failing to follow the specifications. At any rate, the freedom in this regard is dependent basically on the features of the demonstrative item that need to be checked: the refinements introduced into the analysis are not structure dependent but are determined by the features of the lexical items (wó/ódì). For instance, *ódì* and *wó* have strong specifier features that must be checked in overt syntax.

It is possible for a demonstrative to function as the sole pronominal head of a relative clause and it may be modified without NP head as shown in (8).

(8)

a *Ay*   *di*   *wo*   *ka*   *ni*   *ga*   *ba*
   1sg   see   that   RM   2sg   Imperf   want/like
   'I saw the one that you want/like.'

b *Woi*   *kulu*   *ka*   *kaa*   *ne*
   that   all   RM   come   here
   'All those that came here.'

In (8a), *wo* is the pivot, the sole pronominal head that plays the role of the direct object in the matrix clause same as in the lower clause. In (8b), *woi* as a pronominal head is modified by the quantifier *kulu* 'all' to give the constituent a sense of 'all those'. The constituent *woi kulu* is assumed to originate in the subordinate clause, and is subsequently raised to the specifier position of *ka*, the head of the RelP.

So far, our discussions have shown that when a merger operation (external merge) is performed, a constituent structure is formed and the order can be affected or altered by movement to designated specifier positions through internal merge. Nonetheless, the pertinent thing about the behaviour of demonstratives, numerals and adjectives in relation to relative clauses is that, whenever any of them co-occurs with relative clause; it must precede the relative clause although each of demonstratives, numerals and adjectives specifies or has scope over the head noun.

4   Relative clauses as subordinate clauses

From our analysis of the relative clause in Zarma, it is clear that the particle *ka* serves the grammatical function of introducing a subordinate clause, which within the Split-CP hypothesis (cf. Rizzi 1997) is realised as a relative phrase (RelP). Cross linguistically, relative clauses often contain what is called a "gap" or a place where some part of the clause is missing. Given that *ka* does not display any difference in terms of the properties of the relativised NP, I consider it an unlikely relative pronoun. The structure of the relative clause in Zarma is well defined; the relative marker takes the initial position at all times. Consider the following examples.

(9)

a   *Aluboro*   *ka*   *ŋwa*   *dundu*   *zuru*   *koy*   *fuu*
     Man   RM   eat   yam   run   go   house
     'A/the man who ate yam went away.'

b   *Hincini*   *ka*   *Sheu*   *day*   *a*   *bu*
     Goat   RM   Sheu   buy   ?   die
     'The goat which Sheu bought died.'

c   *Ay*   *di*   *fuu*   *ka*   *Kadi*   *cina*
     1sg   see   house   RM   Kadi   build
     'I saw the house which Kadi built.'

From the examples so far given, it is apparent that something undergoes A'-movement whenever relativisation occurs. At first sight it might seem implausible to propose that the constructions in (9) show any overt trace of movement. This will then align with Heath (2014: 341), who in his treatment of relative clauses in Humburi Senni, a Songhay language, assumes that the coindexed NP inside the relative clause is deleted. However, a closer look at (9c) for instance shows that the verb *cina* 'build' is a transitive verb that requires a noun phrase to complement it, but there is no such item in its vicinity and the derivation still converges. This is a possible hint that such a relative clause construction in Zarma may after all involve a movement component. The situation indicates that within the clausal architecture of Zarma, the relative marker is part of the numeration which enters into the derivation through external merge. The noun phrase modified by the relative clause corresponds to the relativised item whose movement creates a gap inside of the relative clause, indicated by a copy of *bonkare* in angled brackets.

(10)

     Iri   *di*   *bonkare*   [*ka*   *Sheu*   *daŋ*   *<bonkare>*]
     1pl   see   cloth   RM   Sheu   wear
     'We saw the cloth which Sheu wore.'

There is evidence against an approach which assumes that the relative marker *ka* is merged in the object argument position of the verb *daŋ* 'wear' inside of the lower TP and then raises to head RelP. Part of this is syntactic in nature. The argument position of the verb *daŋ* in the lower clause is not a head position, thus, the relative marker could not have moved from that position. Again, the relative marker is not taken for a relative pronoun so, it could not have replaced the argument of the verb *daŋ*.

One approach that provides a better account for some properties of the relative clause in Zarma is the raising/promotion analysis proposed by Kayne (1994). Following from Kayne's proposal, the derivation is deemed to involve the promotion of material from the subordinate clause into a matrix position where it fills an erstwhile empty position. This alternative approach does not see Relativisation as a movement to the left periphery (cf. Rizzi 1997). In the spirit of minimalism, the proposed empty position corresponds to the head NP that is relativised and occupies the Spec-RelP. It then means that the relativised item can originate within the *ka* clause as subject, direct object, a complement of a preposition or postposition, or a genitive argument before being raised to the pre- *ka* clause position. The derivation is represented in the schema in Image 2.
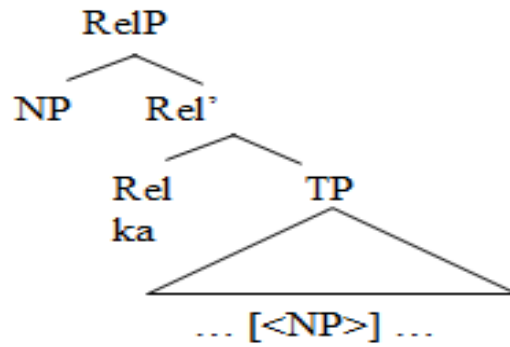
Image 2: The general architecture of Zarma relative clause

The NP (its second identical occurrence) in the subordinate clause cannot be overtly spelled out but it is syntactically present, and as well semantically interpreted. This account preserves the Head Movement Constraint, shows a tangible Condition C effect, and makes possible the availability of reconstruction with variable binding.

The relative clause of the type I have so far treated is the one in which the head NP and the relative clause are contiguous. However, in (11) extraposition is possible; the head NP and the relative clause are separated. In each of (11a and b), the head NP is a preverbal subject and its associated relative clause is extraposed to the position following the main-clause verb.

(11)

  a   *Boro*   *fo*   *furo*   *fuwo*   *ra*   [*ka*   *na*   *nooru* *zay*]
      person   one   enter house.Def P   RM   Perf money steal
      'One person broke into the house who stole money.'

  b   *Aluboro* *fo*   *kaa*   [*ka*   *na*   *Mariama* *no*   *nooru*]
      Man   one   come RM   Perf Mariama   give money
      'One man came who gave Mariama money.'

In (11a), the VP *furo fuwo ra* 'broke into the house' occurs between the head NP *boro fo* 'one person' and the relative clause, while in (11b) the head NP *alubora fo* 'one man' is separated from the relative clause by the VP *kaa* 'come'. Despite the separation, the head NP and the relative clause still denote one referent, forcing a restrictive relative reading. This is contrary to Saah's (2010: 102f.) analysis of extraposition in Akan.

In line with the analysis in Image 2, the sentences in (11) are ones in which the head NP is moved leftward, stranding the relative clause. The leftward movement of the head NP is to fill the empty slot in the subject position of the matrix clause. This contradicts Heath's (2014: 350) description of extraposition in Humburi Senni. Heath labels a relative clause separated from its head NP as an instance of right dislocation, a concept which Kayne's (1994) LCA completely rules out.

This is probably the best place to point out the effects of relativisation on constituent order. What I have observed in the Zarma data seems to contradict a generalisation which Moseley/ Asher (1994: 293) make about Nilo-Saharan languages that "Nilo-Saharan languages are further noteworthy for the diversity and, in some cases, complexity of their word order strategies. Some central Sudanic languages have SVO in main clauses but SOV in relative clauses:

Dinka (East Sudanic) has SVO and S AUX OV in main clauses but VSO in subordinate clauses".

In the absence of TNS or ASP element in both main and subordinate clauses, Zarma has SVO in both main and relative clauses. Relativisation does not produce SOV in Zarma; OSV is possible only when the object of the verb in the relative clause is relativised. There are few other effects of relativisation on constituent order when I consider especially double object constructions. I shall take up the analysis of this phenomenon in Section 5.

As the different sentences in (12–15) indicate, relative clauses in Zarma can be embedded in the NPs that correspond to the following syntactic positions: a subject, a direct object, a complement of a preposition or postposition as well as a genitive argument.

(12)

    a *Kadiri   ka   <Kadiri> day   zaara   Juwayra se*

	Kadiri	*ka*	*<Kadiri>*	*day*	*zaara*	*Juwayra*	*se*
a	Kadiri	RM		buy	cloth	Juwayra	P

'Kadiri who bought a/the cloth for Juwayra.'

	Hincini	ka	Sheu	day	<hincini>	a	bu
b	Goat	RM	Sheu	buy		?	die

'The goat which Sheu bought died.'

In (12a), it is the subject that corresponds to the relativised NP whereas the direct object is relativised in (12b). In each case, a copy of the relativised NPs is left at the movement site. In (13a), it is the complement of the dative postposition *se* 'for' that is relativised while in (13b), the instrumental preposition *ńda* 'with' has its complement relativised.

(13)

	Juwayra	*ka*	*Kadiri*	*day*	*zaara*	*<Juwayra>*	*se*
a	Juwayra	RM	Kadiri	buy	cloth		P

'Juwayra whom Kadiri bought a/the cloth for.'

	Gobu	*ka*	*ay*	*na*	*Ramatu*	*kar*	*nda*	*<gobu>*
b	Cane	RM	1sg	Perf	Ramatu	hit	P	

'The cane with which I beat/hit Ramatu.'

As the sentences in (13) demonstrate, each of the postposition and preposition is stranded in post verbal position when its complement NP is relativised . This is counter evidence for the relative-pronoun analysis of *ka* in Zarma, as indicated in (13), *ka* does not attract the P in either case (cf. Heath 1999a: 192). Examples (15a) and (b) indicate that Zarma makes use of prepositions and postpositions. This description is not at all exhaustive as there is the probability that other forms of prepositions and postpositions may behave differently from *ńdà* 'with' and *se* 'for' as shown in (13). This may be so because adpositions in Nilo-Saharan are reported to be derived from different sources (cf. Creissels et al. 2008: 124). Beside the different sources, it appears that there is a clear syntactic distinction in the behaviour of PPs when they are focused. However, due to lack of space I will not discuss the issues further.

When the relativised NP is the entire genitive construction i. e. possessor-possessed NP, there is internal merge of the NP and its phonetic features are given a null spell out, as shown in (14).

(14)

    a   [*Kadi   mota*]   *ka*   *ay*   *day* *<Kadi   mota>*
       Kadi   car   RM   1sg   buy
       'Kadi's car which I bought.'

    b   [*Ni*   *tahamu*] *ka* *Alli* *daŋ* *<ni*   *tahamu>*
       2sg   slippers RM   Alli   wear
       'Your slippers which Alli wore/put on.'

However, a resumptive possessive pronoun is present each time the relativised NP corresponds to the syntactic position of a possessor. As shown in (15), the resumptive possessive pronoun is bound by the relativised item; hence it is interpreted as a bound variable, which is similar to the phonologically null copy in a non-resumptive relative strategy in (14). In addition, the resumptive possessive pronouns share intrinsic phi-features with the possessor NP.

(15)

    a   *Kadi* *ka*   *ay*   *day*   *[<Kadi > a mota]*
       Kadi RM   1sg   buy   RP   motor car
       'Kadi whose car I bought.'

    b   *Ni*   *ka*   *Alli* *daŋ* *ni*   *tahamu*
       2sg   RM   Alli   wear   RP   Slippers
       'You whose slippers were worn by Alli.'

This study assumes that the use of resumptive pronouns in the genitival argument positions in (15a and b) is a repair strategy required for the derivation to converge. One significant implication of the data in (15) is that Zarma does not show grammatical restrictions on elements that are relativisable as far as the NP Accessibility Hierarchy is concerned (cf. Keenan/Comrie 1977; Abubakari 2019: 55).

If Buli (cf. Sulemana 2012) and Koyra Chiini (cf. Heath 2014) are placed beside Akan (cf. Saah 2010) and Koyraboro Senni (cf. Heath 2014), then, languages might be divided into two categories: those that employ the use of resumptive pronouns in relative clause formation and those that do not. As far as Zarma is concerned, there is the use of unpronounced copy (otherwise referred to as gap) as well as the occurrence of resumptive pronoun in certain circumstances. Two reasons may be adduced to the observed situation: a) that the distribution depends on the position from which relativisation is legitimate; b) the feature(s) of the item(s) involved may also be a relevant factor. This means that in (15a and b), the attraction of the smallest constituent of the genitive expressions leads to a well-formed sentence with the appearance of a resumptive pronoun that agrees with the relativised item in terms of person and number. Thus, the lack of the resumptive pronoun in Buli and Koyra Chiini relative clauses and its relevance in Akan and Koyraboro Senni cannot be seen as one of the features of universal grammar or better still, a universal principle for which parameters can be set.

Finally, I assume in this paper that prepositions and postpositions tolerate gaps or phonetically null copies of their relativised NP complements because they behave as proper heads/governors in Zarma. Also, the appearance of a resumptive pronoun at the extraction site of a relativised genitive argument is understood as a last resort which is required for the derivation to converge. It is abundantly clear that Zarma relative marker is invariant; thus it could not have been responsible for the distribution of either the gap or the resumptive pronoun (cf. Nkemnji 1995). Another interesting fact about relative clauses in Zarma is that contrary to

Sulemana (2012), with or without resumptive pronouns, from reconstruction/raising, the position from which an item is relativised is known.

5   Relativisation from Object Positions

From statistical evidence or frequency of occurrence, Dryer (1992: 87) predicts that OV languages significantly prefer RelN order which is not so common among VO languages. This generalisation predicts that Zarma is not a regular SOV language as contained in a number of popular literatures. For instance:

(16)

a *Zouretou   zay   dundu*   **declarative sentence**
   Zouretou   steal   yam
   'Zouretou stole yam.'

b *Dundu   ka   Zouretou   zay*   **direct object relativisation**
   Yam   RM   Zouretou   steal
   'The yam that/which Zouretou stole.'

Example (16a) is a neutral sentence while (16b) is its relativised counterpart where the NP, *dundu* 'yam' originates as a direct V-object complement. Following Ilori (2010), I adopt the position that the invariant relative marker is merged with TP to form a *ka-* clause projection. Also, I recognise the item occurring to the immediate left of the relative marker as corresponding to the relativised NP in the V-object position. This implies that the object of the verb in the relative clause is coindexed with the noun phrase that is being modified by the relative clause whose reference is linked to it. In other words, the relativised item is deemed to have originated from within the VP thereby creating a gap inside of the *ka-* clause. The structural projection of the relative phrase is presented in Image 3 using (16b) in line with Split-CP Hypothesis (cf. Rizzi 1997).
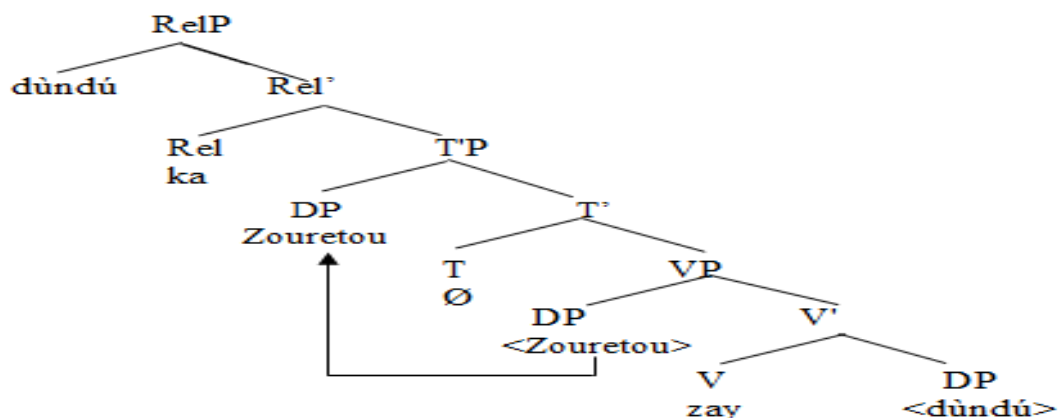

Image 3: Structural projection of the relative phrase

In Image 3, the object of the verb *zay* 'steal' is filled by a copy of the NP that is modified by the relative clause. In line with the Uniform Theta Assignment Hypothesis (UTAH) proposed by Baker (1988), and the Copy theory of movement favoured in the Minimalist Program, this paper analyses the first occurrence of *dùndú* as the phonetically null copy of the relativised object which raises to the specifier position of RelP.

The mono-transitive verb in Image 3 provides an easy account of the position from which the relativised object is extracted. It is not easy to do the same with the data in (17) and (18) where it is possible for the internal arguments of the ditransitive verb *no* 'give' to swap positions.

(17)

a *Zainabou   mota   no   Kadiri*   **double object construction**
   Zainabou   car   give   Kadiri
   'Zainabou gave Kadiri a/the car.'

b *Mota   ka   Zainabou no   Kadiri* **theme object relativisation**
   Car   RM   Zainabou give   Kadiri
   'The car which/that Zainabou gave Kadiri.'

(18)

a *Zainabou   Kadiri   no   mota*   **double object construction**
   Zainabou   Kadiri   give   car
   'Zainabou gave Kadiri a/the motor car.'

b *Kadiri   ka   Zainabou no   mota*   **recipient object relativisation**
   Kadiri   RM   Zainabou give   car
   'Kadiri whom Zainabou gave a/the motor car.'

In (17) and (18), the verb *no* 'give' semantically requires a theme and a recipient complements. Incidentally, the two complements are expressed as direct objects to the verb and the verb is equidistant from its complements. Despite the observed flexibility in the order of the object complements, each of the patterns in (19) is ruled out.

(19)

a **Kadiri   ka   Zainabou **mota**   no*
   Kadiri   RM   Zainabou car   give
   (Intended meaning 'Kadiri whom Zainabou gave a/the car')

b **mota   ka   Zainabou **Kadiri** no*
   Car   RM   Zainabou Kadiri   give
   (Intended meaning 'The car which Zainabou gave Kadiri')

The non-convergence of the structures in (19) is not tied to the relativised object NPs – theme/recipient but may be linked to the syntactic position which the unrelativised objects (bold faced) now occupy i. e. the preverbal position. Given the grammatical forms in (20), I hypothesize that Zarma does not permit scrambling of any of the internal arguments except an aspect/tense marker i. e. *na* (perfective marker) is present in the numeration that derives the basic sentence. In essence, *na* is a possible cause or trigger of the object shift (cf. Jayeola 2020).

(20)

a *Kadiri   ka   Zainabou na   mota   no*
   Kadiri   RM   Zainabou Perf   car   give
   'Kadiri whom Zainabou gave/ has given a/the car.'

b *mota   ka   Zainabou na   Kadiri no*
   Car   RM   Zainabou Perf   Kadiri give
   'The car which Zainabou gave/has given Kadiri.'

From the convergent examples in (20), it appears that the presence of the aspectual particle *nà* which has perfective reading, licenses either the theme in (20a) or the recipient in (20b) to precede the verb. The observed pattern indicates that Zarma tolerates what is known in the literature as an Auxiliated OV order.

From the theoretical point of view, I propose that the lack or absence of T/ASP element in (19) does not make the preverbal position a case checking position. This means that the VP does not in principle license another specifier, which explains why the case of the unrelativised NP is checked covertly after spell-out in strict compliance with Procrastinate. To sum up, the patterns displayed by the Zarma data point to the possibility that the language adopts the word order relativisation strategy as opposed to the case coding strategy (cf. Givon 1976; Keenan/ Comrie 1977).

6   Relative clauses versus complement clauses

One general feature that distinguishes relative clauses is that there is a direct link between an element in the relative and the matrix clauses involved such that the element in question plays a role in both. A complement clause on its part is a subordinate clause that occurs in the position of the argument of a complement-taking verb. This is illustrated in (21) below.

(21)

a   *Abou*   *dí*   *ka*   *Musa*   *na*   *dundu*   *zay*

     Abou   see   Comp   Musa   Perf   yam   steal

     'Abou saw that Musa had stolen a/the yam.'

b   *Kadi*   *ne*   *nga*   *day*   *zaara*   *Sheu*   *se*

     Kadi   say   3sg   buy   cloth   Sheu   P

     'Kadi said that she bought a/the cloth for Sheu.'

c   *Wasiu*   *ne*   *Akeem*   *si*   *day*   *zaara*

     Wasiu   say   Akeem   Imperf.Neg   buy   cloth

     'Wasiu said that Akeem would not buy a/the cloth.'

Based on the glossing of the above examples, *ka* is recognised as the complementizer that marks the force of the complement clause (cf. Radford 2004). It is overtly marked in (21a) but a null complement head obtains in (21b and c). In each instance, the verb requires a CP complement, not a DP.

The element that functions as the complementizer in (21a) is not morphologically different from the marker used to introduce relative clause. This means that *ka* is homophonous. However, the context in which the particle is found helps to disambiguate it. The syntactic position where *ka* as a complementizer is located is not the same with that of the relative clause. Incidentally, this item serves as the head which projects the CP, otherwise referred to as a Force Phrase, and the RelP in different fashions. The two *ka* can co-occur in a complex sentence where ForceP and RelP are subordinates to the main clause. One other way to account for the difference in the use of *ka* as a complementizer from that of relative marker is that, it is possible for the head that projects CP or ForceP to be phonetically empty/null but not so with RelP. It is not possible to drop *ka* in the relative clause otherwise the derivation fails to converge. Besides, *ka* as a relative clause marker appears after the NP it modifies while *ka* as a comple-

ment clause introducer is in a C-command relation with and a sister to the verb it complements. The analysis that derives the complement clause is presented in (22).

(22)

a *Wasiu   di*   [CP [C *ka*] [TP *Musa   na   dundu   zay*]]
   Wasiu   see   that   Musa   Perf   yam   steal
   'Wasiu saw that Musa had stolen the yam.'

b *Hamadou   ne*   [CP [C Ø] [TP *Akeem   si   day   zaara*]]
   Hamadou   say   Akeem Imperf.Neg buy   cloth
   'Hamadou said that Akeem will not buy the cloth.'

The linear representation of the structure in (22a) indicates that the verb *dí* 'see' is transitive and therefore requires a complement which in this case is a clause that is introduced by the particle *ka*. In (22b), *ne* glossed as 'say' is also a complement-taking verb that subcategorises for a complement clause whose head is not morphologically filled or has a head that is understood but unpronounced.

So far, my claim on the complement clause is that the item *ka* or a null item can introduce it; however, I observe a different form of the complementizer in the expression of the type below.

(23)

   Ay   ci   ni   se   ay   di   Kadi
   1sg tell 2sg that Isg see Kadi
   'I told you that I saw kadi.'

What I notice as the difference between the constructions in (22) and the one in (23) is the presence of the lexical item *se* which is homophonous with the dative postposition 'for' (21b). It is one of the versatile items in Zarma, and as used in (23), it is as an apparent alternative to the indicative complementizer *ka*. However, the relative marker *ka* does not have a variant. It is likely that the feature(s) of the verb that the complementizer phrase is complementing is the reason for the change in the form of the complementizer. The verb *ci,* glossed as 'tell' is a three place predicate which takes a CP as its second complement. From the foregoing explanations, I recognise *se* as a clause introducer which within the minimalist program constitutes a separate functional category that projects the functional phrase labelled as the complementizer phrase (CP) or force phrase (ForceP). This is illustrated below.

(24)

   Ay   ci   ni   [*se* [*ay   di   Kadi*]]
   1sg tell 2sg   that 1sg   see Kadi
   'I told you that I saw Kadi.'

Without necessarily getting into the details of the internal structure of the complement clause, the sentence in (24) is readily amenable to the VP-Shell analysis illustrated in Image 4.
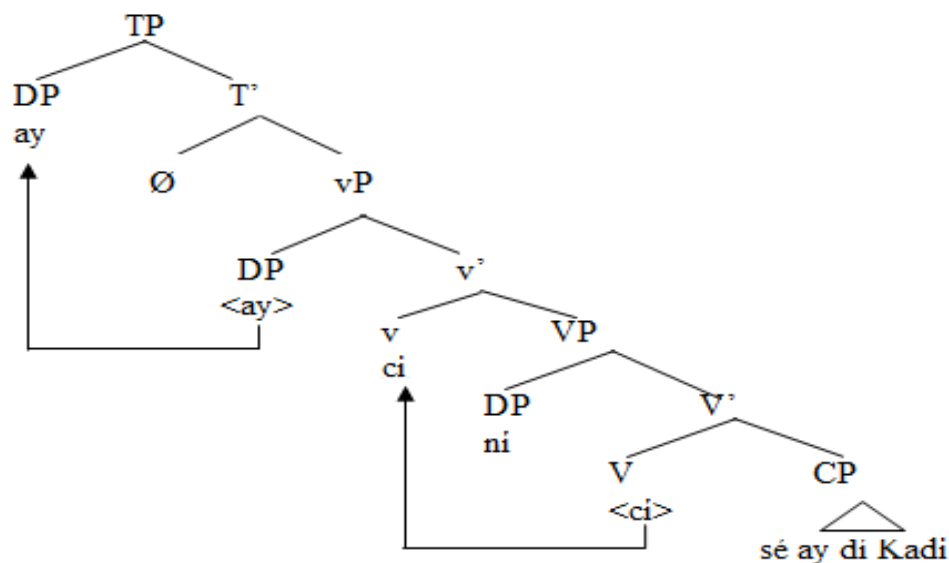
Image 4: Internal structure of the complement clause

In Image 4, the second complement of the verb *cì* 'tell' is a Complement Phrase whose syntactic position is fixed. Consequently, this study takes *se* 'that' for a clause introducer which is contiguous to the subject *ay* 'I' and ultimately projects a functional phrase known as complementizer phrase.

From the foregoing, it appears that relativisation and subordination through complement clauses do not cause a change in the order of constituents within the embedded clause. Apart from what has been said about S AUX OV, no other linearization effect can be ascribed to complement clauses. The OV order attested in (21a) where the verb *zay* 'steal' takes its object *dùndú* 'yam' to its left, is triggered by the presence of *na,* an aspectual marker (perfective) which causes the object that starts low to raise to the Spec of VP to check its accusative case features. Finally, complement clauses do not trigger any form of movement because no feature checking mechanism is induced in their derivation. Thus, no reconstruction effects are predicted.

7   Conclusion

This article has shown that Zarma only utilises the restrictive type of relative clauses and makes use of an invariant relative marker but not relative pronoun to introduce the relative clause. The data used for this study indicate that both gap and resumptive pronoun strategies are employed in the relativisation site, though the use of resumptive pronouns is restricted to genitive constructions; the resumptive possessive pronouns share intrinsic phi-features with the possessor NP. There is evidence to the effect that Zarma does not show grammatical restrictions on elements that are relativisable as far as the NP Accessibility Hierarchy is concerned. Relying on Kayne's (1994) proposal, the paper argued that the derivation of the relative clause in Zarma involves the promotion of material from the subordinate clause into a matrix position where it fills an erstwhile empty position. It therefore concludes that relativisation and subordination through complement clauses do not cause a change in the order of constituents within the embedded clause.

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Abbreviations

Adj = Adjective
AdjP = Adjective phrase
Aux = Auxiliary
CP =Complementizer phrase
Comp = Complementizer
Def = Definite Marker
Dem = Demonstrative
DemP = Demonstrative phrase
D = Determiner
DP = Determiner phrase
ForceP = Force phrase
FP = Functional phrase
Imp = Imperfective
LCA = Linear correspondence axiom
MP = Minimalist Program
Neg = Negative marker
N = Noun
NP = Noun phrase
Numrl = Numeral
OSV = Object subject verb
P = Preposition/postposition

Perf = Perfective aspect
Pl = Plural
RM = Relative clause marker
RelP = Relative clause phrase
RP = Resumptive pronoun
Sg = Singular
SOV = Subject Object Verb
Spec = Specifier
SVO = Subject verb object
T = Tense
TP = Tense phrase
VP = Verb phrase
VSO = Verb Subject Object
Ø = Phonetically realized as zero
1 = First person
2 = Second person
3 = Third person