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► **To cite this version:**

Mahamane L Abdoulaye. Particle ga/ka: Purposive, infinitive, and auxiliary verb constructions in Zarma Chiine. 2021. halshs-03349864

**HAL Id: halshs-03349864**

**<https://shs.hal.science/halshs-03349864>**

Preprint submitted on 20 Sep 2021

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## Particle *ga/ka*: Purposive, infinitive, and auxiliary verb constructions in Zarma Chiine <sup>1</sup>

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### Abstract:

This chapter uses grammaticalization theory to describe the relation between various uses of the particle *ga/ka* in Zarma Chiine (Songhay). Although *ga* functions most frequently as an infinitive marker, it very likely derives from a purposive marker *ga*, following a pattern of change found cross-linguistically. The particle however also marks more grammatical functions marking auxiliary verb constructions, and serial-like resultative constructions. The paper shows that in the less grammaticalized purposive and infinitive constructions, the particle appears in syntactically flexible *ga* + VP structure, whereas in the more grammaticalized auxiliary and resultative constructions the particle appears in a more syntactically rigid V + *ga* + V structure.

Keywords: Songhay, Zarma Chiine, grammaticalization, infinitive, auxiliary

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1 Zarma Chiine [zármá cí:nè] ‘Zarma language’, lit. ‘language of the Zarma state’, is the most important Songhay language in terms of number of speakers (R. Nicolai, 1983). The territory of the (now former) Zarma polity is today located in Western Niger and includes the *Zarmaganda*, the ancient Zarmaland proper, an area along a section of the Niger river and a large swath of territory east of the river, but also the *Zarmataray* (lit. ‘relating to the Zarma state’), an area of further expansion to the south (Dosso region, see B. Gado, 1980) that puts the Zarma people in contact with other linguistic groups. It is the main language of the capital city, Niamey. Zarma Chiine is also present in emigration areas in northwestern Nigeria and the major West African towns in particular in their popular markets.

Data from published sources are cited generally as per the original. [Check B. Hama & HSH data on ZC speakers] Otherwise the paper uses the official orthography of Zarma Chiine with some modifications: Long vowels are marked in all positions with a double letter, low tone is marked with a grave accent (àa), falling tone with a circumflex accent (âa), rising tone with a flipped circumflex accent (ǎa), while the high tone is unmarked. The abbreviations are: 1, 2, 3, 4 ‘1st, 2nd, 3rd, 4th person’; CAUS ‘causative’; COP ‘copula’; DF ‘definite’; FOC ‘focus’; INF ‘infinitive’; IPF ‘imperfective’; NEG ‘negative’; P ‘plural’; PF ‘perfective’; POSS ‘possessive’; PRG ‘progressive’; PRT ‘particle’; S ‘singular’; SBJ ‘subjunctive’; SEP ‘separator’.

### Résumé:

Cette contribution utilise la théorie de la grammaticalisation pour décrire la relation entre les différentes utilisations de la particule *ga/ka* en zarma (songhay). Bien que *ga* fonctionne le plus souvent comme un marqueur infinitif, il dérive très probablement d'un marqueur de propositions circonstancielles de but bien moins fréquentes, suivant un modèle de changement qu'on trouve dans beaucoup de langues. Cependant, la particule *ga* marque également des fonctions plus grammaticales telles que les constructions à verbes auxiliaires et les constructions résultatives. La contribution montre que dans les propositions de but et les infinitives moins grammaticalisées, la particule apparaît dans une structure « *ga* + Groupe Verbal » syntaxiquement flexible, tandis que dans les constructions auxiliaires et résultatives plus grammaticalisées la particule apparaît dans une structure « Verbe + *ga* + Verbe » syntaxiquement plus rigide.

Mots-clés : Songhay, zarma, grammaticalisation, infinitif, auxiliaire

### **Introduction**

Zarma Chiine (henceforth, ZC) has a remarkable - although areally not isolated - verb combination constructions where two (or more) verbs are linked with an element *ga* (or the variant *ka*, which is optional in Niamey city but more prevalent in other Zarma towns). This construction, like similar constructions in other West African languages (cf. N. Nikiéma, 2003), does not straightforwardly conform to canonical definitions of a serial verb construction (SVC), an auxiliary verb construction (AVC), or a verb complement construction. Nonetheless, ZC V + *ga* + V seems to fulfill functions typical of these and other constructions and hence appears in a variety of contexts and forms. The construction is illustrated with three of its functions in the following examples (see L. Sibomana, 2001, p. 222, 230):

- (1) a. Ng mò kàa g â noo ng` kaynè sè.  
3s then come GA 3s give 3s younger.sister to  
'She then came to give it to her sister.'
- b. Irkòy n` taas-oo bar g` tee dònou bònyan.  
God SEP sand-df change GA make millet balls  
'God transformed the sand into millet balls.'

- c. À dii g` hen day à nê...  
 3s catch GA cry indeed 3s say  
 ‘She started crying indeed and said...’

In example (1a) particle *ga* is clearly a subordinating conjunction introducing a full complement clause (in this case a purposive or sequential clause), which has the same subject at the main clause. In this context, there is very little interaction between the verbs’ syntactic frames or even their meaning. In (1b), *ga* introduces a verb phrase (VP) and the verbs are closer semantically in the sense that there is essentially one action described by the two verbs, as seen in the English translation, although each verbs has an independent lexical meaning. Finally in (1c), there is one main action as described by V2, while V1 can be taken to be an auxiliary expressing a grammatical meaning (aspectual, modal, and temporal, as we will see in due course). By their function, these constructions are naturally limited to the few verbs suited for expressing aspectual or modal meanings. Most descriptions of ZC focus only on the construction illustrated in (1c), which is usually taken to be an auxiliary construction (A. Hamani, 1980, R. Nicolai, 1983, B. Oumarou Yaro, 1993). For Koyra Chini, a Songhay language spoken in Djene and Timbuktu, J. Heath (1998) describes at length and near exhaustively the structures akin to those in (1b-c) and claimed that structures such as (1a) do not exist in this language.

The aim of this paper is first to explore the relationships between the three constructions in (1) and other constructions involving particle *ga*. In order to establish this relationship clearly, one case study will be presented showing the various uses of the verb *yêe* ‘return’ from a motion verb to an auxiliary verb.

The paper is cast in the grammaticalization framework (see P. Hopper and E. C. Traugott, 2003, amongst others) and takes into account typological studies of complex verb constructions (for example G. Anderson, 2011, B. Heine, 1993). The data comes mostly from L. Sibomana (2001) who presents three texts recorded with Niamey informants. This source is supplemented with my own data collected with informants and students from Niamey and other areas.

The paper is organized as follows. Section 1 presents the previous studies. Section 2 explores the purposive and some related functions of *ga*. Section 3 describes the uses of *ga/ka* as linker in auxiliary constructions (with copulas or verbs that contribute an aspectual meaning). Section 4 discusses the use of *ga* in semantically resultative constructions.

## 1. Previous studies

There are two notable descriptions of the V + *ga* + V constructions. A. Hamani (1981, p. 8) focused on the more grammatical functions of the construction where V1 expresses an auxiliary meaning. He distinguishes the following eight

such “aspectual” auxiliary meanings (each with its most frequent base verb): Ingressive (*sintìn* ‘start’), iterative (*dòona* ‘have the habit of’), potential (*hin* ‘be able’ < *hìna* ‘be able, know how’), unreal (*hoo* ‘fail’), obligative (*hìmà* ‘must, resemble’), “successive” (i.e. durative; *gày* ‘to have done for a long time’), “volitive” (i.e. desiderative; *baa* ‘want’, *waasu* ‘hurry’), and “resultative” (this in fact refers to a volitional/ intentional meaning; *haw* ‘do on purpose’). It should be noted that Hamani only gives the semantic specifications and does not characterize the syntax of these auxiliary constructions nor their relationships with other constructions implicating the particle *ga/ka*.

J. Heath (1998) is probably the most detailed description of the construction, but his study concerns Koyra Chiini (Western Songhay). J. Heath (1998, p. 304-322) proposes five regular types of constructions involving infinitive *ka* verbs, as seen next:

- |     |    |                              |   |
|-----|----|------------------------------|---|
| (2) | a. | VP + <i>ka</i> Verb          | Expresses event sequence                    |
|     | b. | Serial verb + <i>ka</i> verb | Expresses the common serial verb pattern    |
|     | c. | VP + <i>ka</i> serial verb   | Expresses a less common serial verb pattern |
|     | d. | Verb + <i>ka</i> verb        | Expresses verb-verb compound (very few)     |
|     | e. | NP + <i>ka</i> verb          | Occurs in certain idiomatic constructions   |

As one can see, all these patterns correspond to the patterns illustrated for ZC in (1b-c) only. Indeed, according to J. Heath (1998, p. 304), the *ka* + verb construction is not used in purposive clauses, or in complements of desiderative, allowing and preventing verbs. The label “serial” verb for type (2b-c) is problematic, since Heath claims that a serial verb is “[...] a verb that is specialized to occur in combination with a fuller VP, which we will call the “substantive VP””. And further he says “The full VP represents the core scenario ('boy kill dog'), while the attached serial verb adds a grammatical category (aspect, mood), motion, or a higher predicate (e.g. ‘try’)” (J. Heath, 1998, p. 304). This characterization does not correspond to the standard definitions of serial verb constructions (see Section 6 below) and indeed all verbs of the type (2b) correspond to auxiliary verbs construction in ZC (see Section 4 below), while those of the type (2c) correspond to resultative constructions (see Section 5). The situation in Koyraboro Senni (cf. J. Heath, 1999, p. 333) is very similar to that in Koyra Chiini, except that in Koyraboro Senni, the construction has somehow retained the purposive function.

In the next sections, I review the various functions of *ga* in ZC.

## **2. *Ga* in purposive, sequential, infinitive, and related constructions**

Although it is rather neglected in descriptive studies (cf. Y. Bernard and M. White-Kaba, 1994, etc.) or even lack altogether in the grammar of some

varieties (cf. J. Heath, 1998, p. 304 for Koyra Chiini and J. Heath, 1999 for Koyraboro Senni), the purposive marking function of *ga* is very frequent in ZC. Some typical usages are given next (see L. Sibomna, 2001, p. 220, 222, 224, 236, 238):

- (3) a. Mât kân ng gà tee g bay?  
 how that 3s IPF do GA know  
 ‘How would he know?’  
 Lit. ‘How does he do in order to know?’
- b. Ng mò kàa g â noo ng` kaynè banda wanaa sè.  
 3s PRT come GA 3s give 3s junior behind POSS to  
 ‘Then she came to give it to her little sister.’
- c. Ni m` ày sambu g kondà ay...  
 2S SBJ 1s take GA take 1s  
 ‘You may take me [on horse] and carry me away...’
- d. Son bòràa kûl g` koy isà nô g` nyumày.  
 now person all FUT go river FOC GA bath  
 ‘Now, may everybody go to the river and take a bath.’  
 Lit.: ‘It is going to the river that everybody will do, to take a bath.’
- e. Ni g` koy g [ngay kwàaràa muusù bèeròo kân goo  
 2s FUT go GA 3p town lion that be  
 saagyòo raa] wii.  
 bush in kill  
 ‘You will go and kill the lion lurking their town, that is in the bush.’

L. Guerro (2009, p. 92), citing S. Christofaro (2003, p. 157), defines a purposive clause as a clause coding an event the future realization of which is the goal of a performed event coded in another (the main) clause. All the examples above express two events that are in an enabling-enabled relation. Formally, the main clause and the purposive clause are loosely associated and it is no surprise that in ZC, the syntactic contexts in which the purposive construction appears are varied. In (3a) we have simple V + *ga* + V structure. In (3b) the particle introduces a tensed clause. In (3c) a direct object with the same referent is specified for each verb. In (3d) the clause containing the V1 is focalized and separated from the *ga* phrase by the focus copula *nôo*. Finally, in (3e), the preverbal direct object of V2 following *ga* is a very complex noun phrase (given in brackets). All these examples show that the purposive construction is very flexible and may represent the earliest function of the

particle *ga*.

Besides the purposive meaning, *ga* also has related usages that can be construed as further elaborations/grammaticalization of the purposive sense, chiefly the sequential and infinitive use. M. Haspelmath (1989) has discussed how in a number of languages (for example, English and German, but also languages all over the world), allative constructions grammaticalize into (motion, then non-motion) purposive clauses and finally into infinitive clauses (cf. *go to Mary's place/ go to take a picture/ buy a camera to take a picture/ to take it is easy*). I will subscribe to this general scheme, though in ZC the origin of particle *ga* is obscure. The sequential and the infinitive functions are illustrated next (data (4a) from L. Sibomana, 2001, p. 224 and (4b) from H. Hama, 1988, p. 54):

- (4) a. Ày si dir ga ni nà newò.  
1s NEG walk GA 2s leave here  
'I will not go and leave you here.'
- b. Boro si humburu moy ka yaaru Irkoy ga.  
3s NEG fear eye GA confront God to  
'One should not fear a man and then pretend to confront God.'
- c. A hindiri ga di Fàati.  
3s dream GA see Fati  
'He dreamed seeing Fati.'

In sentences (4a-b), the second verbs clearly express a sequential rather than purposive actions. In particular in (4a) the event of the second verb is more of an unintended consequence. In (4c), the V2 probably describes not a sequential but a concomitant event with the event of V1. This maybe an example of the infinitive use of “*ga + VP*”. Further cases where *ga* is a pure grammatical linker are given in the next examples (data (5a-b) from L. Sibomana 2001, p. 220, 228 and (5d) from H. Saydu Hanfiiyu, 2004):

- (5) a. Zàa ir bàabà dirà g kàa sohòn...  
since our father go GA come now  
'From the time of our father's departure up to now...'
- b. Wándoo g` kurnyòo zukù g nê: “Filaanà...”  
woman IPF husband incite GA say “Hey you...”  
'The wife was inciting the husband, saying: “Hey you...”'

- c. Ì fatta ga nêe dùngây gǒo nòo.  
 3p go.out GA say heat be there  
 ‘They went out because it is hot.’
- d. Han kulu daa zàzey kà ga nêe ngèy mà zaj...  
 day all when thieves come GA say 3p SBJ steal  
 ‘Whenever the thieves come in order to rob (him)...’

In all these examples, though one may in some cases interpret a meaning for *ga*, in reality it is a simple linker. In (5a) the construction *ga kàa* (literally ‘to come’) is frozen and functions as a complex preposition meaning ‘up to’ and can be complemented with a time or locative expression (cf. *ga kàa Maradi* ‘(from somewhere) up to Maradi’). Example (5b) presents a situation where the second verb (‘say’) seems to specify the generic action expressed by the first verb (‘incite’). However, the expression has a more frequent use where there is no actual speaking and *ga nêe* ‘to say’ simply functions as a causal subordinating conjunction, as seen in (5c-d). Finally, there is at least one example where the *ga* marker seems superfluous, as seen next (see L. Sibomana, 2001, p. 230, 222):

- (6) a. À gòò g dii g` hen **g** dii g` hen...  
 3s be GA start GA cry **GA** start GA cry  
 ‘She was crying, kept crying, kept crying...’
- b. À dii g bòori à dii g bòori.  
 3s start GA beautiful 3s start GA beautiful  
 ‘She kept becoming beautiful.’

In (6a), the third instance of *ga* (in boldface) is superfluous between two repeated instances of the same proposition. Example (6b) presents the normal structure where the repeated propositions are simply juxtaposed.

In most examples presented in this section, one has two separate events that may even occur at different times. The next section considers the auxiliary constructions where V1 does not refer to a distinct event. It is very likely that the infinitive and linking functions of *ga* allowed it to become a marker in auxiliary constructions where it is a simple grammatical linker between two verbs without a semantic contribution. Indeed in some such cases, the linker can be omitted (and in fact systematically so in some dialects).

### 3. *Ga* as a linker in auxiliary verb constructions

An auxiliary construction is generally defined as a construction with a sequence of two predicates where one expresses a grammatical meaning and the other the lexical meaning (see G. Anderson, 2006, p. 7 and references cited there). In this



sense, an AVC refers only to a single event, in contrast to a purposive construction, as seen in the previous section. Formally, it is also frequent in languages for the two (or more) predicates in an AVC to be syntactically close-knit, since they form one clause, although we will see that in ZC the construction has some flexibility.

There are essentially two types of AVCs in ZC. The first type involves the auxiliarized copulas *gõo* ‘be (at)’, and its negative *sii*, combined with the *ga* particle to express the progressive aspect. the second type involves otherwise regular verbs that have been auxiliarized to express phasal aspect and modality, among others.

### 3.1 *Ga* as linker in the progressive aspect construction

Besides a general imperfective marked *ga/gà* (and its negative *si*), ZC has a progressive construction that only refers to actions in progress (contrary to the general imperfective, which can also refer to future punctual events; see Y. Bernard and M. Kaba, 1994). The progressive construction is based on the copula *gõo* ‘be (at)’ and *sii* ‘not be (at)’ (for general studies on the changes from a copula to an auxiliary see C. Lehmann, 2015, p. 35, amongst others). There are at least three variants of the progressive construction, as illustrated next: <sup>2</sup>

- (7) a. Zànk-ey    gõo    noo    ga    tirà    caw.  
           child-p.DF be    there GA    book read  
           ‘The children are reading a book.’
- b. Zànk-ey    gõo    ga    tirà    caw.  
           child-p.DF be    GA    book read  
           ‘The children are reading a book.’
- c. Zànk-ey    gõo    tirà    caw.  
           child-p.DF be    book read  
           ‘The children are reading a book.’  
           ‘The children read books.’

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<sup>2</sup> It may be noted that B. Oumarou Yaro (1993, p. 132f) identifies the “ga” in (7-8) as the imperfective marker *ga/gà*, with a low or a high tone, which is different from the high tone only linker *ga/ka* (see also B. Oumarou Yaro, 1993, p. 113). While our investigations have not entirely cleared this issue, there are many speakers who would not allow a low-toned *gà* in these sentences. Y. Bernard and M. White-Kaba (1994, p. 124) also only cite a high-tone *ga* for the progressive construction. Complicating the matter further, L. Sibomana (2008, p. 64) claims that in the sequence “*gõo + ga + Verb*”, the verb conditions a polar tone on *ga*, which in turn conditions a polar tone on *gõo*. However, his own illustrations do not support his claim.

- (8) a. Zànk-ey sii noo ga tirà caw  
 child-p.DF not.be there GA book read  
 ‘The children are not reading a book.’
- b. Zànk-ey sii ga tirà caw  
 child-p.DF not.be GA book read  
 ‘The children are not reading a book.’
- c. Zànk-ey sii tirà caw  
 child-p.DF NEG book read  
 ‘The children are not reading a book.’  
 ‘The children do not read books/ will not read a book.’

The construction in (7a) and (8a) is a periphrastic construction involving the auxiliaryized locative copulas *gõo* or negative *sii*, the adverb *nôo* ‘there’ and the particle *ga* introducing the lexical verb, with a progressive meaning only. In examples (7b) and (8b) the constructions are more integrated where the adverb *nôo* is dropped. In (7c) and (8c), where both the adverb *nôo* and the particle *ga* are dropped, there is a remarkable variation in the grammaticality judgments. Some speakers would reject the sentences outright (for example speakers of extreme northern varieties). B. Oumarou Yaro (1993, p. 133) however reports similar sentences but posits some complex tonal adjustment whereby the high tone of the particle is retained (floating), causing a modulation on the *gõo/ sii*. Some speakers yet accept sentences (7c) or (8c) but only with a general imperfective meaning, not a progressive meaning, as indicated.<sup>3</sup> The parallel form/ meaning development from (7a) to (7c) is a general process characterizing many languages, including neighboring Hausa (cf. *ya-nàa nan gà shâ-n giyàa* ‘he is now drinking beer’, lit. ‘he-is there at drinking-of beer’ > *ya-nàa gà shâ-n giyàa* ‘he is now drinking beer’ > *ya-nàa shâ-n giyàa* ‘he is drinking beer/ he is a beer drinker/ he will drink beer’). It may be noted that all speakers accept a version of (8c) with the general negative imperfective marker *si* (with a short vowel). Copula *gõo* can also express the progressive with a nominalized clause with some variations, as illustrated next (see L. Sibomana, 2001, p. 234):

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<sup>3</sup> According to Y. Bernard and M. White-Kaba (1994), the constructions in (7-8) are possible only with verbs *koy* ‘go’ and *kà* ‘come’. But B. Oumarou Yaro (1993, p. 133) seems more inclusive (“certain verbs”) but nonetheless illustrates only these two verbs. What is certain is that the verb *fatta* ‘go out’ is frequently used without *ga* (cf. *ir gõo fatta Kwànni* ‘we are exiting Konni town’, overheard once in a traveling bus).

- (9) a. Bàr kân g â nyumày gòo nyumàyyan ga.  
 person that IPF 3s bath be bathing on  
 ‘Those whose job was to bath her were at it.’
- b. Bàr kân g â tuusu gòo tuusuyan.  
 person that IPF 3s clean be cleaning  
 ‘Those whose job was to clean her were at it.’

In (9a), the locative copula has a (figurative) locative complement the gerund *nyumàyyan* 'bathing' that is marked with the locative postposition *ga* (presumably unrelated to the purposive particle *ga*). The construction in (9b) does not retain the postposition. Both constructions reflect the structure of basic locative predications (cf. *Abdù gǎo fuwòo ra* 'Abdu is inside the house'; *Abdù gǎo taray* 'Abdu is outside'). This progressive construction, which may be more frequent cross-linguistically (cf. English and Hausa), is less frequent than the ones in (7-8) above and in fact was so far unreported (L. Sibomana, 2001, the source of data (9), does not comment on the constructions).

### 3.2 *Ga* as linker in aspectual or modal AVCs

The function of *ga* as linker in AVCs is its most prominent and most studied function. In AVCs, a lexical verb, mostly the V1, undergoes changes whereby it loses part of its lexical meaning and acquires a grammatical (mostly aspectual or modal) meaning. These processes have sufficiently been described in grammaticalization studies (notably G. Anderson, 2006, B. Heine, 1993, P. Hopper and E. C. Traugott, 2003, C. Lehmann 2015, pp. 29-34). There are many paths whereby a verb can become an auxiliary but in all cases, in appropriate contexts, an ambiguity can arise between an original meaning and a new meaning taken by the verb. This is illustrated in the following with the range of functions of the verb *yêe* 'return', one of the verbs auxiliaring to a phasal aspectual meaning:

- (10) a. Hiimù yêe fuwòo ra ga sìgaarì haɗ.  
 Himu return house in GA cigarette smoke  
 ‘Himu returned in the house to smoke a cigarette.’
- b. Hiimù yêe ga sìgaarì haɗ.  
 Himu return GA cigarette smoke  
 ‘Himu returned (here/ somewhere) to smoke a cigarette.’  
 ‘Himu resumed (went back to his habit of) smoking.’  
 ‘Himu smoked a cigarette again.’

- c. Hiimù yêe ga miilà ndà Faati.  
 Himu return GA think with Fati  
 'Himu thought about Fati again.'

Example (10a) shows the verb *yêe* 'return' with an obligatory motion meaning, given the specified locative complement before the purposive clause. Sentence (10b), without the locative complement, but with the *ga*-marked purposive clause, is ambiguous between a motion sense and an auxiliary resumptive or iterative meaning. Finally in (10c), with a verb that renders irrelevant a motion sense, only the iterative auxiliary meaning is available. While the examples in (10) illustrate a change from an intransitive verb followed by a purposive clause to an AVC, in other cases, the change is from a main verb taking an infinitive or sequential clause to a structure where the main verb becomes an auxiliary, as we will see below.

Given the semantic grammaticalization change in (10), one may expect ZC AVCs to show some syntactic rigidity and indeed sentences (10b-c) are more syntactically integrated than sentence (10a) (for example, various tests show that insertion of locative and adverbs between *yêe* and *ga* or the displacement of the *ga*-phrase are not possible in sentences (10b-c)). This rigid syntax is even more evident in AVCs deriving from original transitive complement-taking verbs. Indeed, the data show indications of lack of syntactic flexibility, such as a non-canonical word order where the direct object is shifted away from the lexical verb, which in some cases results in a V + *ga* + V structure. This is illustrated in the following (see L. Sibomana, 2001, p. 226, 228, 238):

- (11) a. ...kàl â tùn g hiijì ng mò wòybòr fo.  
 till 3s rise GA marry 3s even woman one  
 '...till he, too, was ready to marry some woman.'
- b. Woodin nô g aa zàa g` kay.  
 that FOC IPF 3s continue GA bother  
 'That is what is bothering her.'
- c. D aa dùu muusò g` wi...  
 if 3s succeed lion GA kill  
 'If he succeeds in killing the lion...'

In (11a), the direct object of the lexical verb (*wòybòr fo* 'some woman') is shifted to the right of the verb, although this verb, *hiijì* 'marry', is normally an S-Aux-O-V-X order verb (i.e., with the direct object placed immediately before the verb). In (11b), the pronominal direct object of the lexical verb *kay* 'bother'

is shifted to the left of the auxiliary *zàa* 'continue' (cf. the expected *woodìn nôo gà zàa ga à kay*, where the object pronoun *à* '3s' appears before the verb *kay* 'bother'). Finally in (11c), *muusò* 'lion' is the direct object of *wi* 'kill', a strong OV verb, but is shifted to the left of *ga* away from its verb. Despite these examples, ZC AVCs also seem to have some syntactic flexibility and can appear under many syntactic configurations, as illustrated in the following (see L. Sibomana, 2001, p. 222, 240 and A. Hamani, 1981, p. 374):

- (12) a. ...ir m` dùu g ir bàry-òo hañ-andi.  
 1p SBJ obtain GA 2p horse-DF water-CAU  
 '...so that we can water our horse.'
- b. Ì yê g zàa g dàk â ga.  
 3p return GA continue GA press 3s on  
 'They again closed on following her.'
- c. Ay hoo ga yêe ga kâa.  
 1s fail GA return GA come  
 'I almost came back.'
- d. ...ng m` dùu g dùu wurà daràizè.  
 3s SBJ obtain GA obtain gold coin  
 '...so that she gets to get the gold coin.'

In (12a), V2 *hañandi* 'give water' is a causative verb, which is a class of verbs that rarely accepts a post-verbal direct object (basic transitive verbs with a primary OV order can optionally have a VO order, see M. L. Abdoulaye, 2008). Maybe for this reason, the direct object of the verb (*ir bàryòo* 'our horse') stays in position, inserted between *ga* and the lexical verb. This shows that ZC AVCs, beside the rigid *V + ga + V* constructions, can also have a *V + ga + VP* structure, just like the purposive constructions. Sentences (12b-c) have a double nested AVC in a [Aux [AUX [V]]] structure. Sentence (12d) shows the same verb can be auxiliary and main verb.

Semantically, any syntactic flexibility notwithstanding, the AVC still refers to a single event and the auxiliary and the lexical verb obligatorily share certain operators like tense/aspect or negation. Sharing of tense/aspect is illustrated next (data from a Niamey speaker):

- (13) Musa gay ga òra wind-òo raa.  
 musa last GA walk/go house-DF in  
 'Musa left the house long time ago.' (Lit. 'Musa lasted to walk in house')

In sentence (13), the perfective is zero-marked (normally, overt tense/ aspect markers appear before the V + *ga* + V constructions). As one can see in the translation, the perfective sense in fact applies to the lexical verb (i.e., Musa stayed away from home for a long time, not that he stayed home for a long time before going).

As discussed in the literature, verbs taking clausal complements are the ones most prone to auxiliarization. In the next set of data I list some auxiliary verbs (and their lexical source) culled from the three tales in L. Sibomana (2001) and from Y. Bernard and M. White-Kaba (1994).

(14) Some auxiliaries expressing phasal or other aspecto-temporal semantics:

- a. *sintin* 'start'
- b. *yêe* 'resume, do again' (< motion 'return')
- c. *too* 'attain' (< motion 'reach, arrive at')
- d. *ban* 'finish'
- e. *dii* 'start' (< 'seize, grab')
- f. *gine* 'have already done' (< 'precede')
- g. *gay* 'take a long time'
- h. *waasu* 'hurry'
- i. *ban* 'to have already (done)' (< 'finish')

(15) Auxiliaries expressing a modal meaning:

- a. *hîma* 'ought to' (< 'resemble')
- b. *hin* 'be able'
- c. *baa* 'be about to, incline' (< 'want')
- d. *duu* 'succeed' (< 'win, obtain')
- e. *koy* 'risk' (< motion 'go')

All these verbs express an aspectual semantics (inchoative, durative, completive, etc.) or a modal semantics (obligation, possibility, ability, intention, etc.). One of the most frequent auxiliary verbs in L. Sibomana (2001)'s texts is the verb *kâa* 'come' with the auxiliarized meaning 'happen to (verb)'. It appears no less than eight times. Some examples are given in the following (data (16a-b) from L. Sibomana, 2001, p. 224, 228):

- (16) a. Han fo wòybòr-aa kàa g` tee gundè.  
 day one woman-DF come GA do belly  
 'One day, as it happened, the woman became pregnant.'

- b. Irkoy kàa g` tee wòybòr-aa hin ng` kurnyò.  
 God come GA do woman-DF can 3s husband  
 'By God's will, the woman won control of her husband.'
- c. à kàa ga gar bor gǒo nèe...  
 it come GA find one be there  
 'It happened someone was there.'

In many examples in L. Sibomana (2001)'s texts, *kàa* appears naturally as V1 with the motion meaning 'come' in purposive constructions, as illustrated in (1a) above. In examples (16), the verb *kàa* has no motion meaning component and it simply codes the happening of some event, especially in narrative contexts. For example the difference between (16a) and its version without *kàa ga* (cf. *wòybòraa tee gundè* 'the woman became pregnant') is that (16a) is woven into a story where the pregnancy is highlighted and important in the story as a consequence or as a new departure. In (16b) a motion meaning is irrelevant with the subject (God), while in (16c) the 3<sup>rd</sup> person singular pronoun subject à '3S' has an impersonal 'it' use.

Generally, the auxiliary is the first verb (V1), but it seems that verbs meaning 'finish' can also appear as auxiliary in V2 position, as illustrated next (data (17a) from L. Sibomana, 2002, p. 232, (17b) and (18a) from Y. Bernard and M. White-Kaba, 1994):

- (17) a. Tô, sôn kan bòrèy ginger g ban, ni m  
 OK now that people pray GA finish 2s SBJ  
 kàa g` koy  
 come GA go  
 'OK, now that people have finished praying, you may go.'
- b. À nà ngà faar-õo dùma ka daab-andì.  
 3s SEP 3s farm-DEF sow GA close-CAU  
 'He finished sowing his farm.'
- (18) a. À ban ka ñwǎa.  
 3S finish Ga eat  
 'He has already eaten.'
- b. À ñwǎa ka ban.  
 3S eat Ga finish  
 'He has finished eating/ he is done eating.'

In (17a), *ginger* 'pray', the V1, is the main verb, while *ban* 'finish', the V2, is

the auxiliary, contributing a perfective meaning. In (17b), too, it is the V2 *daabandì* ‘close, finish’ that contributes the perfective semantics. Apparently, it is a property of ‘finish’ verbs to appear as auxiliary verbs in V2 position (J. Heath, 1999, p. 337 also describes the same issue with *ben* ‘finish’ in Koyraboro Senni). Indeed, the verb *ban* ‘finish’, which besides its basic lexical use (cf. *goyõo ban* ‘finish the work’), can also appear as auxiliary in V1 or V2 position, as illustrated in (18). The two sentences may seem very close in meaning, but as V1 auxiliary, *ban* contributes a phasal aspectual semantics in (18a), but a perfective semantics in (18b), where it is the process of eating itself that is seen in its completion. Sentence (18a) says nothing about whether the process of eating itself has been completed through and through. It may be noted that J. Heath (1999), trying to differentiate the meaning in the two orders, says that there is an iconicity (‘eat’ then ‘finish’) in sentences like (18b), but this does not seem to be a sufficient characterization of the two sentences.

In conclusion, AVCs in ZC seem to show features of both flexible and rigid constructions (for example, with a shifting of the direct object for a more close-knit V + *ga* + V structure). Nonetheless, they can be considered to be distinct from the original purposive and infinitive source constructions, which display only normal verb phrase syntax. The next section examines resultative constructions.

#### 4. *Ga* as a linker in resultative constructions

ZC and related varieties are not serializing languages anywhere near typical examples like Yoruba or More (cf. N. Nikièma, 2003, p. 191). Nonetheless, as seen in Section 2, J. Heath (1998) characterizes the Koira Chiini equivalents of the auxiliary constructions described in data (17-18) as being serial verb constructions. However, when one considers a stricter definition of serial verb constructions, then the conclusion is clear that ZC has no such constructions. The examples that come closest to a serialized structure in ZC are presented in the following (adapted (19a-d) from L. Sibomana, 2001, p. 228, 230, 232, (19e-f) from Y. Bernard and M. White-Kaba, 1994):

- (19) a. Kurnyè m` à sannoo kar g kàa maayòo ra.  
 husband SBJ 3s talk hit GA take.out mouth in  
 ‘[Whenever she speaks ill of his sister] the husband would interrupt her.’



- b. Irkòy n` taasoo bar g` tee dònou bònyan. (=1b)  
 God SEP sand-DF change GA make millet balls  
 'God transformed the sand into millet balls.'
- c. Zaa à dii woybòr-àa, à tun g` kay à n â sê...  
 soon.as 3s see woman-DF 3s rise GA stand 3s say 3s to  
 'As soon as he saw the woman, he stood up and said to her...'
- d. Bòrèy kar g sày.  
 people hit GA disperse  
 'The people scattered.'
- e. Kàydiyà tee ka bisa.  
 rainy.season do GA pass  
 'The rainy season is now done/ over.'
- f. À tee ka si.  
 3S do GA not,exist  
 'He is dead.'

I will analyze the sentences in (19) as resultative constructions. Haspelmath (1992, p.191) says that a resultative construction semantically involves a dynamic action and a resulting state, both typically expressed by the same verb form. In all these sentences, the two verbs describe essentially a single event in a way reminiscent of serial verbs. However, one would face a few problems analyzing these examples as serial constructions. First, ZC would be atypical in having a linker between the two serialized verbs. Indeed, one of A. Aikhenvald (2006, p. 20)'s criteria for serialization requires that no verb in the serial construction carry a mark of subordination or dependency (see also M. Haspelmath 2016, p. 296). Secondly, the resultative construction is very rare in ZC and these are the only three examples culled from L. Sibomana (2001)'s texts. In this case, it would be difficult to say that ZC is a serializing language. Finally, semantically the two verbs do not create a new meaning different from the meaning of any one of the verbs, as is typical in serial constructions (cf. A. Aikhenvald. 2006, p. 4). In fact there is no new meaning so much so that in all sentences, the first verbs can be dispensed with, while essentially keeping the same meaning, as can be seen in the translations. This is why I analyze these sentences as containing resultative constructions where the dynamic action is expressed by the first (and dispensable) verb and the result by the second verb. For example, in (19a) the husband raises ('strikes') his voice over that of the wife, with the result that the wife's speech is cut off. It may be noted that

examples (17-18) may in fact derive from resultative constructions, which would then fall in line with M. Haspelmath's (1992) hypothesis that resultative forms can end up expressing the perfect and related aspectual values.

### **Conclusion**

This paper has distinguished and described at least four main uses of the particle *ga*. First, *ga* introduces a purposive clause, following the main verb. Secondly, *ga* can function as a sequential or infinitive marker that has a purely grammatical function and appearing sometimes for no obvious reason. All these constructions are bi-clausal with a main and a subordinating verb. A third major function of *ga* is to bind two verbs in an auxiliary constructions where the auxiliary, generally the V1, contributes phasal aspect semantics. Finally, the particle can also bind two verbs in a resultative construction where V1 describes the transformative change that results in the situations described by the second verb. The paper has shown that the auxiliary and resultative constructions are more grammaticalized, with one clause, and are syntactically more rigid than the purposive or infinitive constructions.

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