AUXILIARY VERB CONSTRUCTIONS
IN THE LANGUAGES OF AFRICA

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Auxiliary verb constructions–constructions with two or more elements of verbal origin, one of which expresses functional semantic categories–are widespread among the languages of Africa. In the following discussion, I present a typology of inflection in auxiliary verb constructions [AVCs] in the languages of Africa. While there are several macro-patterns of distribution seen in the various African languages, only a small selection are presented in some detail here, viz. the doubled and split/doubled inflectional patterns, along with the fusing of subject markers and TAM/polarity auxiliaries into so-called tensed pronouns that are relatively more common in AVCs across the languages of the continent than in most other parts of the world.

Before launching into the presentation, a few terminological issues should be clarified. *Inflection* is here understood in its usual sense to mean the formal encoding[1] of

[1] By 'formal encoding' I mean what is usually a morphological instantiation of this process with a segmental morpheme. However, functional categories can be encoded by something other than a bound segmental morpheme, as this would exclude several things that must count equally as inflection from any defensible cross-linguistic position. In the specific case of

grammatical or functional properties of a well-formed utterance. With respect to the verb in African languages, this includes the indexation of tense, aspect, referent categories (person, number, gender), etc. *Auxiliary verb* is understood in the way it has been in the specialist literature in the last two decades (Heine 1993, Kuteva 2001, Heine and Kuteva 2002, Anderson 2006) rather neutrally as: a verbal element on a diachronic form-function continuum standing between a fully lexical verb and a bound grammatical affix. *Auxiliary verb construction* is defined by Anderson (2006:7) as "a mono-clausal structure minimally consisting of a lexical verb element that contributes lexical content to the construction and an auxiliary verb element that contributes some grammatical or functional content to the construction".[2] The present investigation adopts this understanding of this term.

    Some comments should be offered on the database that constitutes the foundation for this study of auxiliary verb constructions in the languages of Africa. I have my own specific criteria for a maximal ideal sample in a typological study such as this, but it is informed by many different approaches to language sampling that have been offered in the literature (e.g., Bell 1978, Nichols 1986, Dryer 1989, 1992, 2009, Rijkhoff et al. 1993, Rijkoff and Bakker 1998, Perkins 2001, Blake 2001, Song 2001 just to name a

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African languages, tonally marked inflection is found not infrequently in Moru-Ma'di or Nilotic languages, and one most certainly does not want to exclude these languages nor these structures from the sets of those that express the grammaticalized functional categories that represent 'inflection' as usually understood. Furthermore, such functional elements can be fully dependent, partially integrated or independent phonologically from other parts of the construction (either the auxiliary verb and/or the lexical verb). Thus, *it is completely irrelevant whether an obligatory functional inflectional exponent must be considered an affix or a clitic, etc., in the analysis of a particular language, as this has nothing to do with the functional semantic properties of the exponent, but rather with its phonological or phrasal prosodic properties*. Thus I am hesitant to use the expression 'morphologically encoded by a fully phonologically dependent segmental element' although this is the only way to honestly formulate this, because such a phrase is both overly narrow as well as cumbersome, and anything else does not constitute 'morphological' encoding in a conventional or pre-theoretical understanding of that term.

[2] Auxiliary verb is thus in some very broad sense a functional element, but may eventually drift semantically into an empty element that serves only as a placeholder of other (obligatory) grammatical or inflectional content as has happened in a number of languages, e.g., the South American language Jarawara (Dixon 2002). This is what has happened in various northern African languages like Zaghawa/Beria, Tama and Kanuri with a light verb stem (deriving from) 'say', as well as Fur and Aiki (also in Tama) with 'do' as the light verb stem; see sections 4.1 or 13 below for examples.

few). Based on recent and on-going work of mine relating to the quantization of linguistic diversity and the threat thereto (Anderson and Harrison 2006, Anderson 2010, in preparation), I use a quasi-standard sampling level that I call the *genetic unit*, which is roughly equivalent to the Germanic or Romance language families. As such, I identify more relevant sampling levels than has been (until recently) traditional with regards to Africa, though more researchers appear to be moving in that direction (Güldemann 2008, Dimmendaal 2001a, 2008, Sands 2009).

In addition to the largest possible number of genetic units that I sought representative data from, my sample also includes, where merited and possible, data from multiple members of the same genetic unit. This is because these genetic units display particularly noteworthy or robust and varied systems of auxiliary constructions, and not incorporating this kind of micro-variation within genetic units would have led to a less comprehensive and informative database. Thus, there are many languages in the database representing the large Bantu family, as well as multiple representatives of the Chadic and Nilotic families.

By my reckoning there are over one hundred potential genetic units and unclassified languages to be used in a maximally representative typological linguistic sample of African languages. Other researchers naturally may have their own valid criteria for determining a different ideal number of sampling units in a maximally representative sample. I have data in this corpus from roughly ninety such genetic units. For investigating the structure of auxiliary verb constructions and verbal tense/aspect systems, the data currently available to me is of a type that is insufficient to be included in this sample from approximately a dozen of the genetic units in Africa. All but one of these are/were in central or west Africa, mainly in Nigeria, but also Cameroon, Ghana, Côte d'Ivoire, and Chad. These genetic units are *Akpes, Akokoid* and *Ayere-Àhàn*, all spoken in a compacts area in Nigeria, the barely remembered (possibly Kwa) language *Dompo* and the apparently now extinct and unclassified *[M]Pre[†]* of Ghana, the similarly named and likewise unclassified *Mbre* of Côte d'Ivoire, *Dakoid* languages of the Nigeria/Cameroon border region, and the nearly extinct *Jalaa*–an unclassified language (or possible linguistic isolate) of Nigeria. The last three may represent genetic units that are remnants of a former fragmentation zone in western and central Africa (along with at least the lexical substrate in *Kujargé*, also not included in this sample) that pre-dates the various expansions of the component core and peripheral families of the Macro-Sudan Belt (Güldemann 2008; see 12 below). There are, of course, genetically unclassifiable languages in Africa as well, such as the Creole languages Sango or Kituba, or Pidgin varieties like Kenyan Pidgin Swahili, all three of which are included in the sample. Lastly, I have perhaps somewhat abitrarily excluded *Meroïtic* from this sample due to a

low level of confidence in my ability to distinguish the relative merits of the various and quite different interpretations that have been offered of the materials from this extinct and still unclassified language of northeast Africa (Rilly 2010).

The corpus represents approximately 500 different speech varieties coming from over ninety different genetic units of Africa, plus the three genetically unclassifiable languages mentioned above. This set of genetic units in my database includes the main representatives of the Nilo-Saharan phylum as traditionally understood: *Saharan, Songhay, Fur, Berta, Kunama, Maban, Gumuz, Koman, Kuliak, Kado,* the families of the East Sudanic stock: *Daju, Jebel, Nera, Nilotic, Nubian, Nyimang, Surmic, Taman*, and *Temein*, and of the Central Sudanic stock: *Bongo-Bagirmi, Kresh-Aja, Lendu, Mangbetu, Mangbutu-Efe, Moru-Madi*.

The corpus also includes the small families and isolates once conventionally called 'Khoisan' or 'click' languages: *Hadza, Juu, ‡Hoan, Khoe, Sandawe*, and *Tuu*.

The main branches of the Afroasiatic phylum are included in my corpus: *Berber, Chadic (West Chadic , East Chadic, Biu-Mandara Chadic), Cushitic (Northern, Southern, Eastern), Egypto-Coptic, Omotic (Northern, Southern),* and *Semitic (Ethio-Semitic or Southern, and Western)*.

The corpus includes almost all of the many families and stocks (formerly included) within the enormous Niger-Congo phylum for which sufficient data are available: *Leko-Nimbari, Mbum-Day, Waja, Jen (Bambukic), Limba-Mel Atlantic, Bak Atlantic, Senegambian Atlantic, Cangin Atlantic, Eastern Senegal-Guinea Atlantic, Bijago, Dogon, Gur, Heiban Kordofanian, Ijoid, Katla, Kru, Gbe, Kulango-Lorhon, Potou-Tano Kwa, Ga-Adangme, E. Mande, S. Mande, W. Mande, Rashad Kordofanian, Talodi Kordofanian*, *Northern* and *Southern 'Bantoid' sub-families (Mambiloid, Tiv, Tikar, Ndemli, Mbe, Mbam, Mamfe(Nyang), Grassfields, Ring, Mbam-Nkam, Ekoid, E. Beboid, W. Beboid), Bendi, [Narrow] Bantu, Okoid, Nupoid, Jukunoid, Yoruboid, Edoid, Idomoid, Igboid, Cross River, Kainji, Ega, Plateau* subgroups and *Senufic*; the corpus also includes all six of the branches of Ubangi, which some researchers have now excluded from Niger-Congo altogether (Dimmendaal 2008), represented in my corpus, including *Gbaya Ubangi, Mba Ubangi, Ngbaka Ubangi, Ngbandi Ubangi, Sere Ubangi*, and *Zande Ubangi*.

I also have data in the corpus from moribund *Ongota*, which may or may not be classified as an isolate branch of Afroasiatic, or may rather be an isolate language. *Shabo*–like Ongota also a critically endangered language of Ethiopia–has a similar status within Nilo-Saharan, i.e., it is classified as either as an isolate branch within the phylum or a language isolate.

Finally, the corpus includes data from two enigmatic and as yet unclassified languages of central Africa: *Bangi Me* of Mali and *Laal* of Chad. See Appendix 1 for an alphabetic list of the languages along with the countries they are spoken in and the sources consulted in constructing the corpus and Appendix 2 for the master list of languages in the corpus classified according to their genetic unit.

That complex morphological verb forms derive from fused auxiliary formations and that these often reflect earlier syntactic patterns has been known in African linguistics at least since Givón (1971, 1975). All types of AVCs can be fused into complex verb forms when looking at African languages as a whole. Generally, the relative order of AUX and V are relatively stable across genetic units, reflecting as they do the phrasal syntax that is dominant; see Appendix 2 for a list of basic and variant orders found in AVCs and fused complex verbs deriving from AVCs among the languages of my corpus. Note however that constructions counter to norms of the language's phrasal syntax may not infrequently be anomalous in other ways (e.g. have 'LEX-headed' patterns, see 1.2 below); they may also show other, enlightening processes of grammaticalization than do the formations that represent more typical AVC structures for the language or its genetic unit.

In the following sections I present a typology of auxiliary verb constructions in African languages. In section 1 I first present the notions of head and dependent in the grammar of AVCs, and briefly touch on the best known inflectional pattern of AVCs, the 'AUX-headed construction' (1.1), as well as the less well known 'LEX-headed' pattern (1.2). In section 2, I present data showing the 'doubled' inflectional pattern, in African languages. In Section 3, I present data representing what have been called (Anderson 1999, 2000, 2006) the 'split' (3.1) and 'split/doubled' patterns (3.2). In section 4, I give an overview of both the common source > target (or content > functional) semantic developments seen in African AVCs (4.1) and of the common syntactic source constructions that typically yield AVCs in African languages (4.2). In Section 5, I look at how complex verb forms derive from former AVCs in African languages and show variation in inflectional pattern or degree of phonological integration or fusing. Sections 6-9 examine four genetic units in more detail, offering a sample profile of constructions found in them. These include Bantu (6), Chadic (7), Khoe (8), and Nilotic (9). Sections 10-14 offers profiles of several linguistic areas or regions in Africa. This includes languages of the following five linguistic areas, representing four old or more recent spread zones of varying size and one fragmentation or residual zone. The four spread zones include Tanzanian Rift Valley (10), 'Ethiopia' (11), the Macro-Sudan Belt (12), the 'Sahara' (13) and the fragmentation zone is represented by the languages of the Nuba Hills (14). Section 15 summarizes the findings.

1. Inflection in Auxiliary Verb Constructions in African languages

Auxiliary verb constructions represent a fundamental part of both grammar and cognition, such that similar strategies of verb-verb sequencing are employed by language users to encode functional semantic structure across unrelated languages. AVCs are mid-points in a continuum of grammaticalization of the well-known type in (1):

(1) *lexical verb* [+ syntagma] > *auxiliary verb* [+ lexical verb] > *affix*[-verb head-] (> Ø)

AVCs exhibit definable trends both in their origins and in their subsequent historical developments. The grammaticalization paths of AVCs encompass developments pertaining to the semantic, (morpho)syntactic, and prosodo-phonological characteristics of the lexical and auxiliary verbs involved. In other words, the well-known tendencies embodied in the grammaticalization path in (1) collapse logically independent but inter-connected functional, phonological and morphotactic hierarchies.

Although it is not the primary focus of this presentation, it is worth mentioning what AVCs function to encode in African languages. The wide range of functional categories encoded through AVCs in the languages of Africa include the expression of various tense (2), mood (3), and aspect and *Aktionsart* (4)-(5) categories (e.g. progressive, habitual, completive, imperfective); see also section 4.1 below for common functional targets associated with the auxiliation of specific, frequently grammaticalized lexemes in AVCs in African languages.[3]

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[3] Note that at various historical layers, grammaticalized auxiliary verb structures underlie many of the tense, mood and aspectual markers found in the Bantu languages that have ended up in the Tense/Aspect position of the Bantu verbal template (see below and Berger 1939, Guthrie 1948, 1967/1971, Dammann 1956, 1971, 1978, Cole 1959, 1961, Meeussen 1967, Cope 1971, Lafon 1982, Goldsmith 1984, Heine 1991, 1994, Drolc 1992, Blench 1993, Wald 1997, Ehret 1999, Hewson et al. 2000, Maho 2001, 2003, Hewson & Nurse 2001, Nurse and Philippson 2006, Nurse 2008; cf. also Beutner 1886). While it is beyond the scope of the present study, it is precisely a historically layered approach to grammaticalization that can help shed light on some of the issues that remain controversial in Bantu, e.g. the many functions of *-ka-* (and *–a-)*; this investigation is currently underway.

(2) <u>Birom</u> [Plateau]

    má rɔ́dà-ciŋ   ~   *má*   *rɔ́ɔ̀-ciŋ*
    1   FUT-dig   1   FUT-dig
    'I will dig (today)' (Bouquiaux 1970: 309)

(3)   a. <u>Ogbronuagum</u> (Bukuma) [Cross River]

      *n-dɔ́-**né**   ə-ɣíle*
      1-FUT-**AUX** FUT[:1]-do
      'I can do (it).' (Kari 2000: 40)

    b. <u>Ogbronuagum</u> (Bukuma)

      *abá tó-**né**   ó-ɣíle*
      they FUT-**AUX** FUT:PL-do
      'They can do (it).' (Kari 2000: 40)

(4) <u>Siluyana</u> [Bantu K31]

    ba-nu   *ba-**li***   *ba-tenda*
    PL-person   3PL-**AUX**   3PL-work
    'the people are working' (Givón 1971: 148)

(5) <u>Godie</u> [Kru]

    k-ã̃²   *yi²*
    PROG-1   come
    'I am coming' (Marchese and Gratrix 1974 : 272; GOD 4)

In addition, a few African languages make use of a negative auxiliary verb construction, e.g. Lango (6) or Hung'an (7).

(6) <u>Lango</u> [Nilotic]

   *án   à-**pe**   à-cámò rɛ́c*
   I   1-**NEG.AUX** 1-eat:PRF fish
   'I didn't eat the fish.' (Noonan 1992: 143)

(7) <u>Hung[']an</u> [Bantu H42]

   *tu-Ø-**khoon**-ak   ku-mon*
   1PL-**NEG.AUX**-IPFV INF-see
   'we don't see, don't think so' (Nurse 2008: 183) neg.aux < 'fail'

Finally, although not well-known, AVCs may have 'adverbial' functions in African languages as well, as in Eleme of Nigeria (8). That is, what corresponds to certain kinds of adverbial modificational notions in better known European languages may be formally encoded by an auxiliary verb structure in Eleme, such as the verb *ʔɔtɔ*, which means 'very'.

(8) <u>Eleme</u> [Ogonoid Cross River]

   i.   *ɔ̀-**ʔɔtɔ** tʃá-î̄   ɛpɔ́*
       2-**AUX** run-2PL afraid
       'you became very afraid' (Anderson 2006: 37)

   ii. *è-**ʔɔtɔ**-rî   tʃǎ   ɛpɔ*
       3-**AUX**-3PL run   afraid
       'they became very afraid' (Anderson 2006: 37)

1.1 Heads, Dependency and Inflectional Patterns. The encoding of inflectional categories, that is, the morphosyntax, and the syntactic head/dependency relationship of the two verbal elements in an auxiliary verb construction largely reflects those same relationships in the input/source construction that gave rise to the AVC. There are at least three types of such source constructions in African languages, broadly speaking, that yield AVCs, viz., embedded/nominalized structures, serialized structures, and clause-

chained structures. Within each of these broad types, several sub-types need to be realized, each with their own specific developmental consequences, see 4.2 below.[4]

The embedded/nominalized structure is by far the best known source construction type for AVCs, and is the only one that appears in studies that focus on European and Asian languages (as much work in syntactic and diachronic linguistic theory does, e.g. Harris and Ramat 1987, Lightfoot 1979, Vincent 1982, Bentley and Eythorsson 2004 et seqq.). In these AVCs, the auxiliary verb appears to be the inflectional or morphosyntactic head (cf. Zwicky 1985, 1993, Hudson 1987), as well as the syntactic head, and the lexical verb often appears in an overtly dependent or nominalized form (sometimes marked by phonologically null Ø-morphs). These AVCs often result from embedded complement structures or nominalized forms used with copular verbs. Although the auxiliary verb is the syntactic and morphosyntactic (or inflectional) head, it is clearly semantically not the 'head' of the expression, which, for example, predicates of an event of 'seeing', in the following AVC from Bantu Bukusu, not one of 'being':

(9) Bukusu   [Bantu E31]

    bá-lì   *xû:-bón-a*
    3PL-AUX INF-see-FV
    'they see' (Aksenova 1997: 17)

much like English *I have gone* predicates of an event of 'going', not an event of 'having'.

Syntactically, the auxiliary element in 'regular' AVCs serves as the head, with the lexical verb encoded as dependent through the use of the infinitive structure. The lexical verb may even remain the syntactic complement of a nominal prepositional phrase in an AVC. Thus, various preposition-plus-nominalized verb structures are attested across a range of different African languages, and indeed must be reckoned among the most common sources for progressive constructions cross-linguistically, e.g., 'be at', 'be with' being two of the most common among African languages. Such formations have lexical verbs as PP complements in Bantu Umbundu or Central Sudanic Ngambay-Moundou with copular (positional) verbs serving as the inflectional and syntactic heads of the construction.

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[4] Givón (2009) suggests just two, embedded and serialized. Based on parameters of finiteness and (often asyndetic) coordinate/subordinate status, I reckon three such input structures, for the details of which see below.

(10) <u>Umbundu</u>   [Bantu R10]

    *tu-**li**   **l'**   **oku**-lya*
    1PL-**AUX** **with** **INF**-eat:FV
    'we are eating' (Heine and Reh 1984: 125; Valente 1964: 281)

(11) <u>Ngambay-Moundou</u> [Bongo-Bagirmi]

    m-îsī/ m-ár   **mbā** **k**-*ùsà*   *dā*
    1-**AUX**/1-**AUX**   **for**   **NOM**-eat meat
    'I am eating meat' (Heine and Reh 1984: 126; Vandame 1963: 94)
       [NB: two different AUX variants, same structural AVC]

As is well known, the auxiliary verb typically tends to occupy the position in the verb phrase that the lexical verb would occupy if it appeared alone in an inflected form, i.e., as if it were functioning as the syntactic and inflectional heads of the verb phrase.[5] Extrapolating on this data alone, it is clear that syntactically and inflectionally, the auxiliary verb appears to have assumed the 'head' status in an AUX-headed construction, but not semantically (already discussed by Zwicky 1985, Mufwene 1991, etc.). Thus, the (morpho)syntax and semantics of a construction need to be distinguished for AVCs at least, regardless of what framework of analysis within which this may be formalized. Not only do syntax and semantics need to be kept separate but interdependent in an architecture of grammar, but a set of functional categories which have generally been subsumed under either or both of these domains also need to be kept separate and autonomous from both with respect to AVCs. These functional categories (or morphosyntax) too show complex distributional phenomena and properties independent from both syntactic and lexical/content semantic properties in auxiliary verb constructions. In fact, it will turn out that (all?) such relations of 'headedness' and 'dependency' are gradient or scalar within AVCs, and individual constructions may show tendencies to one or other end of the continuum, that is, they may show increasing or decreasing degrees of 'canonical' headedness/dependency, but all points in between on

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[5] Assuming, of course, that such main-verb-only structures are permitted in the language, as they do in fact appear to be in all African languages consulted so far, except possibly some Mande languages where the 'predicative marker' which is often an auxiliary form historically is obligatory.

the continuum might be occupied by other constructions in the language or (un)related languages. In other words, the 'grammar' of AVCs, is generally one of degree, scale, or relative values, but not absolute discrete values or concepts *per se*.

For the sake of terminological consistency and convenience, I use the following notions of 'headedness' to characterize AVCs (although, as above, acknowledging the non-discrete qualities thereof): the *syntactic head* or *phrasal head*, the *semantic head* and the *inflectional head* or *morphosyntactic head*. For the most part, the syntactic head is the auxiliary verb, and the semantic head is the lexical verb (with some periods of ambiguity, especially in AVCs with serialized and 'light' verb input structures). Considering the distribution of the properties of the putative inflectional head on the other hand yields five macro-patterns, all well attested in African languages:

(12) a. ***AUX-headed*** > Auxiliary Verb is the inflectional head
  b. ***Doubled*** > Auxiliary Verb and Lexical Verb are inflectional co-heads
  c. ***Split*** > Inflectional features split among Lexical Verb and
    Auxiliary Verb
  d. ***Split/Doubled*** > Some features show doubled pattern, others split pattern
  e. ***LEX-headed*** > Lexical Verb is inflectional head
    (Auxiliary Verb often analyzed as particle; may have 'clause-level' inflection)

In terms of linear or phrasal syntax, the relative order of auxiliary verb and lexical verb in the AVC string generally follows the same order of Verb and Object in the clause. Thus, SOV languages tend to have V Aux structure while SVO and VSO typically have Aux V structure. However, in a small number of Bantu languages, e.g. Langi (F33), that show SVO basic clause structure, most AVCs in the language show the typical Bantu pattern of Aux V, but some AVCs have the syntactic pattern of V Aux (Dunham 2004), so deviations from these norms are found; note also that Dinik (Affiti) of the Nyimang family in Sudan has AUX V order but SOV clausal syntax.

In the following sections of 1.1, I discuss dependent forms of lexical verbs in AVCs and I briefly exemplify some of the multiple sub-types of the AUX-headed inflectional pattern in African languages. In 1.2 I briefly touch on LEX-headed pattern of inflection in AVCs, leaving a more detailed discussion of this very important type to a future presentation. In sections 2 and 3 of this study I concentrate on categories b-d in (12) and exemplify constructions showing the doubled, split and split/doubled patterns.

The data concerning the distribution of inflectional encoding properties of the auxiliary verb [AV] and the lexical verb [LV] in auxiliary verb constructions suggest that there is a need to distinguish between their morphosyntactic and syntactic features.

Specifically, AVCs may show either a consistent discrete inflectional head (as in LEX-headed, AUX-headed and even perhaps the co-headed formations exhibited by the doubled inflectional pattern) or these characteristics may appear in a diffuse or split manner across the two components of the construction (the auxiliary verb and the lexical verb, for which see 3 below). However it is important to note that regardless of the inflectional pattern, the auxilary verb tends to serve as the syntactic /phrasal head of the construction. The syntactic dependency marking on the lexical verb generally represents residual effects of the shift from a bi-clausal complement (or conjunctive and some kinds of serialized) structure to a mono-clausal phrasal structure that accompanies the process of auxiliation.

While the lexical verb tends to be a syntactic dependent on the auxiliary verb phrasal head, the actual form of the lexical verbs in such AVCs can range from (quasi-)fully finite to fully non-finite, with varying degrees on this continuum also represented. This 'dependent' marking may be formally encoded by the morphology, by the (morpho)phonology, or syntactically. All these factors make it is possible to speak of not only degrees of headedness inflectionally, but degrees of dependency, with respect to the structural relationships (however construed or formalized) between auxiliary verbs and lexical verbs within and across the AVCs of a given language.[6]

Examples of several different formal means in which a (lexical) verb can be marked as 'dependent' within AVCs are offered below. Note that this tendency to mark a lexical verb as dependent in an AVC holds true regardless of the inflectional pattern that an AVC is found within. It is not the case, however, that all functional complex verb predicates require lexical verbs to be marked as dependent. Different formal means of marking a lexical verb as dependent typically co-occur predominantly with certain sub-types of inflectional patterns and result from specific structural configurations in the source constructions.

Lexical verbs may be overtly nominalized, adjectivalized or adverbialized through some kind of infinitive, participle, gerund/converb or verbal noun form which constitutes a morphololgically marked syntactically dependent form (albeit one that may be realized by a null-morph in the case of bare stem 'infinitives'). AVCs in a given language may differ with respect to whether argument-encoding morphology is permitted or not on the lexical verb, whether there is (independent) marking of TAM forms, (independently motivated) negation, on the lexical verb, etc. The variability of these factors helps explain

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[6] See Givón (1990) for more on degrees of finiteness.

some of the typological variation seen among various sub-types of split, doubled and split/doubled patterns discussed in 2 and 3 below.

Other means of marking a lexical verb as dependent in an AVC include the use of irrealis, subjunctive, etc. morphology on the lexical verb to encode its non-finiteness or non-finalness, or at least its lesser finiteness.[7] Anderson (2006) calls this the modal subordination sub-type within AVCs. Another means of marking a lexical verb as dependent in an AVC includes the lexical verb encoding nominal properties not generally associated with finite verbs, such as happens with gender agreement in participial forms of lexical verbs in Romance languages and Gimira, see below. Dependent-marked forms may also exhibit the phonological properties of nouns (e.g. a tonal pattern), or may appear in a syntactic position otherwise licensed for nouns, as in Kru (or Germanic) languages.[8]

Most of the means of marking a lexical verb as dependent in an AVC are found in one or another construction when viewing the languages of Africa comparatively. A lexical verb in a dependent form in an AUX-headed pattern deriving from an embedded complement is of course the best known auxiliary structure and is well represented in numerous sub-types across the languages of the continent. For example, infinitive forms of lexical verbs may be found in certain Somali varieties in AUX-headed AVCs.

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[7] See Bisang (2001) for why these modal forms are to be considered less finite in a scale of finiteness than corresponding indicative/declarative forms; cf. Carlson (1992) for a different view of subjunctive and finiteness in African languages. See also the articles in Nikolaeva (2007) for recent thoughts on different approaches to finiteness in grammar (and degrees and types of finiteness in various languages).

[8] See Marchese (1986) for discussion and examples; see also Claudi (1988) for a different view. Note also the similarity between the S-Aux-O-V-[Other] order proposed for Proto-Niger-Congo (Gensler 1994; Childs 2005) and the order SVOO in double object constructions, as in the following Kisi forms:

(a) i. <u>Kisi</u> [S. Atlantic]   ii. <u>Kisi</u> [S. Atlantic]

ò	*ké*	*yá*	*tòòlúláŋ*		*fàlà*	*có*	*lɛ́ɛ́ŋndó*	*yìkpàá*
she	give	me	support		Fallah	PROG	machete	sharpen
S	V	O	O		S	AUX	O	V

'she gave me support'   'Fallah is sharpening the machete'

(Childs 2005: 8)

(13) <u>Dabarro Somali</u>

    *sheen-**ow**   heeshə*
    bring-**INF**   AUX:1
    'I keep bringing.' (Heine and Reh 1984: 124)

(14) <u>Mudung Somali</u>

    *kari-**n**   h̄ay-s-ay*
    cook-**INF**   AUX-2-PST
    'You kept cooking.' (Heine and Reh 1984: 124)

Constructions with an infinitive-marked lexical verb are extremely common in Bantu languages, e.g., the Bukusu form in (9) above or the Xhosa (15) far future form below. According to Nurse (2008), these so-called compound constructions were likely to have been present in Proto-Bantu as well.

(15) <u>Xhosa</u> (Bantu S41)

    *ndi-**ya**   **ku**-hamba*
    1-**AUX**   **INF**-travel:FV
    'I shall travel in the far future.' (Batibo 2005: 8) AUX < 'go'

Participial forms of dependent lexical verbs are found in AUX-headed AVCs in such Cushitic languages as Oromo of Wellega or Afar.

(16) a. <u>Oromo of Wellega</u>

    adeemaa(n)   *jira*
    go:PRTCPL   AUX:PRS
    'He is going.' (Gragg 1976: 189)

b. <u>Oromo of Wellega</u>

adeemaa *hin-jiru*
go:PRTCPL NEG-AUX:PRS.NEG
'He isn't going.' (Gragg 1976: 189)

(17) a. <u>Afar</u>

*okoˈme-**h*** *suˈge /en*
eat-**PRTCPL** AUX:1.PST/PRF
'I had eaten' (Bliese 1976: 147)

b. <u>Afar</u>

*yubˈle-**h*** *suˈgele*
see-**PRTCPL** AUX:PRF:FUT
'he will have seen'(Bliese 1976: 147)

The familiar Romance-type of AVC with partially dependent 'participial'-type adjectival or nominal forms of lexical verbs showing gender agreement is rare in African languages (and really elsewhere other than certain well-known European languages). The one clear example of such a structure in my database of 500 African languages representing the full spectrum of geographic and genetic diversity of the continent is from the Omotic language Gimira (Benchnon). Both the lexical verb in a 'past participle' form and the inflected auxiliary verb encode the feminine gender of the subject (note that only the auxiliary verb, as the inflectional head, encodes the inflectionally relevant functional categories of tense/aspect (possibly expressed on both the lexical and auxiliary verbs), person and number).[9]

(18) <u>Gimira (Benchnon)</u> [Omotic; Ethiopia]

wu¹s³ *han³kʼ⁴* *yis⁴tar⁴ge²ne³*
she:SUBJ go:PST.PRTCPL:F AUX:PST:NEG:3F
'she was not going'(Breeze 1990: 31)

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[9] In a sense this is thus like a kind of split/doubled inflectional pattern, see 3.2 and 11 below.

Generalized adverbial dependency marking is encoded on a lexical verb in an AVC deriving from a subordinate/dependent clause in Eleme.

(19) <u>Eleme</u>

    è-bo-rîru   ***e**-maː*   *àdádʒi*   *ɔ̀nɛnɛ*
    3-should-3PL-PRTCL **DEP**-bringAdaji   gift
    'They should bring Adaji a gift.'
    (Bond 2006; Bond and Anderson 2003)

The so-called juncture element in various Khoe languages might also have originally represented a structure of this type (Vossen 1997, Güldemann and Vossen 2000). It may be found within synchronically bipartite AVCs as in Naro.

(20) <u>Naro</u> [Khoe; Botswana]

    *ǂ'ṹ-**á***   *dá-hã̀*
    eat-**JNCT** 1-PRF
    'I have eaten'   (Heine 1986: 15)

Co-negative forms, that is, dependent negative forms of lexical verbs that co-occur grammaticalized in combination with a negative auxiliary, are found in such African languages as Majang.

(21) <u>Majang</u>

    ku-ko-t-a   *Daaki*   *kɛt-ɛ**d***   *kɛɛt*
    NEG-PST-1-OBJ   Daaki   chop-**NEG** tree
    'Daaki did not chop a tree for me' (Unseth 1991: 120)

A number of Bantu languages, particularly those of southern Africa like S21 Venda, as well as D28 Holoholo, make use of a co-negative form in the final vowel position of the verbal template, e.g. *–i*.[10]

(22) a. Bantu S21 <u>Venda</u>   b. Bantu S21 <u>Venda</u>

     *ndi-**thi**-nga-divh**i***   *a-ri-Ø-rém-í*
     1-**NEG**-POT-know:FV$_{CONEG}$ NEG-1PL-TA-chop-FV$_{CONEG}$
     'I shall not know' (Batibo 2005: 7) 'we don't chop' (Nurse 2008: 269)

(23) Bantu G42 <u>Swahili</u>

    tu-li-kuwa   ***ha**-tu-fany**i***
    1PL-PST-AUX NEG-1PL-do:FV$_{CONEG}$
    'we weren't doing anything' (Aksenova 1997: 21)

 (24) a. Bantu D28 <u>Holoholo</u>

     *a-to-Ø-lɔl-**i***
     NEG-1PL-TA-look-**FV$_{CONEG}$**
     'we won't look {F$_1$}' (Nurse 2008: 269)

  b. Bantu D28 <u>Holoholo</u>

     *a-to-ká-lɔl-**i***
     NEG-1PL-FUT$_2$-look-**FV$_{CONEG}$**
     'we won't look {F$_2$}'   (Nurse 2008: 269)

The pattern of a copular (> auxiliary) verb in combination with a prepostional (often locative or comitative/instrumental) phrase that includes a nominalized form of a lexical verb is a widespread and common pattern often found in progressive functions in a range of African languages (Heine and Reh 1984), as mentioned and already exemplified above

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[10] Note that co-negative forms in Bantu occur in a construction-specific manner with negatives, whether the negative marker is at the pre-subject marker or in the pre-prefix outermost/leftmost position in the verb template as in all forms above except (22a), or with negative prefixes that occur at the negative (prefix position class –4) position, as in (22a).

in Umbundu and Ngambay-Moundou, and again in 4.2 and 6 below in a range of Bantu languages. For a full list of AUX-headed inflectional patterns in AVCs in the African languages of my corpus see Appendix 3.

   Lexical verbs may be grammaticalized in two different 'dependent' forms in different AUX-headed AVCs within a given individual language even with one and the same auxiliary. For example in Torrend's (1891) Southern African Bantu 'Kafir' (Xhosa), the auxiliary verb –*ya* appears in an AUX-headed structure in two different functions depending on the form of the lexical verb. If the lexical verb is unmarked (or Ø-marked), then the construction means present progressive, but if the lexical verb is in the infinitive form (prefix *ku-*), then the construction has a future meaning.

(25) a. <u>Xhosa</u>

   ndi-ya   bona
   1-AUX   see:FV
   'I am seeing' (Torrend 1891: 242)

   b. <u>Xhosa</u>

   ndi-ya   ku-bona
   1-AUX   INF-see:FV
   'I shall see' (Torrend 1891: 242)

African languages are hardly alone in showing multiple different functions associated with AVCs that use the same auxiliary source verb, grammaticalized into different embedded or complement structures with different dependent forms of a lexical verb. Compare in this regard English 'be' in its progressive (*be + V-ing*) and passive functions (*be + V-ed/en*):

(26) a. <u>English</u>   b. <u>English</u>

   Bill was killing the gorilla   Bill was killed by the gorilla
   {be...-*ing*} >> progressive   {be...-*ed/en*} [+by-phrase] >> passive

or the inchoative vs. benefactive structures found in such Siberian Turkic languages as Tuvan (Anderson and Harrison 1999, Anderson 2004), associated with the use of the

same auxiliary verb *ber* 'give' with two different, constructionally determined and specified converb (dependent adverbial) forms of lexical verbs:

(27) a. <u>Tuvan</u> [Turkic; Siberia] b. <u>Tuvan</u>

    *biʒ-**ip***   **ber**-*di-m*   *biʒi-**(j)***   **ber**-*di-m*
    write-**CV** **AUX**-REC.PST-1   read-**CV**   AUX-REC.PST-1
    'I wrote (it) for someone else'   'I began to write'
    (Anderson 2006: 68)

Note that other inflectional patterns also show the lexical verb in these (and other) types of dependent forms, reflecting the [high degree of] syntactic head status of the auxiliary in AVCs, regardless of (the degree of) its inflectional head status (full, partial, none). These are addressed in the relevant sections (2 and 3) below.

    Note that there is considerable variation within not only genetic units but individual languages as well with respect to the inflectional pattern seen across different AVCs. Of course, one pattern may well be dominant in a given language or genetic unit. When constructions exist that differ from this dominant syntactic or morphosyntactic configuration in the language, possible explanations for this type of variation include the differing origins of the constructions (e.g., verb complement vs. serialized origins), or also the argument-structure or functional properties of the grammaticalized elements concerned.

    It is also important for the reader to remember that the absence of various formations from either my corpus or in my presentation of that data does not necessarily mean that a given construction is unattested or impossible in that language, just lacking in the data source(s), in the former instance, or simply not included for various practical considerations, in the latter.

1.2 On LEX-headed AVCs in African languages. The LEX-headed AVC (Anderson 2006) is a formation in which an unchanging grammatical 'particle' is grammaticalized in the same syntactic position and in the same kind of functions that one typically finds associated with auxiliary verbs within AVCs cross-linguistically, and that also historically appears to derive from an eroded or frozen auxiliary verb. As the inflectional head, the lexical verb element is inflected for all the obligatory inflectional categories (except of course the one that the auxiliary encodes), but the uninflecting auxiliary remains the syntactic or phrasal head, and the lexical verb may therefore be only semi-finite, or appear in a construction-specific dependent form. In African languages, LEX-

headed AVCs typically arise from eroded doubled inflectional forms, or from formations that had a dummy/expletive subject and clausal complement, see 5 below.

The LEX-headed pattern is well represented in African languages and typically encodes such categories as FUT, PRF, or PROG. It is not uncommon in languages such as Mödö (28) of the Bongo-Bagirmi family, or the Kuliak language Ik (29).

(28) <u>Mödö</u>

    tí   mó-kɔ̀nyì   yí
    FUT 1-rescue   you
    'I will rescue you' (Persson and Persson 1991: 19)

(29) <u>Ik</u>

    *kó-**iá** ak   bié-é   ho*
    go-**1**   PRF outside-DAT house
    'I have gone outside the house' (König 2002: 26)

Despite its lack of (synchronically active) inflection, the auxiliary verb in LEX-headed structures is, like auxiliary verbs generally are, usually the syntactic head of the resulting construction. This syntactic head status of the auxiliary may be encoded by the use of dependent verb morphology on the otherwise inflected lexical verb, e.g. use of irrealis or subjunctive mood marking. An example of this comes from Bantu Sukuma[-Kiiya], where the hodiernal future is in a now LEX-headed construction, probably derived from an original doubled pattern with phonological erosion of the subject marker on the auxiliary and with a subjunctive (modally subordinate) marked dependent lexical verb (Nurse 2008: 171).

(30) Bantu F21 <u>Sukuma (-Kiiya)</u>

    ĭz:e   *dŏ-gŏl-**e***
    FUT$_1$.AUX:FV$_{\text{SBJNTCV}}$ 1PL-BUY-**FV**$_{\text{SBJNCTV0}}$
    'we will buy (today)' (Nurse 2008: 171)

It seems likely that the development of the LEX-headed future AVC in Bantu G60 Kerewe also derived from the common verb 'come' as in Sukuma above, but with the lexical verb in the *–a* final vowel form, not the 'dependent' modal form in *-e*.

(31) Bantu G60 Kerewe

saa *tu-gula*
FUT 1PL-BUY:FV
'we will buy' (Kießling et al. 2008: 201)

Comparative evidence suggests that the variation in the following Mbay form may show an originally doubly-inflected (or split/doubled), that has been eroded or clipped to yield the LEX-headed construction:

(32) a. Mbay [Bongo-Bagirmi]　　　　　　b. Mbay

ndì	**m̄**-*sá*	*yą́ą*	*or*	**m̄**-*ndì*	**m̄**-*sá*	*yą́ą*
AUX	**1**-eat	food		**1**-AUX	**1**-eat	food

'I am/was eating' (Keegan 1997: 69)

Its sister language Gula Sara shows a LEX-headed formation with a dependent lexical verb (appearing in the infinitive form); note that the first person plural form in the same TAM-form is a doubly-headed formation.[11]

(33) Gula Sara

nḍə́ *kūsá* *gē* *ngá*
AUX INF:eat PL thing
'they/you all are eating' (Nougayrol 1999: 137)

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[11] Note that some verbs have doubled inflection with just first singular subjects in Gworok (Kagoro) of the southcentral Plateau family (Adwiraah 1989).

(34) <u>Gula Sara</u>

    zə̄-nḍə̄   *z-ūsā*   *ī*   *ngá*
    1PL-AUX   1PL-eat EXCL thing
    'we are eating' (Nougayrol 1999: 137)

The negative past in the Surmic language Tennet uses a negative particle derived from a negative verb that took a modal dependent form of the lexical verb in what is now a sub-type of LEX-headed formation with a modal dependent-marked but subject-inflected lexical verb.

(35) <u>Tennet</u>

    ngán̄nī̄ *anná*   *k-i-cin*   <u>*Lokúl̲i*</u>   *balwáz*
    NEG   1SG:NOM 1-SBJNCTV-see Lokuli   yesterday
    'I didn't see Lokuli yesterday' (Randal 1998: 248)

A similarly clear typologically parallel example of a LEX-headed AVC with a modal dependent marked lexical verb may be seen in the Kwerba language of Papua, Indonesia. Here the lexical verb, although the inflectional head, reflects its syntactic dependent status by appearing in the modally dependent irrealis form.

(36) <u>Kwerba</u> [Dani-Kwerba; Indonesia]

    nano   *wïre* *b-ang-ku-**m***
    we.DL   PROG PRS-DL-go-**IRR**
    'we two are going' (De Vries and De Vries 1997: 22)

An example of a LEX-headed construction with an infinitive-marked but subject encoding lexical verb in Bongo of the Macro-Sudan Belt is offered in (714) below in section 12. Other African languages with LEX-headed formations include Temein and Katla of the Nuba Hills (see section 14 for examples), and various northern Saharan languages (section 13). LEX-headed AVCs show the same types of origins and further historical developments into complex verb forms that typify AVCs of other inflectional patterns; see sections 4 and 5 below. For a list of LEX-headed inflectional patterns in AVCs in the African languages of my corpus see Appendix 4.

2. Doubled Inflection

One salient way in which a number of the languages of Africa stand out in comparison to better known Eurasian languages is the doubled inflectional pattern of AVCs. In this, there is often doubled subject marking, less commonly double marking of other functional categories (e.g. TAM categories), together with, or in lieu of, doubled subject marking.

The doubled inflectional pattern is here analyzed as a complex predicate structure with a functional element (= auxiliary verb) and a content element (= lexical verb), in which the lexical verb and the auxiliary verb share inflectional head status. That is, they are inflectional co-heads, a state which necessitates a pleonastic or redundant multiple encoding of all the relevant functional semantic/inflectional features, which therefore must appear with both components of the AVC (the auxiliary verb and the lexical verb). Note that this doubled inflectional pattern says nothing about the syntactic head status of the auxiliary verb or lexical verb in such formations. As is typical with AVCs, the syntactic head of the construction tends to be the auxiliary verb, and the semantic head the lexical verb.

In some minimally to moderately inflected languages, a doubled subject marking structure is characteristic of auxiliary verb constructions. In this, subject marking is encoded on both the lexical verb and auxiliary verb components of the AVC. Such a formation is found in S. Bantoid Noni, the Lendu language Ngiti and the Biu-Mandara Chadic language Muyang.

(37) a. <u>Noni</u>

> *me*   *ŋ-gɛ́ɛ́*   *ŋ-gwè*
> I   1-HAB   1-fall
> 'I usually fall' (Hyman 1981: 89)

  b. <u>Noni</u>

> *me*   *m-bèé*   *ŋ-gwe*
> I   1-AUX   1-fall
> 'I would have fallen' or 'I almost fell' or 'I am about to fall' or 'I am almost falling' (Hyman 1981: 90)

(38) <u>Ngiti</u>

    nyɨ **ny-àtsǔ**   **ny-ikpe**
    you **2**-AUX:PRF:PRS **2**-cough:PRF:PRS
    'you were on the point of coughing'   (Kutsch Lojenga 1994: 191)

(39) a. <u>Muyang</u>   b. <u>Muyang</u>

    naŋ *a-bu*   *a-ra*   *nu nə-bu*   *nə-zum* *zlam*
    3SG 3-AUX   3-come   I   1-AUX   1-eat   something
    'he is coming'   'I'm just eating something'
     (Smith 2002: 13)   (Smith 2002: 13)

In Noni, long strings of AVCs that each require the next verb to be in a subject-marked form can be found, yielding sentences like the following where first person markers occur on all six verbs.

(40) <u>Noni</u>

    me *n-tɔ̀*   *n-ge* *m-bɛ́ɛ̀*   *m-bvǔ*   *n-yúú*   *ŋ-kfun* *wan* *kɛ*
    I   1-AUX   1-AUX 1-AUX_{<still>} 1-AUX_{<again>} 1-AUX   1-hit   child NEG
    'I had still not ever hit the child'   (Hyman 1981: 87)

The doubled inflectional pattern in AVCs is widespread and recurrent across a huge and diverse range of Bantu languages. Nurse (2008) offers numerous examples of doubly-inflected compound constructions. Most of these appear to show the split/doubled inflectional pattern (with split tense, aspect, object and negative marking, see 3.2 below) rather than doubled inflection *per se*, but double subject marking is relatively common in Bantu AVCs. A62 Yambasa (41) for example shows doubled inflection in the progressive present, while M14 Lungu (42) has a fully doubly inflected form in the near future progressive.

(41) Bantu A62 <u>Yambasa</u>   (42) Bantu M14 <u>Lungu</u>

    ***a**-lé*   ***a**-núun-ə*   ***tw**-áá-shá*   ***tw**-áá-lim-a*
    3-AUX   3-watch-FV   **1PL**-TA-AUX **1PL**-TA-farm-FV
    'he is watching'   'we'll soon be farming'
    (Nurse 2008: 141)   (Nurse 2008: 163)

In the above languages, there is a formal identity of the subject markers, suggesting a possible mechanical copy of the elements from one into another, historically or underlyingly. No such analysis is desirable for a number of reasons. For one, formal identity between the two elements is not obligatory across the markers encoding functional categories reflecting the doubled inflectional pattern (which includes subject and/or TAM categories primarily). Indeed, it is not uncommon for different paradigmatic sets of markers to be used in the grammar of a given language, and individual lexical and auxiliary verbs may require inflectional markers from these different (lexically or morphosyntactically definable) sets. Thus, the following form from Oromo of Wellega reflects in the same sense a doubled pattern as the Ngiti, Dyola or Yambasa forms above, although there is no formal identity across the markers used to encode the obligatory (and doubly realized) inflectional categories.[12]

(43) <u>Oromo of Wellega</u>

    *k'ab-**a***   *t'ur-**e***
    have-**3M.PST**   AUX-**3M.PST**
    'he had' (Gragg 1976: 185)

Double-marking of non-subject categories is rare in African languages, but is found to a limited degree. Doubled negation is found in Twi for example:

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[12] Note also in this regard the variation between *y*- vs. *a*- third animate singular markers in various Bantu languages. Thank you to an anonymous referee for drawing my attention to this fact.

(44) <u>Twi</u>

    o-n-nyã   *m-ma-e*
    he-NEG-AUX   NEG-come-PST
    'he has not yet come' (Lord 1993: 219; Christaller 1881: 335)

Tonally-marked non-past may appear in a doubled inflectional structure in the Moru-Ma'di language Ma'di.

(45) <u>Ma'di</u> [Moru-Ma'di]

    má   `*kɔ̄*        `*mū*
    I   NPST:AUX   NPST:go
    'I'm about to go'   (Blackings and Fabb 2003: 165)

A construction with double marking of both subject and future tense, that is, a fully doubled inflectional structure, is found in Bantu languages like Kirundi.

(46) <u>Kirundi</u> (J61/D62)

    niya azaná   *ubwǎ:tsi bw'ínzu* **tu-zo:-ba**   **tú-zo:**-*sáka:ra inzu*
    if   3-bring   thatch   of.house   **1PL-FUT-**AUX   **1PL-FUT**-thatch house
    'if they would bring the thatch (tomorrow), we will thatch the house'
    (Botne 1986: 307)

Note that the doubled subject pattern need not be manifested in a structure with synchronically bound inflectional markers. Rather, analytic doubled subject marking of the type reported in the unclassified language Laal (47) of Chad is not uncommon in African AVCs as well, particularly among the languages of the Macro-Sudan Belt, or at least in many analyses of these languages. See 12 for more discussion of this kind of structure.

(47) <u>Laal</u> [Unclassified; Chad]

> *ʔìn cī   ʔìnɲíní kɨ́   yā:n*
> elle AUX elle   venir à corps+son(n.)
> elle vient auprès de lui'   (Boyeldieu 1982: 184)

Although inter-related, frequently parallel and collapsed into one continuum, bondedness or phonological integration and functional specialization or 'grammaticalization' must be acknowledged as logically independent parameters in the well known grammaticalization path in (1) above. Thus, something can be more grammaticalized than it is phonologically integrated and vice versa.[13]

  As already mentioned, there are a number of ways in which verbs may be marked as (morpho)syntactically dependent in African languages. The use of nominalizing or adverbializing morphology on lexical verbs in the AUX-headed pattern of inflection in African AVCs was briefly exemplified above. Other strategies for marking verbs as dependent include the use of particular modal verb forms, or tonal alternation, i.e. phonological means, or movement/dislocation, that is syntactically marked dependency, etc.

  Because auxiliary verbs tend to be the *syntactic* heads of their constructions and/or verb phrases, regardless of the particular macro-pattern of inflection associated with that AVC (that is whether they are the *inflectional* head, co-head, dependent, etc.), it should perhaps come as no surprise that AVCs of the doubled inflectional pattern may also appear with a dependent marked lexical verb. Given the possibility of multiple independent factors co-varying in such structures, each in some way diverging (or conforming) to 'standard' finite declarative structures, a yield of constructions that reflect varying degrees of syntactic headedness is to be expected.

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[13] The so-called lexical suffixes of Salish would be an example of elements that show a high degree of phonological integration, but largely retain there content semantics, generally without showing functional specialization or grammaticalization. Grammatical 'particles' thus would reflect the opposite end of the spectrum with a high level of functionality and low degree of phonological integration. Therefore I make no special consideration of inflectional clitics, which merely represent mid-points on the bondedness or phonological integration continuum between fully free-standing > tightly bound > fully eroded that characterizes elements undergoing grammaticalization. One exception to this is when the clitics target specific phrasal hosts, e.g. words on the left edge or second position of the clause, regardless of part of speech, rather than specific components of an AVC, i.e., the lexical verb or the auxiliary verb. In this case, the resulting patterns may mimic other patters, a phenomenon I call a 'pseudo-pattern'. For more on this see relevant discussions below.

In Kinyarwanda and the Nupoid language Gade, subject markers are phonologically/tonally marked as dependent on lexical verbs, even though the subject inflection itself is doubled.

(48) a. <u>Kinyarwanda</u>   b. <u>Kinyarwanda</u>

      ba-*hor-a*   **bâ**-*som-a*   **ba**-*raar-a*   **bâ**-*som-a*
      3PL-AUX-ASP **3PL:DEP**-read-ASP   **3PL**-AUX-ASP **3PL:DEP**-read-ASP
      'they might be reading'   'they are always reading'
      (Kimenyi 1980: 9)

(49) <u>Gade</u>

      baa *cícì*̧ **bàà**   *sí*   *gízè̞*
      3PL AUX **3PL.DEP** buy   yam
      'they should still be buying yams'
      (Sterk 1994: 18)

A combination of phonological/tonological and modal subordination patterns are seen in various Kana AVCs. For example, some categories, like the first singular subject, exist in tonally related pairs (50a), while other pairs, like the third singular subject markers, show both tonological and segmental differences (50b).

(50) a. <u>Kana</u>   b. <u>Kana</u> [Ogonoid; Nigeria]

      ḿ-sá   **m̀**-*dʒīgē*   *Legbo* **é**-*sá*   **à**-*lú*
      1DEF-AUX **1OPT**-snatch   Legbo **3DEF**-AUX **3.OPT**-come
      'I may snatch her'   'Legbo may join us later'
      (Ikoro 1996: 196)   (Ikoro 1996: 196)

In Nilotic languages like Teso/Ateso, dependent subjunctive subject forms have a distinctly different shape than the nearly isofunctional indicative subject forms.

(51) <u>Ateso</u>

    ***a*-bu**   ***ke*-ner**
    1-AUX.PST 1SBJNCTV-say
    'I said'
    (Heine and Reh 1984: 104; Hilders and Lawrance 1956: 14)

Doubly subject marked future AVCs commonly reflect modal subordination of the lexical verb in Bantu languages. Modal subordination of a lexical verb in a doubly subject marked construction is found in a future form in L34 Hemba (52) encoded by the final vowel –*e* (subjunctive) on the lexical verb.

(52) L34 <u>Hemba</u>

    tu-sw-a   *tu-tal-**e***
    1PL-AUX-FV   1PL-see-FV$_{SBJNCTV}$
    'we will see'
    (Aksenova 1997: 34)

Infinitive marked lexical verbs with doubled subject marking may be found in individual Bantu languages such as P21 [Ci]Yao and N30 Chichewa. In other words, the lexical verbs in the AVCs share two main features of finite structures in the language, while simultaneously bearing an overt indicator of nominalization.

(53) a. Bantu P21 <u>Yao</u>   b. Bantu P21 <u>Yao</u>

    nge   *n-**gu**-wona*   *ngu*   *tu-**ku**-wona*
    NEG:1   1-INF-see:FV   NEG:1PL 1PL-INF-see:FV
    'I don't see'   'we don't see'
    (Torrend 1891: 233)

(54) Bantu N30 <u>Chichewa</u>

    a-khala *a-**ku**-gwir-a*
    3-stay   3-INF-work-FV
    'he has been working …' (Bentley and Kulemeka 2001: 33)

Adverbial or nominalized dependency may be found in the following doubled subject construction in the Venda continuative with a dependent marked lexical verb and the final vowel –*a*.

(55) <u>Venda</u> [Bantu; South Africa, Zimbabwe]

> *vha-dzula vha-**tshi**-vhala*
> 3PL-CONT   3PL-**DEP**-read
> 'they always/continously read' (Heine 1993: 38)

Note that only a percentage of doubled inflectional AVCs would ever show any kind of overt dependency morphology as only a moderate percentage of them derive historically from embedded structures. Many such doubled inflectional AVCs rather arise via a process of functional semantic specialization of serialized formations. A summary of the kinds of doubled patterns mentioned above and the languages exemplifying the sub-pattern is offered in Table-1. For a full list of doubled inflectional patterns in the African languages of my corpus see Appendix 5.

Pattern	Language[s] Exemplified
Doubled subject inflection	Ngiti, Mbay, Babungo, Siluyana, Dyola, Yambasa
Doubled subject + TAM inflection	Oromo of Wellega, Siswati, Kirundi, Lungu
Doubled TAM inflection	Ma'di
Doubled subject + DEP.SUBJ.phon	Kana, Kinyarwanda
Doubled subject + MOD.dep	Hemba, Kana, Tumbuza, Lungu
Doubled subject + ADV/NOM.DEP	Venda, Yao, Chichewa

Table 1: Doubled Inflectional Patterns in Select African Languages

When viewed synchronically, it appears that a given AVC in certain languages may show variation with respect to the inflectional pattern associated with it. Thus, it is not uncommon to find variation between AUX-headed and doubled inflectional patterns in

African languages. Historically speaking this reflects several different factors. In some instances this may be explained by particular predicates licensing complements that reflect varying degrees of finiteness. For example, Surmic Mursi allows either derived nominalized complements or semi-finite verbal complements with a modal/dependent subject marking, with one and the same predicate, both of which may enter into a grammaticalization relationship with their original attendant matrix predicate.

(56) a. Mursi [Surmic; Sudan, Ethiopia]   b. Mursi

    kì-hìnì *wu-**cen***   ***kì-hìnì***   ***ku**-curo*
    1-want   go-**VN**   **1**-want   **1SBJNCTV**-wash
    'I want to go'   'I want to wash'
    (Turton and Bender 1976: 552)

The Kuliak language So[o] (or Tepes) of Uganda shows roughly approximate variation to that seen in Mursi between semi-finite and infinitive complements with certain verbs.

(57) a. So [Kuliak, Uganda]   b. So

    cám-ɪ(s)a *gá-ɔ́**g***   *éù*   or   *cám-ɪ(s)a* ***mɔ**-gá-**sa*** *éù*
    DES-**1**   go-**INF**   home   DES-**1**   **NAR**-go-**1**   home
    'I want to go home'   'I want to go home'
    (Heine and Reh 1984: 135)

Indeed, with some grammaticalized AVCs in a single language it is possible for the following material to constitute either an embedded verb complement sequence or a serialized structure, i.e. with a either a non-finite or finite 'complement'. Such is the case in the Bak Atlantic language Diola Fogny. According to Heine and Reh (1984) and Heine (1993) such variation reflects two different syntactic and cognitive schema that have led to this variable grammaticalization, viz. 'serial periphrasis' (yielding the doubled pattern) and 'PP-periphrasis' (yielding the AUX-headed structure). Thus, the doubled pattern may show variation with the AUX-headed pattern in an isofunctional formation using the same auxiliary verb. This is the case in the following AVC in Diola Fogny. Put differently, the lexical verb is either in a dependent-head relationship with the lexical verb (the AUX-headed pattern) or in an inflectional co-headed (or co-subordinate) relationship (the doubled pattern), (morpho)syntactically speaking, but the function of the construction remains the same.

(58) <u>Diola Fogny</u> [N. Atlantic; Senegal/Gambia]

     ***i**-lakò **fu**-ri*   *or*   ***i**-lakò **i**-ri*
     1-AUX **INF**-eat   **1**-AUX   **1**-eat
     'I was eating'   'I was eating'
     (Heine 1993: 46)   (Heine 1993: 46)

In Ngambay-Moundou of the Bongo-Bagirmi family, certain positional verbs allowed complements to appear in either a quasi-finite serialized structure or a nominalized structure serving as the complement to a prepositional element. The result is the same: there appears to be isofunctional structures using the same auxiliary verb that allow either an AUX-headed or a doubled inflectional pattern.

(59) a. <u>Ngambay-Moundou</u>   b. <u>Ngambay-Moundou</u>

     m-îsī   m-úsā dā   *m-îsī mbā k-ùsà dā*
     1-AUX   **1**-eat   meat   **1**-AUX   for   **NOM**-eat meat
     'I am eating meat'   'I am eating meat'

   c. <u>Ngambay-Moundou</u>   d. <u>Ngambay-Moundou</u>

     m-ár   m-úsā dā   *m-ár   mbā k-ùsà dā*
     1-AUX   **1**-eat   meat   **1**-AUX   for   **NOM**-eat meat
      'I am eating meat'   'I am eating meat'
     (Heine and Reh 1984: 126; Vandame 1963: 94-96)

Another different example of this can be seen in the Shambala future, which may appear in an AUX-headed construction with an infinitive marked lexical verb, or in a doubled subject form with the lexical verb in the modally dependent –*e* subjunctive form. Variant forms of this type with nearly the same meaning are common in Bantu languages, and often express different degrees of futurity or certainty (or pastness).

(60) a. <u>Shambala</u> (G23)   b. <u>Shambala</u>

ni*-ing-a*	***ku****-kund-**a***	***ni****-ing-a*	***ni****-kund-**e***
1-FUT-**FV**	**INF**-hope-**FV**	**1**-FUT-**FV**	**1**-hope-**FV**_{SBJNTCV}

'I will hope'   'I will hope'
(Aksenova 1997: 34)

When viewed comparatively, it is sometimes the case that two Bantu languages will exhibit pattern variation in etymologically related constructions with an isofunctional auxiliary, e.g. past progressive or imperfect in 'Kafir' (Xhosa) and Tonga as reported by Torrend (1891), where the former has a split/doubled pattern (see 3.2 below) and the latter an AUX-headed one.

(61) <u>'Kafir'/Xhosa</u> (S41) cf.   (62)   <u>Tonga</u> (S62)

ba*-a-li*	***ba****-lia*	***ba****-a-li*	***ku****-lia*
3PL-PST-AUX	**3PL**-eat:FV	**3PL**-PST-AUX	**INF**-eat:FV

'they were eating'   'they were eating'
(Torrend 1891: 246)

Systematic variation can be seen both across different AVCs within a single language, and across different lexically-defined sub-classes of lexical verbs with one and the same auxiliary, yielding what looks like a paradigmatic split in inflectional pattern across iso-functional (and nearly isomorphic) AVCs. Thus in Kabba, a Bongo-Bagirmi language from the Central African Republic (Moser 2005), there are two sub-classes of *k*-initial verb stems, one that loses the initial *k*- and one that retains it when conjugated.

(63) <u>Kabba</u> [C. Sudanic] paradigmatic splits

	<u>Laugh */kòko/*</u>	<u>Give */k-àrə/*</u>
PFV.1SG	***m**-kòko*	***m**-arə*
PFV.2SG	***e**-kòko*	*Ø-arə*
PFV.3SG	***ń**-kòko*	***n**-árə*
PFV.1PL	***ǹ**-kòko*	***j**-àrə*
PFV.2PL	***e**-kòko-**je***	*Ø-arə-je*
PFV.3PL	***ń**-kòko*	***d**-árə-je*

(Moser 2005: 281)

The perfective (63) is a straightforward simplex morphological structure in Kabba, with two mostly overlapping sets of subject prefixes found directly on the verb stem with the two conjugational classes. The imperfective and future forms are encoded through AVCs with the auxiliaries *–aw* and *–á* respectively. The future (64) is an AUX-headed AVC for both classes (except with 2nd plural subjects), but the *k-* is retained in both verbal sub-classes.

(64) <u>Kabba</u>

FUT.1SG	***m**-á kòko*	***m**-á kàrə*
FUT.2SG	*Ø-á kòko*	*Ø-á kàrə*
FUT.3SG	***n**-á kòko*	***n**-á kàrə*
FUT.1PL	***j**-à kòko*	***j**-á kàrə*
FUT.2PL	*Ø-á kòko-**je***	*Ø-á kàrə-**je***
FUT.3PL	***d**-á kòko*	***d**-á kàrə*

(Moser 2005: 281)

In the imperfective (65) on the other hand, the verbs that keep *k-* throughout their paradigms, like *kòko* 'laugh', show a typical AUX-headed pattern in the imperfective AVC, with subject marked only on the auxiliary (except in the 2PL which is always marked by a suffix or enclitic on the lexical verb yielding what appears to be a LEX-

headed pattern). Verbs with mobile *k-* conversely lose the *k-* and show a doubled subject inflectional pattern.[14]

(65) <u>Kabba</u>

IPFV.1SG	***m***-*aw kòko*	***m***-*aw **m**-arə*
IPFV.2SG	*Ø-aw kòko*	*Ø-aw Ø-arə*
IPFV.3SG	***n***-*áw kòko*	***n***-*áw **n**-árə*
IPFV.1PL	***j***-*àw kòko*	***j***-*àw **j**-àrə*
IPFV.2PL	*Ø-aw kòko-je*	*aw arə-**je***
IPFV.3PL	***d***-*áw kòko*	***d***-*áw **d**-ára-**je***

(Moser 2005: 281)

These Kabba constructions are tabulated in (66).

(66) <u>Kabba</u>

PFV: SUBJ-LEX(-2PL)	PFV: SUBJ-LEX-(-2PL)
IPFV: SUBJ-AUX LEX-(-2PL)	IPFV: SUBJ-AUX SUBJ-LEX-(-2PL)
FUT: SUBJ-AUX LEX-(-2PL)	FUT: SUBJ-AUX LEX-(-2PL)

Lastly, LEX-headed AVCs may alternate with doubly inflected AVCs synchronically or may develop from such a structure over time. An example of the former type may be seen in the following Mbay formations, a Bongo-Bagirmi language of Chad, where LEX-headed inflection alternates with doubled inflection in isofunctional structures using the same auxiliary verbs.

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[14] Note that the verb 'give' has also been grammaticalized in Kabba in numerous functions including as a benefactive voice marker. In this function, it keeps it object marking capabilities, and thus appears in a split/doubled pattern when conjugated, with the auxiliary taking subject and object marking, the lexical verb just subject alone. For more on split/doubled inflection, see 3.2.

(b) i. <u>Kabba</u>   ii. <u>Kabba</u>
    m-ínga dèné m-ar-ɛ́   *ǹ-gáji ə̀r j-àr-ɛ́*
    1-find wife 1-BEN-3   1PL-crush stone 1PL-BEN-3
    'I found a wife for him'   'we crush stone for him'
    (Moser 2005: 285)   (Moser 2005: 286)

(67) <u>Mbay</u> (C. Sudanic, Chad)

    ndì **kə̀-sà-n̄**   *yą́ą̣*   *or*   **kə̀-ndì**   **kə̀-sà-n̄**   *yą́ą̣*
    AUX 1PL-eat-PL   food   1PL-AUX   1PL-eat-PL   food
    'we are/were eating'   (Keegan 1997: 69)

Pattern Variation	Language[s]
Doubled subject ~ AUX-headed [+INF]	Diola Fogny, Shambala, Kabba IPFV
	'Kafir' vs. Tonga
Doubled subject ~ LEX-headed	Mbay

Table 2: Variation with Doubled Inflectional Patterns

2.2 Dependent marked auxiliary verbs. Although it is not common, due to the range of structures that may give rise to (mainly doubly inflected) AVCs in such African language families as Bantu (and a small range of other, non-African languages such as Mbyá Guarani (Dooley 1990)),[15] there are a small number of AVCs in which there are dependent-marked *auxiliary* verbs, particularly with the doubled inflectional pattern. Examples of originally dependent-marked auxiliary verbs in an AVC in a Bantu language can be seen in F21 Sukuma and possibly S32 N. Sotho and E22 Haya as well. In

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[15] An example of Mbya Guarani form is offered in (c) below, where the auxiliary verb is dependent marked as a serialized verb, meaning it is dependent on the preceding (lexical) verb:

(c) <u>Mbya Guaraní</u> [Tupi-Guaraní; Paraguay, Brazil]

    ha'e   *rire*   *je*   *o-arõ o-kua-py*
    ANAPH after   HEARSAY 3-wait 3-AUX.PL-SERIALIZED
    'after that they all waited for him'
    (Dooley 1990: 479)

Sukuma, originally subjunctive forms of auxiliary verbs are found grammaticalized in a doubly subject marked future progressive construction.

(68) Bantu F21 <u>Sukuma</u>

    *dʊ-ßiíz-**e***   *dʊ-lɪɪ-gʊ́la*
    1PL-AUX-**FV**_{SBJNCTV}   1PL-TA-buy:FV
    'we'll be buying' (Nurse 2008: 299)

Bantu S32 Northern Sotho (Sepedi) has dependent marked auxiliaries in the future perfect and past perfect forms.

(69) a. Bantu S32 <u>N. Sotho</u>

    *re-Ø-b-**e***   *re-Ø-rek-ile*
    1PL-TA-AUX-**FV**_{SBJNCTV} 1PL-TA-buy-FV_{PRF}
    'we had bought'

    b. Bantu S32 <u>N. Sotho</u>

    *re-tlo-b-**e***   *re-Ø-rek-ile*
    1PL-FUT-AUX-**FV**_{SBJNCTV}   1PL-TA-buy-FV_{PRF}
    'we will have bought' (Nurse 2008: 157)

In the Bantu E22 Haya negative future perfect, the negative-marked auxiliary verb appears in the subjunctive (possibly co-negative) form.

(70) Bantu E22 <u>Haya</u>

    *ti-tuu-b-**é***   *tw-áá-guz-ire*
    NEG-1PL-AUX_{FUT}-FUT[:FV_{SBJNCTV}] 1PL-PST₁-buy-FV_{PRF}
    'we will not have bought yet'   (Nurse 2008: 201)

Dependent marked auxiliaries are not widely attested among the languages of the world, but the above mentioned African forms are not unique.[16] Overall however, given that auxiliaries tend to be the syntactic head of their constructions, it is safe to say that dependent marked auxiliaries are fairly uncommon cross-linguistically as a whole. A special investigation of these unusual formations remains a goal of future research.

3 Split and Split-Doubled Inflection

3.1 True Split Patterns. The AUX-headed (and LEX-headed) and doubled patterns are relatively easy to explain if one assumes that there is a morphosyntactic head-dependency relation between the lexical verb and auxiliary verb (however formalized or construed). Up to this point in the discussion this has been called the inflectional head, with it and its

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[16] A perhaps even clearer example of a dependent marked co-negative auxiliary verb in an AVC may be seen in Oromo varieties, for example in the following formations in Harar Oromo (d), where the co-negative suffix on the inflectional head, here the auxiliary verb in this AUX-headed construction is clearly the same as the dependent verb marker –*u*, seen in (e).

(d) i. Harar Oromo (Cushitic; Ethiopia)

    inníi déem-úu-ti   n-jír-u
    he   go-VN-*TI*   NEG-AUX.PRS.PROG.M-DEP
    'he is not going' (Owens 1985: 73)

   ii. Harar Oromo

    isíi-n   déem-úu-f hin-jirat-t-u
    she-NOM   go-VN-DAT NEG-AUX.PRS.PROG.F-F-DEP
    'she will not be going' (Owens 1985: 73)

(e) i. Harar Oromo   ii. Harar Oromo

    ha   d'úf-u   *isíi-n   nama xan béet-t-u   sún   arkite*
    JUSSIVE come-DEP   she-NOM personas   know-F-DEP that saw:F:PST
    'let him come'   'she saw the person whom she knows'
    (Owens 1985: 79)   (Owens 1985: 86)

Oromo of Wellega has similar structures in the negative with a dependent co-negative form on the auxiliary verb (see (16)).

dependents largely conceived of (if not actually explicitly formalized as such) in a configuration roughly analogous to the head-dependent relation(s) that exists between auxiliary and lexical verb elements syntactically. The inflectional head has been argued to be the auxiliary in the AUX-headed AVC (and the lexical verb in the LEX-headed one). On the other hand, there appears to be some kind of conjunct-headed or flat-branching structure necessary to explain the feature sharing that exists in the doubled pattern.

While a discrete notion of inflectional head would therefore be theoretically appealing, given the scalar characteristics of most if not all features of AVCs, it is perhaps not a great shock that the absolute discreteness of the 'inflectional head' is not supported. Indeed, while so far I have only presented constructions that behave in a quasi-well-formed manner in order to elucidate the autonomous nature of inflectional/functional semantic, syntactic and lexical semantic features of AVCs, this was done in anticipation of examining even more complex phenomena that various African languages offer. With this in mind, I now turn to a presentation of some data that do not behave in a pre-theoretically predicted manner, but nevertheless remain consistent across several languages, as well as reflect demonstrable trends with respect to their diachronic sources, and with parallels to languages outside of Africa as well.

In the split inflectional pattern (Anderson 1999, 2000, 2006), the verbal inflections that are obligatory to render the form morphosyntactically well-formed, i.e. the encoding of functional semantic properties in these constructions–the criteria that serve as the basis for determining the inflectional head–are split between the lexical verb and the auxiliary verb. That is, some functional categories are encoded only on the lexical verb, others only on the auxiliary verb. When there are two completely distributionally distinct sets of categories/formal markers, then true split systems are found. More frequently however, there is partial overlap, such that some categories show truly split distribution and others show doubled patterning. True split inflectional patterns are not overly common in AVCs in African languages, but the split/doubled systems, where some categories are limited to either the lexical verb or the auxiliary verb, while others appear with both verbs simultaneously, occur relatively more frequently in African languages than elsewhere (see 3.2 below).

Cross-linguistically, perhaps the most common split inflectional patterns attested in AVCs is one in which the morphological index of object appears with the lexical verb component while that for the subject appears with the auxiliary verb. There are a small number of West African languages that exhibit this split inflectional pattern in AVCs:

(71) Split Construction-1:   Subject+Auxiliary Verb   Object+Lexical Verb

These languages include the Ogonoid Cross River language Eleme and its close sister language Kana, and Bolanci of the Chadic family. Note that the syntactic/phrasal order is that of auxiliary followed by lexical verb in these constructions (as typically characterizes AVCs in these languages).

(72) Eleme

    ɛ̀bai rɛ-do-do-rõ   *nɛ́-e*   *ǹsã*
    1pl **1PL**-REDPL-AUX.PRS-APPL give-**3sg**   book
    'we are still giving him books' (Field Notes)

 (73) Kana (Cross-River/Ogonoid; Nigeria)

    ***m**-wēè̀* ***ā**-kūē*
    1-PST   2-call
    'I called you' (Ikoro 1996)

(74) Bolanci (Western Chadic, Nigeria)

    'n-jii   *'unḍa-kó*
    1-AUX call-2OBJ
    'I call you' (Lukas 1971: 128)

The formal realization of the pattern is identical in Eleme and Bolanci, and different in Kana, a distribution which suggests separate independent developments in the two Ogonoid Cross River languages. It is clear that these two seemingly similar developments reflect rather heterogeneous origins. In Eleme, the distribution follows from the syntactic structure of the source constructions, which probably reflects the grammaticalization of an original nuclear serialized formation with an intransitive V_1 and a transitive V_2 (see 4.2 below), while in Kana, the particular realization of the elements appears to be morphophonologically motivated: the object-encoding elements are clitics that target that position, not the lexical verb *per se*, as the following example shows:

(75) <u>Kana</u>

 ***m**-wēè* ***ā**-dáb* *mùὲ*
 1-PST **2**-MOD see
 'I was able to see you' (Ikoro 1996)

This complex auxiliary structure (a past capabilitive) is of the shape SUBJ-AuxV$_1$ OBJ-AuxV$_2$ LexV, with the subject appearing as an initial proclitic and the object as a second position proclitic on the second auxiliary. Thus, although Eleme and Kana share structures that show a[n apparent] split distribution in certain auxiliary structures, only Eleme reflects a split structure motivated by the morphosyntactic structure of the original source (serialization) formation, while Kana reflects the particular prosodo-phonological properties of the argument encoding elements themselves. Chadic Bolanci likely reflects the similar macro-areal trends as does Eleme in the development of such a split structure.

(76) Kana   Subject-AV   Object-[L]V

(77) Eleme   Subject-AV   LV-Object

(78) Bolanci   Subject-AV   LV-Object

Another common split system in AVCs involves the marking of negation. Various Afroasiatic languages of 'Ethiopia' (see 11 below) show a range of split systems with respect to the distribution of negative inflection in AVCs. For example, in Omotic Gimira negative/dependent-marked lexical verbs appear followed by a tense- and subject-marked auxiliary (in two different AVCs), while in Cushitic Harar Oromo a negative- and tense-marked lexical verb is followed by a subject-encoding auxiliary.

(79) <u>Gimira (Benchnon)</u>

 ta¹na³   *ha⁴mar⁴gu³*   *yis³tu²e³*
 I   go:NEG.PRTCPL   AUX:PST:1
 'I had not gone' (Breeze 1990: 32)

(80) Harar Oromo

> *xaléesá* ***hin**-déem-ne* *ture*
> yesterday **NEG**-go-PST   AUX:1
> 'I didn't go yesterday' (Owens 1985: 74)

(81) Gimira   LV-NEG   AV-TENSE/SUBJ

(82) Harar Oromo   NEG-LV-TENSE   AV-SUBJ

Note that the syntactic/phrasal order of elements is V Aux here, as is typical of languages of the macro-Ethiopia region.

   Another split system that is idiosyncractic to a particular African language is one attested in the Leko-Nimbari language Doyayo. Here lexical verbs encode tense/aspect categories but other inflectional categories appear with the auxiliary verb.

(83) Doyayo

> *mi³ gi²-s-i-g*   *kaá-kó*
> I   AUX-BEN-EPN-3 weep-PRS
> 'I'm crying to him' (Wiering and Wiering 1994: 75)

3.2 Split/Doubled Patterns. As mentioned in section 2 above, by far the most common doubled inflectional pattern seen in AVCs in African languages (and cross-linguistically) is one with doubled subject marking. Perhaps then it should come as no surprise that the category that is typically doubled in split/doubled inflectional patterns in AVCs is also the subject. In fact, the most common split/doubled patterns differ from corresponding split inflectional patterns by the doubling of the subject. Thus, one relatively common split/doubled pattern consists of one in which the subject appears doubled, but object is encoded only on the lexical verb which subcategorizes for it.

(84) Split/Doubled Construction 1:   SUBJ-AV SUBJ-LV-OBJ

For example, examine the following construction from Doyayo.

(85) <u>Doyayo</u>

    hi¹ *da³* **hi¹** *taa³-**be¹***
    3PL POT **3PL** shoot-**1**
    'they might shoot me' or 'I might get shot'
    (Wiering and Wiering 1994: 222)

Although phonologically quasi-independent (Elders 2004), the subject marker appears both before the auxiliary verb and the lexical verb in these Doyayo sentences, while the (perhaps) bound object marker occurs only with the lexical verb that subcategorizes for it.

    Bantu Lamba shows a variant of this pattern in the following AVC, with the object prefix only encoded on the lexical verb, but with doubled subject and tense marking.

(86) Split/Doubled Construction: SUBJ-TA-AV   SUBJ-TA-OBJ-LV

(87) M54 <u>Lamba</u>

    n-ā-*li*   ***n-ā-mu****-wona* *lēlo*
    1-PST-AUX **1-PST-3**-see:FV today
    'I have seen him today' (Botne 1986: 307; Doke 1938: 305)

Its sister language Kuri[y]a shows yet another slight variant on this basic split/doubled inflectional theme. In the following construction, both the lexical verb and the auxiliary appear in the *–e* subjunctive form (i.e. in a co-headed or co-subordinate relationship), with doubled subject marking, the auxiliary encoding tense and the lexical verb indexing the grammatical object.

(88) Kuriya variant: Subject-Tense-AV-*e*   Subject-Object-LV-*e*

(89) <u>Kuri[y]a</u> (E43)

    *ne=**n**-ra-c-e*   ***n-ba**-h-e*   *etara*
    this=**1**-FUT-AUX-FV_{SBJNCTV} **1-3PL**-give-FV_{SBJNCTV}lamp
    'I will give them the lamp' (Aksenova 1997: 20)

Another split/doubled pattern attested in a range of AVCs across various African languages is one in which the subject appears doubled, tense on the auxiliary, but

negative is found only on the lexical verb. This is thus much like the form found in Gimira above, only with doubled subject marking. Such a formation is found in the following Swahili and Ejagham AVCs. Note that the lexical verb appears in the co-negative –*i* form in Swahili. For more on negation in Bantu see Kamba Muzenga (1981, 2005), Maho (2007) or Güldemann (1999).[17]

(90) Split/Doubled Construction 2:   Subj-TAM-AV   Neg-Subj-LV-CONEG

(91) <u>Swahili</u> (G42)

    tu-li-kuwa   *ha-tu-fany-i*
    1PL-*AUX>TA-INF:AUX   NEG-1PL-do-NEG
    'we weren't doing anything' (Aksenova 1997: 21)

Ogbronuagum (Bukuma) and Ibibio of Nigeria conversely show constructions with a negative on the auxiliary verb but doubled subject marking in the following manner:

(92) Split/Doubled Construction 2B: Subj-Neg-AV   Subj-LV

(93) <u>Ogbronuagum (Bukuma)</u>

    n-ń-née   *o-ɣíle*
    1-FUT.NEG-AUX:1:NEG   **1**-do
    'I can't do (it)' (Kari 2000: 40)

(94) <u>Ibibio</u>

    Ùdèmé ** í-kí-***tóoñoké*   **í-***táñ*   *íkɔ̂*   *ǹté*   *ábooñ*
    Udeme   CNC-PST-start:NEG   CNC-talk   word   like   chief
    'Udeme didn't start to talk like a chief' (Essien 1987: 154)

In the past progressive in the Bantu language Hemba, tense is found on the auxiliary, but subject is doubly marked in various AVCs. Note that this construction differs from the

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[17] There is also of course systematic difference in the templatic position of negative marking on verbs in numerous Bantu languages between main and subordinate clauses.

doubled inflectional pattern seen in the future in Hemba mentioned in (52) above, where the lexical verb rather appears in the marked modal –*e* final vowel form.

(95) Hemba: Subj-TAM-AV   Subj-LV[-*a*]

(96) <u>Hemba</u> [Bantu]

    tw-a-*li*   **tu**-*tib-a*   *muti*
    1PL-TNS-AUX **1PL**-cut-FV   tree
    'we were cutting the tree' (Aksenova 1997: 27)

Another complex split/doubled pattern that is slightly different from the Hemba one above is found in the Bantu language Nkore-Kiga (Nyankore) of Uganda. Here subject is doubled as is common in Bantu AVCs and remote past tense is encoded on the auxiliary, but progressive aspect is marked on the lexical verb. This kind of split with tense marked on the auxiliary verb and aspect on the lexical verb is very common in Bantu languages (Nurse 2008).

(97) Nkore-Kiga Past Progressive: Subj-Rem.Pst-AV Prog-Subj-LV[-*a*]

(98) <u>Nkore-Kiga</u>

    n-ka-*ba*   **ni-n**-*teera*   *enanga*
    1-REM.PST-AUX   **PROG-1**-play:FV organ
    'I was playing the organ' (Taylor 1985: 161)

In the Ekoid Bantu language Ejagham, the durative is encoded by doubled subject marking with the lexical verb appearing in the 'imperfective' –*á* form, presumably related to the 'indicative' or 'neutral' final vowel of Narrow Bantu languages mentioned numerous times throughout this presentation with respect to the form of lexical verbs in various Bantu AVCs (Nurse 2007a, 2007b, 2008). This could therefore either be considered a doubled subject inflectional pattern (perhaps at least historically) or a split/doubled one.

(99) <u>Ejagham</u> (Ekoid Bantu)

    à-nyə́nè   *à-chòr-á*
    3SG.PFV-AUX 3SG.PFV-speak-IPFV
    'she is still talking' (Watters 2000: 196)

Two different split/doubled patterns may be found in AVCs in Bantu languages involving doubled subject marking and a lexical verb in the *–ile* perfect form. The two types differ as to the locus of tense inflection. In one type, found in the Xhosa AVC listed in (100), the tense marking is found on the auxiliary–the typical Bantu distribution. In the other type, represented by the Ciyao AVC given in (101), the lexical verb also bears the tense prefixes.

(100) <u>Xhosa</u> (Bantu; South Africa)

    nd-a-*ye*   **ndi**-*theth-ile*
    1SG-TA-AUX **1SG**-speak-PRF
    'I had spoken (long ago)' (Heine 1993: 108)

(101) <u>Ciyao</u>

    ngá-li   *juvávééceeté*   *sooní pélé-po* **tu**-*li*   **tw-a**-*más-ilé*
    not-AUX   REL:3:speak:ASP   again that.time **1PL-**AUX **1PL-PST**-finish-ASP

    góná
    sleep

    'no one spoke again, that was after we had gone to sleep'
    (Botne 1986: 305; Whiteley 1966: 214)

(102) Xhosa: SUBJ-TAM-AV SUBJ-LV-*ile*_{PRF}

(103) Ciyao: SUBJ-AV   SUBJ-TAM-LV-*ile*_{PRF}

Note that the *–ile* 'perfect' (Berger 1938, Voeltz 1980) is here considered to represent a type of 'final-vowel marking', as it appears in the so-called final vowel position of lexical verbs in Bantu auxiliary structures.[18]

Lexical verbs may of course also be marked as dependent in a split/doubled inflectional AVC, much as they may be in other inflectional patterns; this reflects the syntactic headedness of the auxiliary in the construction, despite the split characteristics of it morphosyntactically. That is, although not the sole *inflectional* (or morphosyntactic) head of the construction, the auxiliary verb in the following Kemantney formation retains its status as *syntactic* head, and licenses a dependent form of the lexical verb component of the AVC in an adverbially dependent gerund form, e.g., is of the form in (104a):

(104) a. LEX-SUBJ-GER AUX-SUBJ-TAM

(104) b. <u>Kemantney</u> (Qemant)

> *ïntï   kïz-**y-ä**   sïmb-**ïy-eɣ**ʷ*
> you   sell-**2-GER**   AUX-**2-PST**
> 'you had sold' (Leyew 2003: 194)

In Afar, lexical verbs appear in a modally subordinate form with doubled subject marking and aspectual marking on the auxiliary (105a).

(105) a. SUBJ-LEX-DEP_{⟨SBJNCTV⟩}   AUX-SUBJ-ASP

(105) b. <u>Afar</u>   c. <u>Afar</u>

> *t-a ˈkam-**u**   way-ˈ**t-a**   ˈgen-**n-u**   way-ˈ**n-a***
> 2-eat-**SBJNCTV**   AUX-**2-IMPF**   go-**1PL-SBJNCTV**   AUX-**1PL-IMPF**
> 'you are about to eat'   'we are about to go'
> (Bliese 1976: 147)

---

[18] The last traditional position in the Bantu verbal complex is sometimes called the final vowel [FV]; this delineates the right edge of the inflectional stem. Sometimes these vowels have particular aspectual and/or modal properties in individual Bantu languages, and possibly Proto-Bantu as well (Nurse 2007a, 2007b, 2008). This FV position interacts with elements at the TA position and with auxiliary structures in particular, so is of particular relevance to our discussion.

Auxiliary verb constructions of the split/doubled inflectional type may also appear with dependent marked lexical verbs in Bantu languages. As mentioned above, in Kinyarwanda, the negative future progressive has a negative dependent form of the lexical verb with doubled subject marking.

(106) a. SUBJ-TAM-AUX   SUBJ-NEG.DEP-LEX:*a*

(106) b. <u>Kinyarwanda</u>

> *ábáana* **ba-zaa**-*ba*   **ba-da**-*sóm-a*   *ibitabo*
> children **3PL-FUT**-AUX   **3PL-NEG.DEP**-read-FV   PL:books
> 'the children won't be reading' (Kimenyi 1979: 189)

Finally, Eleme has several AVCs in which a lexical verb may be marked by the general 'adverbial' subordination or dependency marker *e-* in split/doubled formations, with doubled subject, applicative marked only on the auxiliary and object marked on the lexical verb.

(107) a. SUBJ_{‹NUMB›}-AUX-[2PL]-APPL   DEP-LEX-SUBJ

(107) b. <u>Eleme</u>

> *ò-do-í-rũ*   *e-gbòi-í*   *ɛ̀tʃṹ*
> 2-be.PRS-2PL-APPL   **DEP**-stitch-2PL clothes
> 'you are stitching clothes (for someone)' (Bond 2006)

c. <u>Eleme</u>

> *ò-bo-í-ru*   *e-maː-í*   *àdádʒi*   *ɔ̀nɛnɛ*
> 2-should-2PL-APPL **DEP**-bring-2PL   Adaji   gift
> 'you should bring Adaji a gift' (Bond 2006)

   d. Eleme

   *òbàù bo-r-**e**-nɛ́-í-e*   *ǹsã*
   2PL   should-APPL-**DEP**-give-2PL-3SG   book
   'you should give him a book' (Bond 2006)

A range of different conjugations in Eleme show a curious systematic split between
inflection with second plural subjects, where subject person is marked as a prefix on the
auxiliary, but subject person/number and aspect is encoded by a suffix on the lexical
verb, and a pattern found with third plural subjects where subject person is marked by a
prefix on the auxiliary but subject person/number as a suffix on the *auxiliary verb,* and
aspect is marked by a suffix on the lexical verb as usual. For more on these formations,
see Bond (2006, 2010).

(108) a. Eleme   b. Eleme

   *ò-bere   kɛ-**á-í***   *m̀bó*   *è-bere-rí   kɛ-**á***   *m̀bó*
   2-PRF   slaughter-**HAB-2PL** goat   3-PRF-**3PL**   slaughter-**HAB**   goat
   'you used to slaughter goats'   'they used to slaughter goats'
   (Bond 2006)

For a full list of split and split/doubled inflectional patterns in AVCs in the African
languages of my corpus, see Appendix 6.

4 Sources for AVCs in African Languages

In section 4 I present the left edge of the grammaticalization continuum for AVCs (109):

 (109) lexical verb [+ syntagm] > auxiliary verb [+ lexical verb] > ….

This left edge concerns two aspects of the development of AVCs, namely functional
semantic specialization and syntactic shift from embedded/complement, serialized or
clause-chained constructions into mono-clausal AVCs. I sketch the semantic
developments of AVCs in 4.1, and I exemplify the types of syntactic constructional
sources for AVCs in African languages and the sub-types of inflectional patterns these
each typically yield in 4.2.

4.1 Common source-target lexical > functional semantic specialization in AVCs.
Auxiliary verb constructions derive from other complex structures through the specialization of originally content verbal semantics into the expression of functional or grammatical categories. The processes of semantic specialization that accompany grammaticalization in African languages have been examined in a range of studies by Bernd Heine (1991, 1994) and his colleagues (e.g. Heine and Reh 1984, Heine, Claudi and Hünnemeyer 1991, Heine 1993) and grammaticalization issues also feature in works by such Africanists as Arnold (1981), Botne (1986, 1990, 1993, 1999, 2003a, 2003b, 2006), Nsuka Nkutsi (1986), Emanation (1992), Miehe (1992), Creissels (1998a/b, 2000, 2002, 2003, et al. 2008), Güldemann (1996, 1998, 1999, 2003, 2005 2010b), and Ameka (2005) and in general works on the development of tense/aspect systems as well (e.g., Bybee and Dahl 1989, Bybee et al. 1991, Harris and Campbell 1995, etc.). The semantic developments of a number of auxiliary structures in African languages are discussed and exemplified extensively in many of these works, and the interested reader is referred to them for more details than can be offered here.

Although the mechanisms of metaphorical extension that occur in the process of auxiliation (Kuteva 2001, Sweetser 1988) are complex and often show the confluence of several independent factors, some generalizations about the development of lexical verbal semantics to functional semantics can be made. Certain source-target semantic correlations are particularly common in African languages, e.g. motion semantics yielding future tense (deriving from 'go' and 'come'). Furthermore, functional paths of 'regrammaticalization' or 'further grammaticalization', that is, the shift into other functional domains of constructions already having functional properties, may be seen in closely related varieties of particular African languages, for example i) in the developments attested across Somali varieties which derive from 'keep', viz., first to durative in Dabarro Somali and Mudung Somali, to progressive in (the dialect forming the basis of) Standard Somali and finally to present in Jiddu Somali, or ii) the shifts from verb focus > progressive > general present > non-past characteristic of various Bantu languages exemplified below < ('be at') and in 6.1 (see also Güldemann 2003).

With respect to languages of Africa, I have (non-exhaustively) listed some of the more common of these developments from content > functional semantics (or source > target semantics) in AVCs in Table 3 below.

Table 3

SOURCE	TARGET	LANGUAGE[S]
ABANDON	Terminative	Kxoe
ARRIVE	Ability	Koranko
BE	Progressive	Mamvu, Nkonya, Somali
BEGIN	Inceptive	Lingala
BRING	Future	Nandi
COME	Future	Lotuko, Pare, Luguru, Lango, So, Kru lgs
	Potential	Doyayo
	Perfect	Teso
	Habitual	Ndebele
	Passive	Maasai
COME.FROM	Near Past	Jiddu, Teso, Sotho, Klao
COME.TO	Proximative	Tchien Krahn ['almost']
	Unaccomplished	Swahili
Copula + LOC	Progressive	Tyurama, Godié, Maninka, Egyptian Arabic, Lingala and many Bantu languages
DO/MAKE	Causative	Lendu, Moru
FAIL.TO	Negative	Somali
FALL	Passive	Tonga
FINISH	Completive	Engenni, Mambila
GET	Perfect	Twi
GIVE	Applicative	Efik, Kxoe
	Causative	Luo
GO	Progressive	Xhosa, Ewe
	Perfect	Doyayo, Ciyao
	Future	Bari, Sotho, Lele, Tonga, Kru languages
KEEP	Continuative	Waata Oromo
	Progressive	Standard Somali
	Present	Jiddu Somali
	Durative	Dabarro Somali, Mudung Somali
KNOW	Habitual	Moré
LEAVE	Completive	Kxoe, Nama
	Egressive	Lingala ['stop']
	Progressive	Kirma
LIE	Durative	Beja

LIVE/STAY	Progressive	Kisi, Chadian Arabic
	Durative	Lango
	Habitual	Benin Ewe, Nkore-Kiga
REMAIN	Durative	Kxoe
	Progressive	Kikongo
	Habitual	Ewe
	Probable Future	Oromo of Wellega (+NEG)
RETURN	Iterative	Sotho
SAY	Future	Beja
SIT	Progressive	Diola Fogny, Mamvu, Kxoe, Umbundu, Mbodomo
	Habitual	Kanakuru, Shona

Table 3: Common source-target pairs in African AVCs

Some sample forms reflecting these source > target combinations are offered below.

'come'

As is obvious from the above list, one particularly salient and common verb used as an auxiliary in African languages, more common even than it is in other areas of the world, where it is still fairly common, is the deictic motion verb 'come'. Typically this is grammaticalized to encode a future function. This is found in languages across many genetic units and areas. Thus one finds 'come' as a source for futures in such a diverse array of languages as Shatt Daju (110) or the Nilotic languages Lango (111) and Lotuko (112), plus Kru languages, not exemplified here.

(110) a. <u>Shatt Daju</u>

>*agönaŋ   a-wuŋ   a-si-e   iya*
> I   1.INDEF-AUX 1.DEF-eat-e   meat
> 'I shall eat meat' (Tucker and Bryan 1966: 240)

b. <u>Shatt Daju</u>

> *agönaŋ* *a-wuŋ*   *ka-si*
> I   1.INDEF-aux 1.DEF-eat
> 'I shall have eaten meat'   (Tucker and Bryan 1966: 240)

(111) <u>Lango</u>

> *dákô*   *bínô*   *nénô*
> woman   3:AUX:HAB   see:INF
> 'the woman will see' (Noonan 1992: 126)

(112) <u>Lotuko</u>

> *a-ttu*   *nɪ* *lɛtɛn*
> 1-FUT   I   go:INF
> 'I'll leave immediately'
> (Heine and Reh 1984: 132; Muratori 1938: 161ff.)

A future marker deriving from 'come' is also attested in a number of central African Bantu languages like G22 Pare (113), G35 Luguru (114) or J60/D61 Kinyarwanda (115); see 6 for more on the future in Bantu.

(113) G22 <u>Pare</u>   (114) G35 <u>Luguru</u>

> *ni-za-et-a*   *tu-tso-ɣul-a*
> 1-FUT-bring-FV   1PL-FUT-buy-FV
> 'I will bring (it)'   'we will buy'
> (Botne 1990: 191; Nurse 1979a, 1979b)

(115) a. <u>Kinyarwanda</u>   b. <u>Kinyarwanda</u>

> *a-za*   *gu-kora*   *a-za-kora*
> 1-FUT   INF-work   1-FUT-work
> 'he will work (later today)' 'he will work (after today)'
> (Botne 1990: 190; Hurel 1911)

'Come' as a source for the grammaticalization of future tense is also a characteristic feature of the Bongo-Bagirmi language Fer (Kara) of Central African Republic (116).

(116) <u>Fer [Kara]</u>

    ḿ ī̄   kì´   s̀   ń̈
    I AUX:1 INF:come with him
    'I will come with him' (Boyeldieu 1987: 73)

In the following sentences from the Kuliak language So[o] (Tepes), multiple uses of the verb 'come' in both lexicalized and grammaticalized functions are seen. The stem *ác* retains its lexical meaning 'come' in the first form in (117). In the second sentence it rather shows two different grammaticalized uses. One is as an auxiliary encoding future tense in an AUX V configuration. Its second function in the So form below is a common target for grammaticalization of an originally serialized use of 'come' to mark ventive action that is also found in a number of other African languages (e.g., Tama or Pero), realized in So as a suffix synchronically.

(117) <u>So</u>

    ác-ìsa   > *ác-ísa*   *gúg-ác*
    come-1   FUT-1   transfer-VENT
    'I come'   'I shall buy' (Heine and Reh 1984: 39)

West African languages also make use of 'come' as a future marker. It has become a future affix synchronically in the Kwa language Ewe, but remains a freestanding auxiliary in a similar function in Manding.

(118) <u>Ewe</u>

    ye-á-vá
    3-FUT-come
    'he will come' (Heine and Reh 1984: 38) *á* FUT < *vá* 'come'

(119) <u>Manding</u>

> *sísan án bɛ́nà kúma bàna   dɔ́wɛrɛ kàn*
> jetzt 1PL FUT reden Krankheit andere PP
> 'jetzt werden wir über eine Krankheit sprechen'
> (Tröbs 2009: 47; Dumestre 2003: 207) *bɛ́nà <–nà* 'come'

Constructions with 'come' may be grammaticalized into a wide range of other functions when looking across the broad spectrum of African language. One such function is the marker of prospective tense/aspect, i.e., 'be about to X'. Such a construction with doubled inflection involves the auxiliary 'come' in this function in Biu-Mandara Chadic Muyang of Cameroon.

(120) <u>Muyang</u>

> *á-r(ā) á-zòm ɮ̄ām*
> 3-AUX 3-eat thing
> 'he's about to eat something' (Smith 2010: 103)

A similar function in a LEX-headed structure is found in Khwe in an atypical (for Khwe) AUX V configuration, presumably deriving from V_1 of a nuclear serial structure (see 4.2 below).

(121) <u>Khwe</u>

> *n|ĩí ||gɛ̀ɛ-khòè-hɛ̀   yà ||'ó-à-tè*
> DEM female-person-3SG.F come die-I-PRS
> 'this woman is about to die'
> (Aikhenvald 2006: 8; Killian-Hatz 2006: 117)

As future represents a kind of quasi-modal-cum-tense category, perhaps it is not surprising then that individual African languages have also grammaticalized modal constructions that use the auxiliary 'come'. Thus a potential mood is created by an AVC that derives from 'come' in Doyayo of Cameroon (exemplified in 82 above). In the Òkó language of Nigeria, a type of deontic modal form is attested using the auxiliary verb 'come' in the following example:

(122) Òkó

  be-kè-ca   be-yo
  3PL-ASP-come   3PL-go
  'they should leave' (Akerejola 2008: 177)

Perfect and past forms are also potential targets for a grammaticalized AVC using the auxiliary verb 'come' in various African languages. Indeed, 'come' may yield perfect forms in languages closely related to ones where 'come' has been grammaticalized as a future. Thus in East Nilotic [A]Teso 'come' has yielded a perfect or past tense formation (51), repeated here as (123), while in its close sister language Lotuko it has a future function, see (112) above.

(122) [A]Teso

  *a-**bu**   ke-ner*
  1-**AUX.PST**   1SBJNCTV-say
  'I said'
  (Heine and Reh 1984: 104; Hilders and Lawrance 1956: 14)

Similarly, an AVC with the auxiliary verb 'come' has developed into a bound perfect suffix form in Bambara (124). Note that the cognate auxiliary became rather a marker of future in its sister language Manding (119):

(124) Bambara

  fúrakɛla   nà-na   só
  Heilkundiger   kommen-PFV Haus
  'Der Heilkundige kam nach Hause' (Tröbs 2009: 216)

Other functions of 'come' can be found in Table-3.

'go'/ 'leave'

The paired verb of 'come', viz. 'go' (also in the form of 'leave') has similarly been grammaticalized in a range of functions across various African languages. Like 'come',

one common function of AVCs involving 'go' is to create future formations. This may have a simple future meaning or an immediate or intentional future meaning (much like English 'I am going to stay'). In the role of a simple future, 'go' is found for example in Kara of the Bongo-Bagirmi family and in the Surmic language Murle of Sudan and Ethiopia.

(125) <u>Kara</u>

  ma'ba kɔ
  1-AUX cultivate
  'I will cultivate' (Santandrea 1970: 156)

(126) a. <u>Murle</u>   b. <u>Murle</u>

  kakɔ́: koŋ   *ɔkɔ́ oŋ*
  1:AUX 1:sleep   2:AUX sleep
  'I shall sleep'   'you shall sleep'
  (Tucker and Bryan 1966: 384)

The Ju language !Xun of the Angola/Namibia/Botswana border region shows a similar grammaticalization of a verb meaning 'go' into a future function.

(127) a. <u>!Xun</u>

  ú + *ā* go + relational > *ó-á* FUT
  (König and Heine 2001: 28)

 b. <u>!Xun</u>

  ha má n||an óá g|è
  CLS1 TOP later FUT come
  'he'll come later' (König and Heine 2001: 34)

A final example of a simple future function associated with the auxiliary 'go' can be found in the Kado languages Krongo and Katcha of Sudan, both within AUX-headed configurations.

(128) <u>Krongo</u>

    m-ákká   *k-áadìyà*
    3F-FUT.AUX INF:LOC-come
    'she will come' (Reh 1985: 188)

(129) <u>Katcha</u>

    n-ar-aa   *ṯ-ɔɛ*
    1/2-FUT-1   INF-drink
    'I shall drink' (Tucker and Bryan 1966: 309)

The immediate future functions of AVCs involving the verb 'go' can be found in a range of languages as well. Thus, the Maban language Masalit of Chad and Sudan reflects this immediate future function of 'go' in the following split/doubled AVC:

(130) <u>Masalit</u>

    g-oosiŋ   *g-ay-ɛ*
    2-know:BASE.II 2-go-PRS
    'you are going to know' (Edgar 1989: 23)

Gula Zara is another language of central Africa that show a very similar functional realization of AVCs with 'go' in an immediate or intentional future function, though in both of these languages the AVC is of the familiar AUX-headed type.

(131) <u>Gula Zura</u>

    mə́-nā´   *kʌ̄s*   *cá*
    1-AUX   INF:eat thing
    'I am going to eat'   'I will eat'
    (Nougayrol 1999: 129)

Future is perhaps the most common or frequent meaning but not the only function associated with the use of this verb as an auxiliary. Like 'come', 'go' may also be used in the function of perfect marker, as in the following sentence from Doyayo:

(132) <u>Doyayo</u>

    be¹   re³   be¹   tɔ⁴mɔ¹   gɔ¹   ya⁴
    1   go   1   devour-2 ANAPH Q
    'would I then eat you up?' (Wiering and Wiering 1994: 217)

Finally, using an auxiliary originally meaning 'leave', the Gur language Kirma has developed an AVC with a progressive function.

(133) <u>Kirma</u>

    mi   ta   mi   wo
    1   AUX 1   eat
    'I am eating' (Heine and Reh 1984: 117; Prost 1964: 56)

For other functions of 'go' see Table 3.

'be'

Another cross-linguistically common auxiliary verb that is certainly well-represented among the languages of Africa is the verb 'be'. Its most typical grammaticalized function is one in an AVC expressing progressive.[19] A split-inflected negative progressive formation with 'be' can be considered a family level feature of the Rashad Kordofanian genetic unit, attested in Rashad, Tagoi, and Tumale.

(134) <u>Rashad</u>

    ŋi fas   k-eyɛ   y-ɛn
    I meat NEG-eat 1-AUX
    'I am not eating meat'
    (Tucker and Bryan 1966: 297)

---

[19] 'Be' + a locative is the most typical path for progressives in Africa as elsewhere. Some of these 'be' forms here might well be better interpreted as 'be at' or 'be' + LOC formations which are presented separately in brief below.

(135) <u>Tagoi</u>

    yigɪn ŋifi   k-eyak   y-ɛn
    I   meat NEG-eat 1-AUX
    'I am not eating meat' (Tucker and Bryan 1966: 297)

(136) <u>Tumale</u>

    ŋgi   k-alma   y-en
    I   NEG-gather 1-AUX
    'I am not eating meat' (Tucker and Bryan 1966: 297)

A wide range of central and west African languages show progressive formations using the verb 'be'. Such languages include Muyang and the Sere Ubangi language Ndogo.

(137) <u>Muyang</u>

    tə̄-bù   tá-rā
    3PL-AUX 3PL-come
    'they are coming' (Smith 2010: 103)

(138) <u>Ndogo [ndz]</u>

    yí kú   zoo
    3 PROG eat:V.LNGTH
    'he is eating' (Santandrea 1961: 26)

Note that these each show a different inflectional pattern, despite showing similar functional semantics and source verbs: Muyang (137) has a doubled pattern, Ndogo (138) shows an AUX-headed structure, while Mamvu in (139) below, a language of the Mangbutu-Efe genetic unit of Democratic Republic of Congo, on the other hand reflects a LEX-headed formation.

(139) <u>Mamvu</u>

    òro´ ma`   <   **òro-ná ma*
    go:1 AUX   go-1 AUX
    'I am going'
     (Heine and Reh 1984: 126; Vorbichler 1971: 248-50)

Donno So Dogon has a similar progressive formation. Note that the negative shows variation between an AUX-headed formation like the corresponding positive form (140), or has variable split negative marking (141) similar to the forms in Rashad Kordofanian above. Nevertheless, regardless of where the negative marker is realized, the lexical verb appears in the dependent *–u* form in this Donno So formation:

(140) <u>Donno So Dogon</u>

    gɛndɛ-u   *wɔ-m*
    regarder-DEP   AUX-1
    'je suis là regardant'   (Prost 1969a: 78)

(141) a. <u>Donno So Dogon</u>   b. <u>Donno So Dogon</u>

    gɛndɛ-u   *wɔ-lɔ-m* ~   *gɛndɛ-lɛ-u*   *wɔ-m*
    regarder-DEP AUX-NEG-1   regarder-NEG-DEP   AUX-1
    'je ne suis pas regardant'   (Prost 1969a: 78)

Other West African languages show progressive formations that also derive from an auxililary verb 'be', e.g. the Gur language Tyurama.

(142) <u>Tyurama (Gur)</u>

    me   *na*   *me*   *wu*
    I   AUX   I   eat
    'I am eating'
    (Heine and Reh 1984: 117; Prost 1964: 103; 105)

Probably the next most common function of 'be' as an auxiliary verb, if that is what one should properly call such a formation, is as a dummy stem that serves as anchor for

expressing obligatorily encoded formally realized grammatical categories. This may be used to express past or present tense, subject, etc. in a range of different languages. Thus a 'dummy' use of 'be' may stand at the origin of the following construction in Sese Gumuz.

(143) <u>Sese Gumuz</u>

     amam   gàc'aŋ   ɓàgà   mara biid   biimɓaŋa
     they   before   people   many 3PL:AUX 3PL:always.dancing
     'in former times many people used to dance' (Uzar 1989: 378)

In Orig of the Rashad Kordofanian family and in Tira of Heiban Kordofanian, the verb 'be' seems to serve as a means for encoding tense in the case of Orig, or as an anchor for the noun class 'agreement' marker in Tira.

(144) a. <u>Orig</u>   b. <u>Orig</u>

     tùgə́n   k-àyá   ŋ-ɛn   *tùgə́n   k-àyá   írìn*
     he   NEG-drink   3-AUX.PRS   he   NEG-dance   AUX.PST
     'he does not drink'   'he did not drink'
     (Schadeberg and Elias 1979: 52)

Note that in Tira the AVC has been fused into a complex verb form, while the formation in Orig remains a free-standing bi-partite auxiliary construction.

(145) a. <u>Tira</u>   b. <u>Tira</u>

     iŋ   g-a-ŋa-nɔ́na   *aŋ   g-a-ŋi-nɔna*
     1.DEF CLSFR.SG-ASP-2OBJ-see:INDEF   2.DEF CLSFR.SG-ASP-1OBJ-see:INDEF
     'I see you'   'you see me'
     (Stevenson 2009: 35) [NB: INDEF > S-O-V]

Other 'dummy' uses of 'be' within larger structures to serve as anchors for obligatory inflectional material are found in Masalit, where tense is encoded on the auxiliary, but subject is doubly encoded in a split/doubled construction:

(146) a. <u>Masalit</u>   b. <u>Masalit</u>

    g-oos-o   *j-iy-ɛ*   *g-oos-gede*   *j-iy-ɛ*
    2-know-PRTCPL 2-be-PRS   2-know-NEG   2-be-PRS
    'you knew'   'you didn't know'
    (Edgar 1989: 29)

In Igboid Echie of Nigeria on the other hand, the auxiliary 'be' encodes all the obligatory grammatical elements in an AUX-headed configuration (with a phonologically 'dependent' marked lexical verb).

(147) <u>Echie</u>

    ɔ̀-dì-ì   *zà:a*   *ʋlɔ̀*
    3-AUX-NEG sweep:OVS   house
    's/he did not sweep the house'
    (Ndimele 2003: 51)

Other functions are attested with grammaticalized uses of 'be', such as future tense in the Yulu language of the Bongo-Bagirmi family. This has been fused together with the subject pronoun yielding what appears to be a tense-encoding pronoun synchronically in the language; for more on these important and characteristically African structures see sections 5 and 12 below).

(148) <u>Yulu</u>

    ma   *lɛ'ɛ*
    1:FUT INF:go
    'I shall go' (Santandrea 1970: 25)

Of course on occasion other functional semantics are yielded when a construction involving the (locational) verb 'be' is used when examining all African languages. Thus in the unclassified Shabo language, a perfect form of this auxiliary verb has developed a past tense function in complex AVCs.

(149) <u>Shabo</u>

    ɗebe-k   am-kus
    3.PRF>PST   come-PRS.PRF
    'he has come' (Teferra 1991: 382)

In the function of a perfect, 'be' has also been grammaticalized in the Cushitic language Alaaba. However, this element has been further incorporated into the verbal complex as a verbal suffix synchronically, yielding a complex verb form of the following type:

(150) <u>Alaaba</u>

    ʔán(i)   t'iz-zhóom(i)
    1SG:NOM become.sick-1SG:PRF
    'I am sick' (Schneider-Blum 2009: 65) /*-yóom-*/ <be>

'be.LOC' > progressive > present

As mentioned above, a locational component combined with 'be' typically lies at the heart of progressive formations in African languages. Indeed, some of the examples above might upon further investigation to properly belong to this subtype of 'be.LOC'-derived auxiliary formations. In the southern African language ǂHoan, either a member of the Ju family or an unclassified/isolate language, the progressive marker derives from the locational copula 'be (in)':

(151) ǂHoan

    ma 'a   tsi tcon-!ka'e ci   kyeama-qa
    I   PROG see people   POSS dog-PL
    'I see the people's dogs' (Collins 1998: 19)

In Kresh, subject and auxiliary 'be.at' have fused into a single element, which functions as a progressive formation in the language, when combined with a dependent marked lexical verb in an AUX-headed structure.

(152) <u>Kresh</u>

    ǎ   *lõwó*   *nî*
    AUX.3   [DER:]walk   the
    'he is/was walking' (Brown 1991: 338)

As is frequently the case with progressive formations, this construction appears to be developing a general present meaning as well in Kresh.

(153) <u>Kresh</u>

    ǎ   *(y)õshó* *ŋbãyã*   *(nî)*
    AUX.3   DER:eat   maize   the
    'they are eating maize' or 'they eat maize' (Brown 1991: 338)

Ewe is another language which derives a progressive from a locational 'be.at' verb in combination with an explicit locative marker. Thus, in the following sentence, the auxiliary –*le* 'be.at' combines with the dependent 'progressive' marker *ḿ* that derives from a locative marker in *me. This exemplifies what Heine and Reh (1984) and Heine (1993) call the nominal periphrasis channel of the grammaticalization of auxiliary verb constructions.

(154) <u>Ewe</u>

    me-le   *nú*   *ɖu-ḿ*
    1-AUX.INCOMPL   thing eat-PROG
    'I am eating' (Heine and Reh 1984: 38)

The Chadic language Buduma shows another structure that clearly reflects this locative formation with the verbal noun form of the lexical verb accompanied by the preposition 'at':

(155) <u>Buduma</u>

    a-kol   *a jai-ni*
    3.PRS-be at seat-VN
    'he is/was sitting' (Pawlak 2001: 376; Lukas 1939: 55)

The progressive formation in Maninka has an explicit locative marking on the lexical verb formally realized as a postposition.

(156) <u>Maninka</u>

> *a yé nà lá*
> he AUX come at
> 'he is coming'   (Heine and Reh 1984: 123)

Lastly, the Bantu language Umbundu likewise reflects the use of 'be' grammaticalized in a construction expressing progressive semantics, not using a locational element, but rather an assocative preposition 'with' instead; see (10) above for an example.

The positional verbs 'sit' and 'stand'

The positional verbs 'sit' and 'stand' (as well as 'lie' not explicitly examined here) are also not infrequently grammaticalized within AVCs in African languages (see also Newman (ed.) 2002). An auxiliary verb construction with 'sit' has developed into a progressive formation in Gula Méré. Note that this has been grammaticalized within two different inflectional patterns in Gula Méré, either in a doubled inflectional pattern (157), or in an AUX-headed one (158):

(157) <u>Gula Méré</u>   (158) <u>Gula Méré</u>

> *mɔ́-ndɔ́ m-úsā ɲɔ̀*   *mɔ́-ndɔ́ kūsá ɲɔ̀*
> 1-AUX 1-eat thing   1-AUX INF:eat thing
> 'I am eating'   'I am eating'
> (Nougayrol 1999: 137)

Shatt Daju also uses a construction involving the verb 'sit' to encode progressive functional semantics. Similar to the first Gula Méré form, this is embedded within a doubled inflectional pattern in Shatt Daju.

(159) Shatt Daju

>   *agönaŋ a-nj-u   a-si-e   iya*
>   I   1.INDEF-AUX-*u* 1.INDEF-eat-*e* meat
>   'I am eating meat'
>   (Tucker and Bryan 1966: 240)

The Bantu language Umbundu has a formation using 'sit' in the function of a progressive in an AUX-headed configuration using 'with' before the dependent-marked lexical verb.

(160) Umbundu

>   *wa-kala   l'   oku-papala*
>   3-AUX   with   INF-play
>   'he was playing'
>   (Heine and Reh 1984: 125; Valente 1964: 281)

Progressive is not the only function found with grammaticalized uses of 'sit' in African languages. Thus the irrealis marker in Goemai of Nigeria derives from 'sit':

(161) Goemai

>   *t'ong   ji   kat   a   mmoe*
>   IRR   SG.M.LOG find   FOC   what
>   'what would he find?'
>   (Hellwig 2006: 105)

Similar to 'sit', 'stand' not infrequently has been grammaticalized in constructions that encode progressive semantics. Such a formation underlies the progressive in the following variant sentences from Ngambay-Moundou. Note that this AVC is variably either doubly inflected or in an AUX-headed configuration.

(162) a. <u>Ngambay-Moundou</u>   b. <u>Ngambay-Moundou</u>

      m-ár   *m-úsā* *dā*   *m-ár*   *mbā* *k-ùsà* *dā*
      1-AUX   1-eat   meat   1-AUX   for   NOM-eat meat
      'I am eating meat'
      (Heine and Reh 1984: 126; Vandame 1963: 94-96)

According to Killian-Hatz (2008), the present tense suffix *-tè* (163) in Khwe derives from tɛ 'stand, stay'. As mentioned above, it is common for present tense markers to derive from progressive formations cross-linguistically (Bybee et al. 1994), African languages being no exception in this regard. The use of this element in Khwe likewise speaks to its possible original function as a progressive marker (164).

(163) <u>Modern Khwe</u>

      Kàcúpì *Rúndù* *kà*   *||'án-a-kò*   *tɛ́-ɛ̀-||òè*
      K   R   LOC   live-DEP.II-CV   be-DEP.I-HAB
      'Kacupi lives in Rundu'
      (Killian-Hatz 2008: 50)

(164) <u>Modern Khwe</u>

      xà-má   *thám̀* *à* *ígàrá-ná*   *tɛ́-ɛ̀-tè*
      DEM-3M   letter O write-DEP.II stay-DEP.I-PRS
      'he is writing a letter'
      (Killian-Hatz 2008: 305)

'stay'/'remain'

The use of the verb meaning 'stay' or 'remain' in the function of a continuous or durative or progressive is relatively widespread among African languages. Such a formation with 'remain' is at the heart of the continuous element in Kxoe (Khwe).

(165) <u>Kxoe</u>

    ‖*oàbà-ná-éi-yé-tè*
    cover-JNCT-AUX-JNCT-TNS
    'she covers it well'
    (Heine and Reh 1984: 137; Köhler 1981: 503ff.)

The auxiliary verb 'stay' has been grammaticalized within constructions to mark continuous or progressive action in Kunama as well. Note that this appears in a synchronic bi-partite AUX-headed AVC in Kunama with one class of verbs (represented by 'go', (166)), but appears in a doubly inflected form with others (represented by 'tell', (167)).

(166) a. <u>Kunama</u>   b. <u>Kunama</u>

    ga-n   *go-na-no*   *ga-n*   *go-na-ki*
    go-DEP   AUX-1-PRS   go-DEP   AUX-1-AOR
    'I am going'   'I was going'
    (Tucker and Bryan 1966: 344)

(167) a. <u>Kunama</u>   b. <u>Kunama</u>

    na-sasa go-na-no   *na-sasa go-na-ki*
    1-tell   AUX-1-PRS   1-tell   AUX-1-AOR
    'I am telling'   'I was telling'
    (Tucker and Bryan 1966: 344)

Sandawe shows a functionally similar construction to mark progressive that derives from a verb meaning 'stay'.

(168) a. <u>Sandawe</u>

    tʰâ-à   *íé-~´*
    run-3MSG.RLS.PGN AUX-CNNCTV
    'he is running'
    (Eaton 2003: ex. 6)

b. <u>Sandawe</u>

> *tʰâ-sà*   *íé-~´*
> run-3FSG.RLS.PGN   AUX-CNNCTV
> 'she is running'
> (Eaton 2003: ex. 13)

Kolokuma Ijo presents a last example of the grammaticalized use of a verb meaning (at least in part) 'stay' to function as a progressive marker.

(169) <u>Kolokuma Ijo</u>

> *a bó-a*   *timi-mi*
> she come-NEG   AUX.CONT-PST
> 'she was not coming'
> (Williamson 1965: 74-75)

Note that progressive/continuous semantics are not the only developments possible from a construction that involves a verb meaning 'stay' etymologically. Thus the habitual suffix in Standard Ewe derives from such a verb.

(170) <u>Standard Ewe</u>

> *me-yí-na*
> 1-go-HAB
> 'I habitually go'
> (Heine and Reh 1984: 119)

'do'/'make'

The verb meaning 'do' or 'make' is also not uncommonly used as an auxiliary in African languages. The functional semantics it encodes varies significantly across the different languages. Thus in ‖Ani of the Khoe family, it appears to have been grammaticalized as a prospective tense/aspect marker:

(171) ‖Ani

> *tá-khòè*   *‖ga-khòè*   *‖'ó-|xὲ*   *hìn-à-tà*
> old-person   FEM-person   die-INT   PROSP-II-PST
> 'the old woman was about to die'
> (Heine 1999: 22)

In Temein on the other hand, its function is more like a type of intentional future:

(172) Temein

> *ŋa-m-a*   *ŋa-lam*   *ntεṯ*   *isaatɪn*
> 1-AUX-FIN   1-eat.DEP   meat   tomorrow
> 'I am going to eat meat tomorrow'
> (Tucker and Bryan 1966: 259)

In Otoro belonging to the Heiban Kordofanian genetic unit, an auxiliary meaning 'do' is used in a complex AVC with a negative auxiliary to mark unaccomplished but expected action:

(173) Otoro

> *li-ji*   *li-mirε*   *l-atε*
> CLSFR.PL-people   CLSFR.PL-AUX.DEP.ASP   CLSFR.PL-NEG.AUX

> *li-ma-rithε*   *nɔ*
> CLSFR.PL-PRF-dance.DEP.ASP   CONEG

> 'people have not yet danced'   (Stevenson 2009: 258)

In languages of the Sahara region (see section 13), light verb formations are relatively common.[20] Unsurprisingly, some languages of this region use 'do' as the inflectable light verb stem. One such language is the Maban language Aiki (aka Runga):

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[20] See Schultze-Berndt (2006) for a different view on the nature of what are here called 'light' verbs.

(174) <u>Aiki [Runga]</u>

    àndèi   tὲnέ   cákám   mbə́-t-ə́rŋ-ὲ
    goat   he   to.sell   2-3-AUX-ASSRTV
    'he sold you his goat' (Nougayrol 1989: 57)

'want'

Another relatively common verb grammaticalized within AVCs in African languages is 'want'. This verb typically expresses one of three categories in African languages: prospective tense/aspect, future tense, or necessitative mood. In a prospective tense/aspect function, 'want' is used in such languages as ‖Ani.

(175) a. <u>‖Ani</u>

    tá-khòè   ‖ga-khòè   ‖'ó-|xὲ   ka-ra-tà
    old-person   FEM-person die-INT   PROSP-II-PST
    'the old woman was about to die' (Heine 1999: 21)

   b. <u>‖Ani</u>

    á-m̀   yì-má |q'áí-|xὲ   ka-tè
    DEM-M:SG   tree-M:SG fall-INT   PROSP-PRS
    'that tree is about to fall' (Heine 1999: 21)

In Lango a functionally similar form is attested (176). Note that the verb 'want' may also appear in a complement-taking structure that maintains its lexical meaning in Lango as well (177).

(176) <u>Lango</u>   cf. (177) <u>Lango</u>

    mítô   cὲm   *ámìttò   cὲm*
    3:AUX:HAB eat:INF   1:want:PROG eat:INF
    'he's about to eat'   'I want to eat'
    (Noonan 1992: 139)   (Noonan 1992: 139)

The necessitative modal function of an AVC using 'want' may be seen in the following Masalit formation.[21]

(178) Masalit

    g-oosiŋ-to   *n-ind-ɛ*
    2-know.base.II-PRTCPL 2-want-PRS
    'you need to know' (Edgar 1989: 29)

Of course the most typical grammaticalized use of 'want' cross-linguistically is as an auxiliary to form future tenses. This is what is the source of the future prefix in S. Nilotic Nandi of Kenya.

(179) a. Nandi   b. Nandi   c. Nandi

    mâ-a:-kas   *mâ-ke-kas*   *mâ-a:-kás-é*
    AUX-1-hear   AUX-1PL-hear   AUX-1-listen-ASP
    'I will hear it'   'we will hear it'   'I will be listening'
    (Creider and Tapsubei Creider 1989: 112)

'be lacking'/'be absent'

Various African languages make use of a negative auxiliary. One relatively straightforward source for such a functional element is a verb meaning 'be lacking' or 'be absent'. This verb has been grammaticalized as a negative auxiliary in Katcha of the Kado family and Otoro of the Heiban Kordofanian family.

(180) a. Katcha   b. Katcha   c. Katcha

    tal-aa   *n-asala*   *tal-ɔŋɔ* *k-asili*   *tal-ɔŋɔ* *k-ag-asili*
    NEG-1   1/2-look   NEG-1PL PL-dance   NEG-1PL PL-ASP-dance
    'I do not look'   'we do not dance'   'we did not dance'
    (Tucker and Bryan 1966: 310)

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[21] The extension of 'want' to 'need' here is so minimal that one may argue that this is in fact not really an example of an AVC, but an idiomatic use of this verb in its lexical function.

(181) Otoro

    ŋi gw-atɛ   *gwu-dhirɔ*   *nɔ*
    1 CLSFR.SG-NEG.AUX CLSFR.SG-sleep CONEG
    'I do/did not sleep (Stevenson 2009: 239)

'say'

The last verb I address in brief here is the characteristically African use of a[n auxiliary or light] verb whose etymological meaning is 'say'. In a large part of northern and eastern Africa, 'say' has taken on a central role in the verbal grammar (e.g., Cyffer 1991, Cohen et al. 2002). In some it serves as a type of light verb base to make inflectable verbs. In part this was motivated historically by the preponderance of ideophones in the languages, and the straighforward use of a light verb meaning 'say' with such forms. However, many ideophones have become lexicalized to express basic verb stems that one might not expect ideophones to express like 'go' or 'see' in some of these languages. In Saharan languages like Kanuri, most verbs inflect by an inflected form of 'say' fused into a larger verbal complex.

(182) a. Kanuri   b. Kanuri

    /lè-n-k-ìn/ → *lɛ́ngîn*   */lè-s-n-ìn/* → *lèjîn*
    go-say-1-IMPF   go-3-say-IMPF
    'I am going/will go/go'   'she is going/will go/goes'
    (Hutchison 1981: 90)

(183) a. Kanuri   b. Kanuri   c. Kanuri

    lè-n-gənà   *lè-n-gí*   *lè-n-gê-nyí*
    go-say-1:PRF   go-say-1:VB.EMPH.COMPL go-say-1:PRF-NEG
    'I have gone'   'I have GONE'   'I have not gone'
    (Hutchison 1981: 120)

Its sister languages like Zaghawa show similar formations; see Cyffer (1991) for more details on the history of 'say' as a light verb in Saharan verbal diachrony.

(184) Zaghawa

> *nɔ́:-gê-n-í*
> see-3PL-AUX-TA
> 'they see' (Cyffer 1991: 81)

Other languages show use of 'say' as a common inflectable verb stem, e.g. Nera of Eritrea.

(185) Nera

> *kal-nu   wa:l-n-ay-t-o*
> eat-GER AUX-GER-AUX-PST-3
> 'he was eating' (Thompson 1976a: 489)

Cushitic languages like Beja and Bilin show formations that are quite similar to the Saharan family forms structurally. In Bilin, like Kanuri and Zaghawa, the forms have been univerbated into large complexes.

(186) a. Bilin   b. Bilin

> *wŭḥ-jǎkwn*   *wŭḥ-jĭrǎkw*
> shout-say:1:PRS   shout-say:2:PRS
> 'I shout'   'you shout'
> (Böhm 1983: 42)

Dongolese Nubian is like Bilin and the Saharan languages, with a large fused complex, the last portion of which etymologically is an inflected form of 'say'.

(187) Dongolese Nubian

> *íngu fadl-ɛ̃́ran*
> these stay-say:3PL.IMPF
> 'these are staying'
> (Cohen et al. 2002: 241; Armbruster 1960: 246)

Tama actually reflects both patterns, one where 'say' maintains its phonological wordhood (Type-A) and one where it is fused into a larger complex. In Tama the first type seems to be used with synchronically identifiable ideophones like *wut* 'fall' (cf. English 'thud') while the second type seems to be used with inflectable stems, and possibly developed on analogy with the ideophonic formation. The result is that the former structure reflects an AUX-headed pattern (188), while the latter one represents a fused doubled pattern (189).

(188) <u>Tama</u>

    ànáá-tá   wút   nú-ŋó
    down-LOC   fall   1SG:say-PRF
    'I fell down to the ground' (Dimmendaal 2009a: 314)

(189) <u>Tama</u>

    nì-tíín-[↓]nú-ŋó
    1SG-dream-1SG:say-PRF
    'I dreamed' (Dimmendaal 2009a: 314)

Note that the use of 'say' as an auxiliary is not restricted to northern and eastern African languages, but may also be found in southern African Bantu languages like Shona, here with a doubled subject pattern.

(190) <u>Shona</u>

    wa-ti   wa-mbo-enda   ku-Ingirandi   here
    2SG:PRF-AUX   2SG.DEP.ANT-at.first-go   LOC-England   Q
    'have you ever (yet) been to England
    (Güldemann 2002: 263; Dale 1972: 77)

For more on use of *ti* as an auxiliary in such Bantu languages as Tumbuka, and the types of structures this auxiliary is embedded within typically in Bantu languages, see 6 below.

4.2 Constructional sources for AVCs in African languages. As alluded to throughout the preceding sections, two of the basic sources for AVCs in African languages (and cross-linguistically for that matter) are i) verb complement structures, in which case one speaks of a diachronic process of clausal union as these were originally bi-clausal formations, with two events, two propositions, etc., and ii) serial verb constructions (SVC), in which (for some such SVCs), the component sequential elements are considered parts of a semantic event whole, and thus not individuated propositionally. Givón (2009) has called these the only two constructional sources for the range of complex predicate types that I have been here calling AVCs. However, at least one other constructional source type exists for AVCs. This reflects what has been called the clause chaining construction (Anderson 2006). The difference among all three of these constructional source pools for AVCs lies in the nature of the relationship between the two original verbal elements that yield the grammaticalized construction.

In embedded or complement structures, there is a syntactic head-dependency relation between the two clauses in a complex structure, i.e. one verb/clause is subordinate and often non-finite or semi-finite, or at least in some way marked to indicate that it is somehow relatively lower in (scalar) finiteness or in a dependency (or c-command) relationship with the original complement-taking head (now auxiliary) verb.

In serialized structures, notions such as co-headedness or co-subordination or pseudo-complementation have been offered to hold for the relationship between V_1 and V_2 in (different sub-types of) serialized structures, if this latter concept can even be adequately defined cross-linguistically; see Bisang (1995), Bril (2004), Senft (2004), Crowley (2002), Aikhenvald (1999) Aikhenvald and Dixon (2006) for various somewhat recent perspectives. The elements have equal syntactic status even if prosodically or inflectionally one of the verbs in a serialized structure, often referred to as V_1 or V_2, has more prominence or 'head' status.

In clause-chained formations, the verbs specialized as lexical verbs in AVCs (or indeed auxiliaries in some languages) are marked as coordinate. Based on these two 'features', finiteness and coordinatedness, we can distinguish the three major constructional input sources for the complex predicate structures here called AVCs.

(191)   Source Construction Type   Features of $*V_{1/2}>$ AV
    Serial Verb Construction [SVC]   +finite, (-coordinate)
    Verb Complement Construction [VCC]   -finite, (-coordinate)
    Clause-Chaining Construction [CCC]   +coordinate, (±finite)

4.2.1 Serialized Structures. I assume in the following presentation, as indeed much current research on verb serialization does, that there are several broadly definable patterns of the [epi]phenomenon known as verb serialization that for which, at least for the sake of descriptive convenience and consistency, I use here the following terms primarily derived from the Role and Reference Grammar based literature (e.g. Van Valin and LaPolla (2000)) on SVCs: *nuclear serialization, core serialization, same subject serialization, switch subject serialization*, and *ambient serialization*. Although I do not assume the formalism or even certain of the basic tenets of that particular framework of syntactic analysis, it turns out that these labels show significant correlation to the various inflectional types of auxiliary verb constructions that result from SVCs.

   Anderson (2006: 303-304) defines various serialized verb construction categories as follows:

(192)

nuclear serialization:	Difficult to distinguish from verb compounding.
	Tight bond between V_1 and V_2.
	Aspectual categories belong to this layer
	(Foley and Olson 1985).
core serialization:	Elements may intervene between V_1 and V_2.
	Argument categories belong to core layer of clause.

(193)

same subject:	When V_1 and V_2 share the same subject in a serialized formation
switch subject:	Usually involves an intransitive and transitive verb, with subject of one being the object of the other (e.g., hit die > kill), but refers to any serialized formation in which there is no subject co-reference.
ambient serialization:	When no argument is shared between V_1 and V_2.
	Expresses 'generalized states' (Crowley 2002).
	May have 'clausal' subject marking.

Note that it is not always *a priori* clear what constitutes a serial verb construction (cf. Lord 1993, Aikhenvald 1999, Aikhenvald 2006) in a given language or much less across all African languages viewed comparatively, just as auxiliary verb constructions cannot be identified as discrete entities *per se*. Indeed, given the processes by which one verb-verb sequence slides into another from a functional perspective, a certain amount of ambiguity is possible if not expected with respect to any given formation or sets of formations in a particular language or group of language (this is also true for example with AVCs arising from embedded or complement structures, as with certain newly emergent AVCs in English). Thus, one researcher may consider a particular verb-verb combination an SVC and another may call a similar or identical form an AVC based upon arbitrarily assigned subjective criteria. However, as a verb in a serial verb constuction specializes and assumes the role of encoding functional categories (e.g. encoding TAM categories), some ambiguity will be present, with both constructional interpretations possible in certain individual instances in association with a given formation.[22] To be sure, this is to be expected.[23] As Kuteva (2001: 138) states:

> each link of the grammaticalization chain represents a stage of the auxiliation process, where the preceding and the succeeding functions, and their respective linguistic expressions, coexist side by side. Thus there is an intermediate stage of overlapping marked by semantic ambiguity, formal ambiguity, or both.

Note that Lord (1993) recognizes both verbal and nominal paths of development for SVCs in African languages. One example of the latter (nominal) type of development may be seen in the following Akan formation. The fully adpositional status of the

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[22] For example English *I am going to work* is ambiguous between literal motion + complement and intentional future AVC readings, while *I am going to stay here* really only has the functional interpretation.

[23] De Lancey already in (1991:15) explicitly recognized the potential deictic serialization origin ('go and X', 'come and X') for certain kinds of AVCs in Tibeto-Burman languages.

> "In any language which regularly produces verb chains of the sort that we are claiming form the breeding ground for serialization constructions, there will regularly be formed chains of motion verbs for which no sequenced-event interpretation is pragmatically or even semantically available ...it is the semantically unitary nature of sequences such as these which motivates the development of a uni-clausal syntactic construction."

element is betrayed by it still retaining some vestigial or residual traits of its (quasi-finite) verbal status in a serialized formation, such as the ability to take negation, albeit non-independently motivated negation, i.e., it is doubly-marked (pleonastic) negation.

(194) Akan

    *Kofi n-ye   adwuma **m-ma**   Amma*
    Kofi NEG-do   work   **NEG-for**$_{<give>}$ Amma
    'Kofi does not work for Amma'
    (Seuren 1990: 18; Schachter 1974: 266)

Ewe has similarly grammaticalized the use of an original serial structure as an adpositional benefactive marker. These elements appear to stand somewhere between full verbs and full adpositions in Akan, but may be considered more adpositional in Ewe, at least in the following example.

(195) Ewe

    *me-wò dò   vévíé **ná**   dodókpò lá*
    1-do   work hard **for**$_{<give>}$ exam   DEF
    'I worked hard for the exam' (Blake 1994)

À propos to the serialized origin of different inflectional patterns in African AVCs, the following generalizations can be made: doubled subject forms, as in Steswana (196) and Ngambay-Moundou (197), or split/doubled inflectional patterns with object-marking restricted to lexical verbs but with doubled subject marking as in Doyayo (198), commonly arise from core serialized structures with intransitive and transitive V$_2$ components, respectively.

(196) a. Setswana   b. Setswana

    re-nê   re-tsamaya   *re-nê   re-setse re-tsamaya*
    1PL-AUX 1PL-go.away   1PL-AUX 1PL-AUX 1PL-go.away
    'we are already going away'   'we were already going away'
    (Setshedi 1974: 14)

(197) a. <u>Ngambay-Moundou</u>   b. <u>Ngambay-Moundou</u>

       m-îsī m-úsā dā   *m-ár   m-úsā   dā̄*

       1-AUX 1-eat meat   1-AUX   1-eat   meat

       'I am eating meat'   'I am eating meat'

       (Heine and Reh 1984: 126; Vandame 1963: 94-96)

That the auxiliary formation is derivable from the serialized form is clear in the Doyayo examples below (where the source deictic serial verb for the potential is obvious), and it is also relatively straightforward to see how a split/doubled inflectional pattern with this structure might arise from such a core serialized structure where V_2 is transitive and object encoding. Thus, the sequence of the last two verbs in (198) in a serial structure is identical to the auxiliated formation in (199).

(198) <u>Doyayo</u>

       hi^1 *za*^{1} **hi**^{1} *zaa*^{13} **hi**^{1} *lɔ-**mɔ***

       3PL POT **3PL** come **3PL** bite-**2**

       'they might come bite you' (Wiering and Wiering 1994: 221)

(199) <u>Doyayo</u>

       be^1 *re*^{3} **be**^{1} *tɔ*^{4}-***mɔ***^{1} *gɔ*   *ya*^{4}

       1   AUX   **1**   devour-**2** ANAPH   Q

       'would I then eat you up'

       (Wiering and Wiering 1994: 217)

    The relatively uncommon pattern (at least in Africa) with subject marked only on the auxiliary (< *V_1) but with the lexical verb encoding object (< V_2), derives generally from a (usually nuclear) serialized formation. An example of this comes from Eleme, where split inflectional AVCs bear obvious morphological resemblance to serialized structures in the language.

(200) <u>Eleme</u>

     ɛ̀bai rɛ-do-do-rõ   nɛ́-e   ǹsã
     1PL   **1PL**-REDPL-be.PRS-APPL give-**3SG** book
     'we are still giving him books' (Bond 2006)

(201) <u>Eleme</u>

     àbà ba-bere   tʃú   ǹsã   no   nɛ́-e
     3PL   **3PL.DEF**-PRF take book DEM give-**3SG**
     'they have picked up the book and given it to him' (Bond 2006)

4.2.2 Complement Structures. A number of different clause combining strategies can yield auxiliary verb constructions among African languages. The development of auxiliary verb constructions from subordinated verb complement sequences–in which the reanalysis of a subordinate/nominalized lexical complement and an original finite verb which has undergone functional specialization to an auxiliary, results in a unified, mono-clausal structure–is one that has been frequently discussed in the theoretical literature on diachronic syntax in general (e.g. Harris and Campbell (1995), Harris and Ramat (1987), etc.)

    The most common source of AUX-headed AVCs is an embedded, subordinate complement structure of the lexical verb. These often nominalized or adverbialized forms of verbs become co-specialized with auxiliary verbs that derive from complement taking predicates, both intransitive and transitive ones.[24] Numerous examples of this have been offered above, with clause-union derivations approximately similar to that offered for the Swahili perfect in (220) below.

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[24] Claudi (1988: 63) discusses how AVCs emerge (except those that arise in a serialized srtucture) when a nominalized verb is put into a complement position. If the former *matrix (now > auxiliary) verb is transitive, then the verbal complement is put into the position of an object complement. If it is intransitive, then it is realized as an adverbial phrase complement (or genitive complement of nominalized verb). However, this does not exactly work out, as nominalized infinitive complements can be found even with intransitive original matrix verbs, as in the Lotuko and Lango forms cited, which derive from common directional and positional verbs that frequently enter into grammaticalization processes as auxiliaries.

While doubled inflectional patterns in AVCs not infrequently derive from core serialized structures, they may also derive from embedded or complement structures as well. This is the sub-type of doubled pattern where there is some kind morphological marker of subordination in the lexical verb (or, if the reader prefers, on the original dependent/subordinate clause).

Take for example, the development of doubled inflectional forms in Teso/Ateso, an Eastern Nilotic language. Ateso has verb-initial structure and therefore, as a syntactically 'well-behaved' Nilotic language, it has Aux (S) V order that came from an original V (S) Complement structure. Subjects of embedded complements of most original verbal complement governing matrix verbs in Teso/Ateso (the soon-to-be auxiliary) appear in a *k*-initial dependent/subject form. Thus, doubled subject inflection with a dependent-marked lexical verb arises from asyndetic subordination and semi-finite inflectional structures.

(202) a. <u>Teso/Ateso</u>   b. <u>Teso/Ateso</u>

      a-*bu* **ka**-*duk*   **a**-*bu* **ko**-*duk*
      1-PST **1SBJNCTV**-build   **3**-PST **2/3SBJNCTV**-build
      'I built'   'he built'
      (Heine and Reh 1984: 185; Hilders and Lawrance 1956: 29-30)

The formal similarity of such AVCs with synchronic embedded structures with 'modal subordination' in Ateso is clear:

(203) a. Teso/Ateso[25]

       a-*losi*   *eoŋ*   *oduka*   ***ka***-*gwel*   *amunyu*
       1-go   I   store   **1SBJNCTV**-buy salt
       'I am going to the shop to buy salt'
       (Hilders and Lawrance 1956: 28)

    b. Teso/Ateso

       a-*koto*   *nes*   ***ko***-*bu*
       1-want   him   **3SBJNCTV**-come
       'I want him to come' (Hilders and Lawrance 1956: 30)

Split/doubled patterns of two different types may arise from such embedded verbal complement constructions [VCC] in African languages. The first type consists of an original intransitive matrix verb and a transitive complement verb where the matrix verb yields the auxiliary verb and the complement verb the lexical verb in the resulting AVC. Both take the argument inflection they subcategorize for, yielding subject marking alone on the auxiliary but both subject-marking and object-marking on the lexical verb.

(204) Mbay

       m-*ā*   *m*-*él*-***á***   *tàa*   *lò*-*í*
       1-AUX   **1**-tell-**3**   words of-**2**
       'I'll tell him what you said' (Keegan 1997: 116)

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[25] These can also take infinitive complement, which would if grammaticalized, yield AUX-headed AVCs in Ateso as well. Thus these two forms are also grammatical variants in Ateso:

(f) Ateso   Ateso

  a-*losi eoŋ*   *oduka* ***a***-*gwel*   *amunyu*   *a*-*koto*   *nes*   *a*-*bu**nere***
  1-go I   store **INF**-buy salt   **1**-want   him   **INF**-come:**INF**
  'I am going to the shop to buy salt'   *'I want him to come'*
  (Hilders and Lawrance 1956: 28, 30)

(205) Bantu M54 <u>Lamba</u>

> ***n-ā-li*   *n-ā-mu*-*wona*   *lēlo***
> 1-PST-AUX   1-PST-3-see:FV   today
> 'I have seen him today' (Botne 1986: 307; Doke 1938: 305)

The other type of split/doubled pattern that may arise from an embedded complement structure is one in which negative appears only on the lexical verb. This kind of structure arises when the scope of negation is originally on the complement, not the matrix verb, even if semantically speaking this scope difference is difficult or impossible to tease apart in the AVC itself. Such a structure probably underlies the following Ejagham formation. Note that the original complement status, albeit in a semi-finite structure, is encoded by the use of the embedded or non-initial subject marking, here formally indexed, as discussed above, by tonal alternation of the subject marker itself.

(206) <u>Ejagham</u> [Ekoid Bantu]

> ***à-nyə́nè*   *á-kà-chòt***
> 3SG.PFV-AUX   3SG.DEP-NEG-speak
> 'she has not yet talked' (Watters 2000: 196)

Finally, while the auxiliary verb in the LEX-headed pattern is unchanging generally, it may have frozen morphology reflecting its input source. One not uncommon phenomenon of such a type is the use of a expletive/dummy subject inflection on the auxiliary reflecting its former status as the verb of an original clause with a dummy/expletive subject and a clausal complement, with the now unchanging auxiliary retaining this original frozen (3rd person) subject inflection. Such a situation is found for example in the following Acholi formation.

(207) *EXPL.SUBJ-VB + Complement (SUBJ-VB) > AUX + SUBJ-LV (LEX-headed pattern)

(208) <u>Acholi</u>

> *in*   ***o**myero*   ***i**-cam mot*
> you   [3:]AUX   2-eat slowly
> 'you should eat slowly'
> (Heine 1993: 41) [*omyero < *o-myero* 3-be.suitable/fit.PST]

4.2.3 Coordinate source structures.   Doubled AVC formations may arise from asyndetic coordination structures as well.[26] Setshedi (1974) recognizes two functional types of verb-verb collocations in Bantu Setswana, which are identical formally. The first type the author calls a *compounded predicate* but would here be called a doubled inflectional AVC, with doubled subject marking (209a). The second verb is the clear semantic head of the expression, with the first verb serving to ground the event type coded by the second verb in a broader communicative discourse space, i.e. it serves as a functional specifier or operator, modifying the predication of an event of arriving. In (209b) on the other hand, the two verbal elements remain semantically distinct but co-terminous or simultaneous events, neither of which predicates *per se* of the other, but rather both of which serve as semantic co-heads of a complex event, akin in semantic inter-relatedness of the event sub-parts found in   serialized structures. This Setshedi (1974) calls a *series of complete predicates*, and I would call asyndetic coordination.

(209) a. <u>Setswana</u>   b. <u>Setswana</u>

       ba-*tloga*   **bá**-*goroga*   **ba**-*tsamaya* **bá**-*bua*
       3PL-AUX   **3PL**_{<DEP>} arrive:FV   **3PL**-walk   **3PL**_{<DEP>} talk:FV
       'they will soon arrive'   'they walk and talk'
       (Setshedi 1974: 16)

These are semantically somewhat different than canonical serial structures as they don't involve either temporally sequenced and/or logically connected events or a decomposition of a complex event type into a series of interdependent event component types (e.g., *kill < hit + die* or *bring < take + come*), but rather two logically independent predicates, just one in this context that happen to be unified into a single utterance or reported sequence of events (or simultaneous ones in this case). Importantly however, the two constructions are basically indistinguishable in form, as one verb precedes the other in linear syntax, and the second verb must apparently appear with a 'dependent' subject form, regardless of the semantics (function+event or event+event) of the resulting structure.

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[26] How and if these differ form core serialized structures and/or series chained (semi-finite) predicates either in a theoretical or language-specific manner remains a subject for future research.

Finally, although quite uncommon in African languages, same subject or clause-chaining constructions [CCC] may also give rise to AUX-headed structures in such African languages as Twi or Dizi (Maji).

(210) <u>Twi</u>

    w-a-nyã   ***a**-bà*
    he-PRF-AUX **SEQ**-come
    'he has come now' (Lord 1993: 219; Christaller 1875: 335)

(211) <u>Dizi (Maji)</u>

    yaàbà *sʌ-**te** sis-**te***   *de-go*
    man   see-**SS** hear-**SS**   PRS.AUX-3[M]
    'the man sees and hears' (Allan 1976b: 391)

Other formations with a CCC origin in non-African languages include one variant of the self-benefactive (or 'subject version') construction in Tofa (Anderson 2004), an endangered language of south-central Siberia and in various Yuman languages of the American Southwest like Mojave.

(212) <u>Tofa</u> [Turkic; Siberia]

    dilɣi oluk   *bar-ɯp* *bræœ yʃpyl*   *tùt-**kaʃ** al-ɣan*
    Fox right.away   go-CV   one   hazel.grouse catch-**SS** AUX-PST
    'right away Fox went and caught himself one hazel grouse'
    (Rassadin 1994: 198)

(213) <u>Mojave</u> [Yuman; USA]

    hatcoq *ʔ-kaʔa:-**k***   *ʔ-aʔwi:-m*
    dog   1-kick-**SS**   1-AUX-RLS
    'I kicked the dog'
    (Langdon 1978; Langacker 1998: 41; Mithun 1999: 581)

Note that although most common in OV/V Aux languages, the CCC strategy is found in VO/Aux V languages as well (Twi). A summary of the types of developments discussed above may be found in Table 4:

Nuclear SVC > Split	Eleme
Core SVC > Split/Doubled	Doyayo
Core SVC > Doubled	Tswana, Ngambay-Moundou (Ejagham?)
VCC > AUX-headed	Anywa, Umbundu
VCC > Doubled	Ateso, (Ejagham?)
CCC > AUX-headed	Twi, Dizi
CCC > Doubled	Tswana

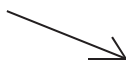**Table 4: Source > target construction sets in African AVC development**

   A schematic of the source-target relations between AVCs and other complex predicate types is offered in Figure 1.

Bi-clausal

Verb + Complement Structures   *Serial Verb Constructions*

Auxiliary Verb Constructions

Clause Chaining Constructions

Mono-Clausal

Figure 1: Verbal Origins of Auxiliary Verb Constructions

5 Prosodo-phonological integration and complex verbs deriving from AVCs

In this section I discuss the right edge of the grammaticalization path of AVCs, namely the point where the components of the formerly bipartite AVC are univerbated or fused through prosodo-phonological integration (and often erosion) into complex verb forms in developments of the types shown in (214) and (215).[27]

(214) From Aux V structure… > [auxiliary verb]$_w$ [lexical verb]$_w$ > [affix-verb]$_w$

(215) From V Aux Structure … > [lexical verb]$_w$ [auxiliary verb]$_w$ > [verb-affix]$_w$

In 5.1, I offer some comments on how the constructional features of AVCs can be reflected in the structure of complex verb forms. In 5.2, I mention a characteristically African development of subject-auxiliary fusing. Later, in 6.8, I offer some data showing that different stages on the grammaticalization path reflecting different stages in the prosodo-phonological integration of the elements in the AVC > complex verb shift can be seen when looking at data in related Bantu languages or in variants of one and the same Bantu language.

5.1 Complex verb forms from AVCs in African languages. As is well-known, one of the most common sources crosslinguistically of tense, aspect, and mood morphology is an auxiliary verb construction (see Givón 1971, 1975, Haas 1977 for discussions pre-dating most literature on grammaticalization). The constructional morphosyntax of the earlier stages of a language can sometimes be recovered by examination of the attested complex verb forms. Note that the AVC that gave rise to a given complex verb form in a language may have represented any of the five macro-patterns of inflection mentioned above. In

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[27] A precise delineation of what exactly constitutes a phonological vs. a morphological (verb) word is far from a closed issue in African languages in general, and even the core concepts are disputed or differently analysed and interpreted in different academic traditions. Nowhere is this more problematic or relevant than in the analysis of various Bantu, Bantoid, and other non-Bantu languages languages of West Africa. Often the anglophone literature will analyze strings as component affixes within single words, while francophone literature considers these to be strings of phonological words. As Nurse (2008: 169) puts it "Francophone countries in West Africa have a strong francographic convention to write as separate words what would be written as one word in the anglographic tradition." A similar observation was made by Creissels (2005: 45) with respect to determing the bound nature of object and subject markers in various African languages.

other words, one finds fused forms from former AUX-headed or LEX-headed AVCs, from doubled structures and indeed from split and split/doubled patterns as well.

Of course being statistically the most common AVC pattern, the AUX-headed pattern is the source of complex inflected verb forms in languages from across the African continent. Such languages include virtually every eastern, central, and southern African Bantu language (see below), or Cushitic languages like Beja and individual Somali varieties, including standard Somali.

(216) Bedauye (Beja)   (217) Standard Somali   (218) Jiddu Somali

    tam-ání < Pa-nì   *keen-ay-a(a)*   *jeel-aas-ta*
    eat-1.AUX   bring-AUX-IMPF:1   beat-AUX-2PL
    'I eat'   'I bring'   'you (pl) are beating'
    (Hudson 1976b)   (Heine and Reh 1984: 124)

Complement structures underlie complex verb forms derived from AVCs of this 'AUX-headed' type. This may be typified by the following well-known Swahili derivation from Heine and Reh (1984):

(219) a. pre-Swahili   b. Standard Swahili

    ***mtoto   a-meele   ku**-ja   >   mtoto   a-**me**-kuja*
    CL.I.child   3-finish:PRF INF-come:FV   child   3-PRF-INF:come:FV
    'the child has come'   'the child has come'
    (Heine and Reh 1984: 102)

(220)

mtoto a-meele ku-ja
(Heine and Reh 1984: 102)

Further, an AUX-headed structure with an infinitive marked dependent form of the lexical verb that has been fused into a complex verb form of this sort lies at the heart of synthetic verb forms in a wide range of Bantu languages. The original auxiliary, sometimes altered and/or fused with the infinitive prefix, appears in the so-called TA prefix position (Nurse 2008) or position class −2 (two to the left of the root position) of the verbal complex.[28] Various end-stages of this can be seen across the various Southern Bantu languages.

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[28] Bantu verb structure recognizes a number of different templatic positions, the details of which has generated its own body of Bantu-specialist and theoretically oriented literature, (e.g., Ashton 1944, Grégoire 1979, Baker 1985, Hyman 1994, 2003, 2007, Alsina 1999, Good 2005, Nurse and Philippson 2006, Maho 2007, 2008, McPherson and Paster 2009). Thus Meeussen (1967) recognizes the following structure of the Bantu verbal template with 9-11 slots:

(g) pre/initial-initial-post/initial-formative-limitative-{infix-radical-suffix.extension}-pre/final-final[.vowel]-post/final

while Nurse (2008: 40) is a recent consolidation that identifies 9 slots in the template, a root slot, up to five prefix slots and three suffixal ones.

(h) pre/SM-SM-NEG$_2$-TA-OM-√+EXT-FV-post/FV
-5 −4 −3 −2 −1 0 +1 +2 +3

Auxiliaries are clearly a highly important part of Bantu verbal structure both synchronically and diachronically, with the position class TA or −2 being a particularly common place for grammaticalized and fused former auxiliaries or AVCs to end up in (the next most common place being the pre-SM or −5 postion class), Nurse (2008) however pays

little attention to these formations in this otherwise excellent study of the tense/aspect systems of Bantu. His understanding of the term auxiliary verb is clearly non-standard when he speaks of 'patently ungrammaticalized auxiliaries' (2008: 92), given that auxiliaries are by definition grammaticalized entities.

AVCs have been a manifestly important part of Bantu grammar for millennia, and it is likely that certain specific formations might be recoverable for the proto-language, e.g. Nurse (2008: 250) even suggests that the past progressive in Bantu was probably formed by a 'compound construction' (= AVC). To be sure, synchronic bipartite AVCs are found in probably all Bantu languages, some of considerable antiquity in the family, and, as just mentioned, most TA forms derive from such structures. According to Nurse (2008: 170-171), certain languages and areal zones within Bantu show a great propensity for univerbated former AVCs at the TA position, e.g. Zones C, H, R (except R30), E50, M50, M60, D42, E42, E43, E60, G20, K10, and M54 (Nurse 2008: 60), while synchronically bipartite AVCs or compound constructions are common in D60, E10, E20, E30 {Great Lakes}; G30, G60 (central and southern Tanzania); R30, S30, S40 (southern Africa), Ewondo, Cewa and Sena and in the restructured contact varieties or *lingue franche* Swahili and Kituba. A particularly extreme example of stacking of morphemes representing former auxiliaries at the TA position in the verbal template can be seen in Nande (D42) form *tu-né-mu-ndi-syá-tá-sya-ya-ba-king-ul-ir-an-is-i-á-ky-ô* 'we will make it possible one more time for them to open it for each other (Nurse 2008: 175).

There is also an entire sub-field of studies devoted to the phonological or prosodic properties of the Bantu verb stem, not just its morphosyntactic and morphotactic features, e.g. Kisseberth (1984), Hyman (1989), Mutaka (1994), Odden (1996) or Myers (1998) ; see also Nurse (2008). Thus, one speaks of the root plus the derivational voice extensions [√+EXT] as the *derivational stem* (and this constitutes the domain of vowel height harmony), of the sequence [√+EXT-FV] as the *inflectional stem* (and this represents the domain of nasal harmony, reduplication, V-coalescence), while the sequence of [OM-√+EXT-FV] is considered to be the *macro-stem* or *super-stem* (and it is here that tonal phenomena are relevant). Everything to the left of the OM is considered the inflectional string by the phonological tradition and this together with the post-FV position to the right of the FV constitute the morphological, if not phonological, verb word.

(221) <u>Zulu</u>   (222) <u>Sepedi (N. Sotho)</u>

    *ngi-**zoo-ku**-thanda*   *o-**tlo**-reka*
    1-FUT-INF-love:FV   3-FUT:INF-buy:FV
    'I shall love' < *-za uku-*   'he will buy'   < *-tla (g)o-*
    (Batibo 2005: 4)   (Batibo 2005: 4)

(223) <u>Sesotho (S. Sotho)</u>   (224) <u>Venda</u>

    *ke-**tlilo**-reka*   *ndi-**doo**-vhona*
    1-FUT:PRF:INF-buy:FV   1-FUT:INF-see:FV
    'I shall have bought'   'I shall see'
    (Batibo 2005: 4) < *-tl-ile (g)o-*   (Batibo 2005: 4) < *-da (k)u-*

Languages with fused forms deriving from the doubled inflectional pattern include Omotic Hamer and Chadic Pero. In Hamer both the original lexical verb and original auxiliary verb were marked by the descriptive aspect marker, all subsequently fused into a single form synchronically.

(225) <u>Hamer</u>

    ena   kum-i-d-i
    people   eat-DESCR-AUX-DESCR
    'the people have eaten'
    (Lydall 1976: 422)

The ventive form in West Chadic Pero probably originated from an orientational/directional AVC deriving itself from an original deictic serialized formation (< 'come X'). Note also that the subject is doubly marked with intransitive futures (at least first and second person subjects are) in a circumfixal like SUBJ.PFX-X-SUBJ.SFX combination, with a recapitulative or 'intransitive copy pronoun' (see 7 below for more). With transitive verbs, the suffixal marker encodes rather the grammatical primary object in Pero (i.e. SUBJ.PFX-X-OBJ.SFX).

(226) <u>Pero</u>

    nì-tà-mè-tù-ée-nò
    1-FUT-return-VENT-AUGM-1
    'I will return' (Frajzyngier 1989: 118)

(227) a. <u>Pero</u>

      tà-píl-tù-ée-nò
      FUT-buy-VENT-AUGM-1
      's/he will buy for me' (Frajzyngier 1989: 111)
      [tábílléenò]

    b. <u>Pero</u>

      cì-tà-wát-tù-ée-nò
      2F-FUT-come-VENT-AUGM-1
      'you should bring for me' (Frajzyngier 1989: 111)
      [cèRàwáttéenò]

    c. <u>Pero</u>

      nì-mún-(í)nà-ée-cù
      1-give.COMPL.VENT-PREPRO-3PL
      'I gave them' (Frajzyngier 1989: 112)
      [nìmúnnéjù]

Split inflectional constructions are rare in African languages and complex verb forms resulting from them are correspondingly not well attested in this macro-areal group of languages. An example of a split fused structure however can be found in Chadic Gidar of the Nigeria/Cameroon border region. In the fused future formation, subject was found on the original auxiliary verb (now the future tense-marker), while object was encoded on

the original lexical verb component.[29] Structurally similar forms to Gidar can be found in Austronesian Mono and Tibeto-Burman Kinnauri.

(228) Gidar

> *wá-kə̀-rg-á*
> FUT-2-hit-OBJ
> 'you (sg/pl) will hit him/her/it' (Frajzyngier 2008: 157)

(229) Mono [Solomon Islands]   (230) Kinnauri [India]

> **ha**-*na-nuhu*-**i**   *khya*-**ci**-*du*-**k**
> **1**-FUT-dive-**3OBJ**   see-**2**-AUX-**1**
> 'I will dive for it'   'I see you'
> (Ross 1982: 14)   (Sharma 1988: 140)

Fused split/doubled formations are also not particularly common among the world's languages, African languages being no exception in this regard. A fused split/doubled formation does underlie the following complex verb form in the nearly extinct Kemantney language of Ethiopia, where subject is doubly marked, but other categories (e.g. tense/aspect) are marked only on the original auxiliary.

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[29] Allen (1993: 39) analyses fused structures of this sort in Ewe but Nurse (2007a) on the other hand asserts that there are no synthetic forms in Ewe (the only affix is the verbal habitual), just cliticized forms, so Allen has *wò-la-vó-é* but Nurse (2007a) would *wò=la=vó=é* for 'you will be afraid (of it)'. It really makes little difference per se as to what kind of morphophonology this reflects, as the distinction between these interpretations is morphotactic, not functional. Note also in this regard the caveat mentioned above about the different theoretical/analytic filters that operate to conform data to various preconceived notions of word types and the nature of the degrees of phonological integration or bondedness that are found in complex grammatical structures (e.g. the different word structure analyses of Bantu and other languages in the francographic and anglographic traditions).

(231) a. <u>Kemantney</u> (Qemant)   b. <u>Kemantney</u> (Qemant)

ïntï   was-**y-am-y-äkʷ**   ïntändew   was-**y-ïn**-wan-**y-äkʷ-ïn**
you   hear-**2**-AUX-**2**-IMPF   you.PL   hear-**2-PL**-AUX-**2**-IMPF-**PL**
'you have heard'   'you (PL.) have heard'
(Leyew 2003: 193)   (Leyew 2003: 193)

Typologically similar formations to that in Kemantney are found in a range of a Eurasian languages such as the extinct Yeniseic language Yugh formerly spoken in northern central Siberia, the Dravidian language Pengo of India, the Kartvelian language Georgian from (former Soviet) Georgia and the isolate language Burushaski of Pakistan.

(232) <u>Yugh</u>   (233) <u>Pengo</u>   (234) <u>Burushaski</u>

t-ku-g-**di**-χɨp   huɽ-**t-aŋ**-n-**aŋ**   a-tú-**ku**-man-**um-a**
1-2-AUX-**1**-sell   see-**PST-1**-AUX-**1**   NEG-d-**2**-be.born-**PST-2**
'I sell you'   'I have seen'   'you weren't born'
(Werner 1997: 138)   (Steever 1988: 79)   (Berger 1998: 91)
[Yeniseic; Siberia]   [Dravidian; India]   [Isolate; Pakistan]

(235) a. <u>Georgian</u> [Kartvelian; Georgia]   b. <u>Georgian</u>

mo-**v**-k'lu-**l'-var**   **v-u**-k-**i-var**
PV-1-kill-PRTCPL-1:AUX   1-3-praise-PRF-1:AUX
'I have killed'   'he praised me'
(Aronson 1982: 301)   (Aronson 1982: 272)

Fused or univerbated complex verb forms derived from AVCs of the split/doubled inflectional type can be found in other individual African languages as well. For example, the Kunama form below likely arose from a source construction with tense/aspect- and subject-marked on the auxiliary and a subject-marked lexical verb, in an original V AUX configuration. Thus, complex verb forms in languages often reflect rather straightforwardly their inflectional (and syntactic) pattern historically. This observation may help yield insight into the possible origins of such structures when they are

encountered in languages that lack any or adequate comparative materials, or that represent isolate branches of a large phylum like Kunama within Nilo-Saharan.[30]

(236) Kunama

    a'ba olle **na**-*ŋ[a]*-**na**-*ina*-**ke**
    I   there   **1**-eat-**1**-AUX-**AOR**
    'I used to eat there' (Bender 1996: 45)

(237) Kunama: < *Subj-LV-Subj-AV-T   < *Subj-LV Subj-AV-T....

Lastly, note that the LEX-headed pattern may also appear in fused or univerbated complex verb structures in various African languages, e.g. in S. Nilotic (Kalenjin) Nandi of Kenya (238).

(238) a. Nandi   b. Nandi [S. Nilotic]

      mâ-*a:*-*kas*   **mâ**-*a:*-*kás*-*é*
      FUT-1-hear   FUT-1-hear-ASP
      'I will hear it'   'I will be listening'
      (Creider 1989: 111-112)

(239) Nandi: *AV SUBJ-LV-[ASP] > TA-SUBJ-LV[-ASP]

5.2 More on fused (univerbated) subject/TAM forms. It is clear that auxiliary verb constructions tend to undergo a diachronic process of prosodic/phonological integration commonly called univerbation or fusing. Some of these formations have been alluded to throughout sections 1, 2, 3 and 5.1. However, one pattern that occurs in (at least) three separate genetic/areal clusters among African languages, and one that is often not recognized as reflecting auxiliary structures *per se*, is a phenomenon called fused 'subject plus TAM/polarity auxiliary' forms by Anderson (2006). In these languages, there are what appear to be tense-marked pronouns, but which historically represent the fusing (or univerbation) of subject pronouns or agreement morphology with highly eroded auxiliary

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[30] For more on fused structures from the split and split/doubled patterns, see Anderson (2006), Chapter 6.

verbs. Such constructions are characteristic of various languages of the Macro-Sudan Belt, represented here by Mende (240),[31] or unrelated to this, Cushitic Daasanech (241).

(240) a. <u>Mende</u>   b. <u>Mende</u>

        nga *tewe*   **ngii**   *tewe*
        1:PM cut   1:NEG.AOR   cut
        'I cut'   'I do/did not cut'
        (Heine and Reh 1984: 208; Migeod 1908: 84)

(241) a. <u>Dasenech (Daasanech)</u>

        yáá   *má-laalan*
        AUX:1   NEG-sing:PRS
        'I do not sing' (Sasse 1976: 200)

Note that in the Chadic languages, these fused constructions may occur embedded within AUX-headed structures with Ø-marked lexical verb as in Hausa (242), in split/doubled AVCs as in Karekare (243), here with the pattern of doubled aspect marking and single subject marking that is highly marked for African languages, or indeed with dependent-marked lexical verbs as in Ngizim (244) in a classic AUX-headed structure.

(242) <u>Hausa</u>

        zán   *zóó*
        AUX:1   come
        'I will come' (Heine 1993: 77)

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[31] See also section 12, where the formation is extensively exemplified.

(243) a. <u>Karekare</u>   b. <u>Karekare</u>

  nà *tú-kòo*   ***nàa*** *tə́-nà*
  1:PRF eat-PRF   **1:IMPF** eat-IMPF
  no gloss offered (Schuh 1976: 5)

(244) a. <u>Ngizim</u>   b. <u>Ngizim</u>   c. <u>Ngizim</u>

  ná *ta-w* ***nàa*** *tá-w*   ***kwàa*** *ta-w*
  1:PRF eat-DEP **1:IMPF** eat-DEP **2PL:IMPF** eat-DEP
  no gloss offered (Schuh 1976: 5) [+√straight tone]

According to Creissels (2005: 50-1; 55-9), forms showing what he calls the 'tense-person complex' are relatively common in West African languages, including Wolof.

 Once such fused subject-plus-TAM-auxiliary forms exist in a language, they may, like any auxiliary structure or other functional element, be subjected to further prosodic/phonological integration with the lexical verbs with which they occur. Such formations have been called fused/fused constructions (Anderson 2006), and reflect various different original inflectional patterns. Thus, for example, a structure of this type from a fused/fused structure of the split(/doubled) inflectional type may be found in the Molo language of the Eastern Jebel family.

(245) a. <u>Molo</u>   b. <u>Molo</u>

  ə̀ŋ *tìi:-bé*   *ìn* *tə́-bə́i*
  I PRS:1:go:1   you PRS:2:go:2/3
  'I go'   'you go'
  (Bender 1989: 166)

  c. <u>Molo</u>   d. <u>Molo</u>

  ə̀y *tə̀-sá*   *uu* *tə̀-só*
  we PRS:PL-go:1PL you(PL) PRS:PL-go:2PL
  'we go'   'you (PL) go'
  (Bender 1989: 166)

Fused subject/auxiliary forms may also arise from AVCs of the doubled subject type. Here the auxiliary has fused with a subject marker itself, subsequently fused into one long complex verb form with the lexical verb. Such a development occured in the rise of the present progressive in the Surmic language Koegu, where the subject-marked lexical verb occurs in an infinitive form (246), and in the general present where the subject marked lexical verb rather occurs in an unmarked or Ø-marked form, or one in which the dependent morphology has eroded completely**.**

(246) a. <u>Koegu</u>   b. <u>Koegu</u>

      a-*am*-**iyaa**   **a**-*am*-*en*-**iyaa**
      1-eat-TA:1   1-eat-INF-TA:1
      'I eat'   'I'm eating'
      (Hieda 1998: 365)

Cushitic languages make extensive use of this (see section 11) as do Hadza, Sandawe and other members of the Tanzanian Rift Valley (see section 10) linguistic area; see these sections for examples and further discussion.

    As already exemplified above, there is considerable variation within not only genetic units but individual languages as well with respect to the inflectional pattern seen across different AVCs. Of course, one pattern may be dominant in a given language or genetic unit, and one might look to the differing origins of the constructions or the argument or functional properties of the grammaticalized elements concerned as first possible explanations for this type of variation. In the following sections I offer only representative samples of the range of auxiliary constructions found in four important African genetic units: (Narrow) Bantu (6), Chadic (7), Khoe (8), and Nilotic (9).

6 (Narrow) Bantu

One African family of languages where auxiliary verb constructions play and have played a major role in the verbal systems is (Narrow) Bantu (e.g. Nsuka Nkutsi 1986, Heine 1991, 1994). AVCs in Bantu languages generally appear with Aux V order, though a small number of languages show V Aux order (e.g., Tsotso or Mbugwe, see below). Indeed, most of the tense prefixes which occupy the so-called TA slot in the verb template in Bantu languages have arisen from a fusing of an original AVC reflecting an Aux V order.

Most Bantu languages show AUX-headed and/or split/doubled constructions, with other formations occurring only relatively infrequently. However, given the size and diversity of the Bantu languages, it is hardly surprising that some instantiation of every pattern and fused version thereof may be found in a given individual Bantu language when considering all of the Bantu languages collectively. For certain AVCs, the inflectional pattern differs with differing lexical verbs. For example, not infrequently in Bantu one finds a situation in which intransitive verbs appear to be in a doubled inflectional pattern while transitive verbs show split/doubled structure, with object encoded only on the lexical verb component with the same auxiliary, with the exponence of the object logically lacking with intransitive verbs.[32] Thus, these might be properly considered doubled/split-doubled formations. LEX-headed AVCs and forms showing fused subject/TAM constructions are rare in Bantu, although so-called Wambo Bantu languages of southwestern Africa may have these structures.

6.1 AUX-headed AVCs in Bantu. AUX-headed formations in Bantu languages come in many formal subtypes. Some appear with an overtly dependent-marked lexical verb and some with a zero-marked form. As discussed above, Bantu verb structure is synthetic and complex, but in many Bantu languages the final position in the verbal complex (the lexical verb in an AVC) is a position that licenses a construction specific 'final vowel', the unmarked or default instantiation of which in Bantu languages is –*a* outside of the northwesternmost area, where Ø may also be found. Lexical verbs appearing in a bare stem form in an AUX-headed structure occur only in Bantu languages of that region, and not in all such languages. They do occur for example in A15 Akoose with the lexical verb appearing with the *a-* infinitive prefix and in a Ø form of the final vowel in the following emergent AVC deriving from a verb + complement structure:

(247) SUBJ-'AV'   INF-LV-Ø

(248) A15 <u>Akoose</u>

> *bebaád*   *bé-booted*   *mɛdyɛ́*   *a-kab*
> II.women   II-begin   VI.food   INF-share
> 'the women began to share the food' (Hedinger 2008: 162)

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[32] This is of course also precisely the situation which triggers intransitive copy pronouns in Chadic languages; see 7 below.

AUX-headed AVCs with the lexical verb appearing with only the final vowel –*a* are found in a range of Bantu languages such Duala (A20), Kikongo (H10) or Herero (R30).

(249) {SUBJ-TA-}-AV LV-*a*

(250) a. A20 <u>Duala</u>   b. A20 <u>Duala</u>

    a   *mà-yă*   *nanga*   *waˈseˈ*   *bá*   *m-ɛndɛ́*   *janda*
    he   PRS-FUT.AUX lie:FV   ground   they   PRS-FUT.AUX buy:FV
    'he will lie down right now'   'they will buy'
    (Heine and Reh 1984: 132; Ittmann 1949: 93-95)

(251) H10 <u>Kikongo</u>

    y-a-kala   *kanga*[33]
    1-PST-PROG bind:FV
    'I was binding' (Heine and Reh 1984: 88)

(252) R30 <u>Herero</u>

    ha-tu-ja   *muna*
    NEG-1PL-AUX   see:FV
    'we have not yet seen' (Meinhof 1948: 114)

In the following form from A43 Basaa (253), the construction is said to reflect a Ø-infinitive form (Nurse 2008: 29), but with the final vowel -*a*:

(253) A43 <u>Basaa</u>

    a-bí-mal ##   *(Ø)-tíl-a*
    3-PST₂-finish   (INF)-write-FV
    'he has finished writing, he has written' (Nurse 2008: 29)

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[33] Also *y-a-ka kanga* with erosion of the progressive auxiliary.

A lexical verb in an AUX-headed AVC with both the familiar Bantu infinitive prefix *ku-* (in various local realizations) and the verb stem in the –*a* final vowel form is a common and frequent component of the grammar of many Bantu languages. Such a diverse array of Bantu languages as N44 Sena and P10 Ndendeule can be included in this group.

(254) {SUBJ-TA}-AV   INF-LV:*a/-a*

(255) N44 <u>Sena</u>

    ndi-sa-funa   ku-dya
    1-TA-AUX   INF-eat:FV
    'I will eat, near/less certain' (Nurse 2008: 92)

(256) a. P10 <u>Ndendeule</u>   b. P10 <u>Ndendeule</u>

    bi-tenda   ku-memena   *mwe   n'-tenda ku-pëta*
    2:PRS-AUX   INF-eat:FV   you:PL   2PL-AUX INF-pass:FV
    'do people really eat them?'   'you still/do go through'
    (Güldemann 2003: 340)

Formally identical AUX-headed constructions may be found in such Bantu languages as JE31c Bukusu, E42 [E10] EkeGusii, and D61 [J60] Kinyarwanda, where the familiar Bantu infinitive prefix *ku-* has local realizations such as *xû:-* in JE31c Bukusu, *gu-* in D61 [J60] Kinyarwanda and *ko-* in E42 [E10] EkeGusii.

(257) JE31c <u>Bukusu</u>

    ba-li   xû:-bón-a
    3PL-AUX INF-see-FV
    'they see' (Aksenova 1997: 17)

(258) D61/J60 <u>Kinyarwanda</u>

    abagabo   ba-ari   gu-som-a
    men   3PL-AUX INF-read-ASP
    'the men would have read' (Kimenyi 1980: 9)

(259) E42 [E10] [Eke]Gusii

    ko-a-is-ire   ko-many-a ékeGusii
    2-TNS-AUX-ASP INF-know-FV *ékeGusii*
    'you are going to learn EkeGusii language' (Aksenova 1997: 17)

Note that the common Bantu negative element *–(i)si-* appears to remain a free-standing auxiliary synchronically in older sources on G10 Kaguru, such as in Torrend (1891). This negative auxiliary is found in an AUX-headed AVC of this formal sub-type with the lexical verb in the *ku-* prefix and *–a* final vowel form:

(260) a. G10 Kaguru   b. G10 Kaguru

    ni-si   ku-langa   *ch-isi   ku-langa*
    1-NEG   INF-see:FV   1PL-NEG INF-see:FV
    'I don't see'   'we don't see'
    (Torrend 1891: 233)

The infinitive-marked lexical verb may appear with a prefix that encodes an adpositional relation, e.g., accompaniment 'with' or location 'in' or 'at', with an auxiliary verb whose original meaning was 'be (located)' (see 4.1 above). This is the form found for example in N14 Mpoto:

(261) {SUBJ-TA}-AV   LOC-INF-LV:*a/-a*

(262) a. N14 Mpoto   b. N14 Mpoto

    ti-yi-li   mu-ku-la   *ti-ka-yi-li   mu-ku-la*
    1PL-TA-AUX LOC-INF-eat:FV   1PL-PST$_2$-TA-AUX   LOC-INF-eat:FV
    'we're eating'   'we were eating {P$_2$}'

c. N14 <u>Mpoto</u>   d. N14 <u>Mpoto</u>

t-a-yi-li   *mu-ku-la*   *t-á-ya-yi*   *mu-ku-la*
1PL-PST$_3$-TA-AUX   LOC-INF-eat:FV   1PL-FUT-TA-AUX   LOC-INF-eat:FV
'we were eating {P$_3$}'   'we will be eating'
(Nurse 2008: 141)

In B51 Duma on the other hand, the *mû-* locative prefix is found attached directly to the verb stem (in the *–a* final vowel form). This may be the original formation or, perhaps more likely, it may be a secondary formation, eroded from a form like the Mpoto one above.

(263) {SUBJ-(TA)}-AVLOC-LV:*a/-a*

(264) B51 <u>Duma</u>

a-lí   *mû-kéna*
3-AUX   LOC-dance:FV
'she is dancing' (Nurse 2008: 141)

As mentioned above, while most AVCs in Bantu languages are AUX V, in JE32b Tsotso the reverse order V AUX is found in at least one AUX-headed construction with the lexical verb in the infinitive *ku-* form and with the final vowel in *–a*. This is thus identical to the forms in (254)-(260) only with the relative order of auxiliary and lexical verb reversed.

(265) INF-LV:*a/-a* {SUBJ-(TA)}-AV

(266) JE32b <u>Tsotso</u>

kù-wé:lá   *ng!íná*
INF-be.sick:FV I.am
'I am sick' (Hardemann 1996: 165)

The auxiliary verbs 'be and 'sit' in combination together with an adposition *l'* meaning 'with' in a clitic, quasi-prefix form create in [R10] Umbundu, the AUX-headed

progressive formations (268a) and past progressive (268b), respectively; see (10) and (160) for more examples.

(267) {SUBJ-(TA)}-AV   PREP   INF-LV:*a/-a*

(268) a. R10 <u>Umbundu</u>   b. R10 <u>Umbundu</u>

      tu-li   l'   oku-lya   *wa-kala l'   oku-papala*
      1PL-AUX with INF-eat:FV   3-AUX   with INF-play:FV
      'we are eating'   'he was playing'
      (Heine and Reh 1984: 125; Valente 1964: 281)

6.2 Doubled inflection in Bantu AVCs. Doubled inflection in AVCs is also widely attested among Bantu languages. Most commonly one finds doubled subject formations, with the lexical verb appearing in various construction-determined and language-specific forms. As with AUX-headed formations, the lexical verb appears in a zero-marked form only in northwestern Bantu, such as A15 Akoose:

(269) SUBJ-AV SUBJ-LV-Ø

(270) A15 <u>Akoose</u>

      bé-táŋgɛ́nɛ́   bé-sébé bé-hɛd   melâm
      II-must.EXT.PRF   II-first II-look.for VI.whiskey
      'they must first look for whiskey' (Hedinger 2008: 152)

AVCs with the lexical verb in a subject-marked form with the final vowel –*a* in a doubled subject configuration are attested across the Bantu family, including such diverse languages as A62 Yambasa (repeating (41) above), K40 Siluyana, M14 Lungu, P22 Mwera, S21 Venda, and [S30] Setswana.

(271) {SUBJ-(TA)}-AV   SUBJ-LV:*a/-a*

(272) A62 <u>Yambasa</u>

    a-lé   a-núun-ə
    3-AUX   3-watch-FV
    'he is watching' (Nurse 2008: 141)

(273) K40 <u>Siluyana</u>

    ba-nu   ba-li   ba-tenda
    PL-person 3PL-AUX 3PL-work:FV
    'the people are working' (Givón 1971: 148)

(274) M14 <u>Lungu</u>

    tw-áá-shá   tw-áá-lim-a
    1PL-PST-AUX   1PL-HORT-farm-FV
    'we'll soon be farming' (Nurse 2008: 163)

(275) P22 <u>Mwera</u>

    tw-aːci tu-Ø-um-a
    1PL-AUX 1PL-[TA-]buy-FV
    'we were about to buy' (Nurse 2008: 195)

(276) S21 <u>Venda</u>

    ndo-vha   ndo-vhona
    1SG.PRF-AUX   1SG.PRF-see:FV
    'I had seen' (Heine 1993: 38)

(277) S30 <u>Setswana</u>

    ke-nê ke-rêka
    1-AUX   1-buy:FV
    'I was buying' (Cole 1955: 235)

Doubled formations also occur in such Bantu languages as L30 Hemba, M14 Lungu, N21 Tumbuka, N44 Sena, F21 Sukuma and S21Venda with dependent marked lexical verbs in certain AVCs. The future construction seen in the Bantu language N21 Tumbuka reflects a structure with doubled subject marking and the modal dependent (or subjunctive) final vowel –*e*.

(278) SUBJ-AV　　SUBJ-LV-FV$_{[SBJNCTV]}$

(279) N21 Tumbuka

> *ti-ti*　　　　　*ti-lut-**e***
> 1PL-AUX.FUT　　1PL-go-**FV$_{SBJNCTV}$**
> 'we *will* go' (Nurse 2008: 299)

In N44 Sena, a related formation is seen, here the auxiliary augments the future encoded by –*na*- in an assertive or emphatic future (and actually represents a split/doubled inflectional pattern). Both the Sena form and the Tumbuka one reflect a future auxiliary derived from the verb 'say' -*ti*. This is what probably explains the modal dependent final vowel forms on the lexical verbs in these AVCs.[34]

(280) N44 Sena

> *ndi-na-ti*　　*ndi-dy-**e***
> 1-FUT-AUX　　1-eat-**FV$_{SBJNCTV}$**
> 'I will eat, far more certain' (Nurse 2008: 92)

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[34] Thanks to an anonymous referee for pointing this out to me.

A different kind of dependent marked but doubly-subject inflected AVC is exemplified by the S21 Venda continuous formation, where the dependent marker occurs following the subject prefix on the lexical verb:

(281) SUBJ-AV SUBJ-DEP-LV:*a*

(282) S21 <u>Venda</u> (Niger-Congo, Bantu; South Africa, Zimbabwe)

> *vha-dzula   vha-tshi-vhala*
> 3PL-CONT   3PL-DEP-read:FV
> 'they always/continously read' (Heine 1993: 38)

Doubled subject and future marking are found in S43 Siswati with the auxiliary –*be* when it means 'be about to' but not when it has progressive functions, when the future –*tawu*- is found only on the auxiliary. Thus, the former construction shows a doubled pattern of inflection, the latter a split/doubled one.

(283) SUBJ-TA-AV SUBJ-TA-LV:*a*   *be* 'about to'

(284) S43 <u>Siswati</u>

> **ba-tawu**-*be*   **ba-tawu-***cala* *nakuvakala*   *kukhala*
> **3PL-FUT**-AUX   **3PL-FUT**-start   when.to.beaudible to.produce.sound
>
> *inkwela*
> whistle
>
> 'they will be about to start when the whistle sounds'
> (Botne 1986: 307; Ziervogel and Mabuza 1976: 187)

(285) SUBJ-FUT-AV   SUBJ-LV-*a*   *be* PROG

(286) S43 <u>Siswati</u>

    ba-tawu-be   *ba-hamba*   *na-ba-fika-ko*   *bangani*
    3PL-FUT-AUX   3PL-travel   when-3PL-arrive-LOC   CLS2.PL:friends

    bakhe
    CLS2.PL:his

    'they will be traveling when his friends arrive'
    (Botne 1986: 312; Ziervogel and Mabuza 1976: 187)

Intra-language or dialect variation is not uncommonly found in Bantu languages. Torrend (1891) described forms in various Tonga varieties with the following four variants for the future. There are three variants with a *ya* auxiliary element and one with a putative *za. The fourth form (287d) is structurally identical to the first one (287a) only with a different (?) auxiliary verb. Both likely reflect historical fusings of doubly-subject inflected forms, seen in (287b) This same auxiliary –*ya* appears optionally within an AUX-headed structure with the lexical verb in the infinitive form (287c). Thus there is both variation between an AUX-headed and a doubled AVC and variation between degrees of univerbation in the AVCs as well.

(287) a. <u>'Tonga'</u>   b. <u>'Tonga'</u>   c. <u>'Tonga'</u>   d. <u>'Tonga'</u>

    u-yoo-bona ~ u-ya u-bona   *u-ya ku-bona*   *u-zoo-bona*
    3-FUT-see   3-FUT 3-see   3-FUT INF-see   3-FUT-come
    'he will see'
    (Torrend 1891: 242)

In other words, there is four-way variability among future formations. Either the future marker appears as free-standing auxiliary in a bipartite AVC or in fused form. Further the future 'affix' appears as either –*yoo*- or –*zoo*-. Lastly, the synchronic bipartite AVC with –*ya* is found either in an AUX-headed structure with the lexical verb in an infinitive form, or it is a doubled inflectional structure with the lexical verb appearing in the (fully) finite –*a* form.

    Lombard (1978: 327) offers examples of similar variation in Northern and Southern Tonga. Northern Tonga (288) has a straighforward AUX-headed pattern of the common

Bantu type. The Southern Tonga form (289) may reflect a fusing of the tense element and the infinitive, or a fused doubled inflectional pattern, as above.

(288) <u>N. Tonga</u>

> *u-na   ku-langa*
> he-TNS   INF-look
> 'he will look' (Lombard 1978: 327)

(289) <u>S. Tonga</u>

> *u-noo-langa*
> he-TNS:INF-look
> 'he will look' (Lombard 1978: 327)

SUBJ-AUX<=FUT> INF-LV-*a*	*ya*	future
SUBJ-AUX<=FUT> SUBJ-LV-*a*	*ya*	future
SUBJ-AUX<=FUT>-LV-*a*	*yoo*	future
SUBJ-AUX<=FUT>-LV-*a*	*zoo*	future < *za [k]u-?

Table 5: Tonga future variants

6.3 Split inflection in Bantu AVCs. True split formations are quite marked within the Bantu context. One possible split formation in Bantu may be seen in the following Northern Sotho form. Lombard (1978) argues for a derivation of this from **bá tlá go e tlíʃa*, that is, a split form with an infinitive marked lexical verb. Subject appears with the auxiliary and object with the lexical verb.

(290) <u>Northern Sotho</u>

> *bá[-]tló e[-]tlíʃa   ?? < *bá   tlá   go   e   tlíʃa*
> they-FUT it-bring   * they come INF   it   bring
> 'they will bring it (Lombard 1978: 319)

In Mbugwe an unusual situation for Bantu is seen in which the pattern with the common inflectional split between object-encoding with the lexical verb, but subject-encoded on the auxiliary is attested in a V AUX configuration. V AUX formations, although highly marked for Bantu, are a characteristic feature of the Tanzanian Rift Valley area, which includes Mbugwe (see section 10).

(291) OBJ:LV:*a/-a* {SUBJ-(TA)}-AV

(292) <u>Mbugwe</u>

> *ora   ko-kéndé   wári*
> 15:eat:FV1PL-PRS.PROG   ugali
> 'we are eating food' (Mous 2004: 472; Kießling et al. 2008: 219)

6.4 Split/Doubled inflectional patterns in Bantu AVCs

Split/Doubled patterns are more common in Bantu than in the other genetic units of Africa as a whole. Split/Doubled AVCs are widespread and of numerous formal subtypes in the Bantu languages. In almost all of the sub-patterns of AVCs in Bantu showing split/doubled inflection, the doubled category is subject.

  AVCs in Bantu languages are particularly rich in variations on the general theme of doubled subject encoding, but with split or doubled distribution of other inflectional categories. One common pattern shows split negation, but doubled subject. Typically, the negative appears on the lexical verb with doubly marked subject.

  A pattern is found with split negation and doubled subject encoding in the following construction from Swahili, with the lexical verb appearing in a conegative form:

(293) SUBJ-AV NEG-SUBJ-LV-*i*$_{\text{CONEG}}$

(294) <u>Swahili</u>

> **tu**-*li-kuwa*   **ha-tu**-*fany-i*
> **1PL**-AUX-INF:AUX **NEG-1PL**-do-**FV**$_{\text{CONEG}}$
> 'we weren't doing anything' (Aksenova 1997: 21)

As just mentioned, the lexical verb appears in the negative dependent (or co-negative) form in Swahili with the final vowel -*i*. Similar formations are found, for example, with negative on the lexical verb and a negative dependent form of the lexical verb in a double-subject inflected AVC in Setswana, here represented by the use of the final vowel –*e* which may simply be a (conegative) use of the subjunctive final vowel –*e*, or the reflex of the conegative element –*i* of Swahili in Setswana. The motivation for the use of irrealis-type morphology with a negative in a construction like this is straightforward.

(295) SUBJ-AV NEG-SUBJ-LV-*e*_{SBJNCTV/CONEG}

(296) <u>Setswana</u> (Bantu, Botswana)

> **ke-**nê   **ke-sa-**rêke
> **1-**AUX   **1-NEG-**buy:FV_{SBJNCTV/CONEG}
> 'I was not buying' (Cole 1955: 251)

The auxiliary –*nê* in the following SeTswana form (and the one above) appears to encode past tense in the negative past formation. Other auxiliaries, like –*bo* in Setswana show the same doubled-subject/split negative inflectional pattern, but with additional tense marking split on the auxiliary verb, i.e. in a pattern like that of (297).

(297) SUBJ-TA-AV   NEG-SUBJ-LV-*e*_{SBJNCTV/CONEG}

(298) a. <u>Setswana</u>

> **ke-**nê   **ke-sa-**itse
> **1-**AUX   **1-NEG-**know:FV_{SBJNCTV/CONEG}
> 'I did not know' (Setshedi 1974: 34)

b. <u>Setswana</u>

> **ba-(tla)-**bo   **ba-sa-**itse
> **3PL-(FUT)-**AUX **3PL-NEG-**know:FV_{SBJNCTV/CONEG}
> 'in a way they did not know (won't be knowing)'
> (Setshedi 1974: 34)

Setswana also shows a different split/doubled patterning with the negative *–se-* appearing in the TA slot of the auxiliary verb *–ka*, and with doubled subject marking. Note that the lexical verb appears in the *–a* final vowel form in these Setswana AVCs.

(299) SUBJ-NEG-AV   SUBJ-LV:*a*

(300) Setswana

     ba-na   **ba-se**-*ka*   **ba**-*robala*
     PL-children **3PL-NEG**-AUX **3PL**-sleep:FV
     'the children must not sleep' (Setshedi 1974: 42)

With negative *ga-* in pre-initial position in the template, the auxiliary *–aka* shows yet another formal sub-type of, or permutation on, the same theme of double subject inflection but split negative marking in Setswana.

(301) NEG-SUBJ-AV   SUBJ-LV:*a*

(302) a. Setswana   b. Setswana

     ga-ke-*aka* **ka**-*rêka*   **ga-o**-*aka*   **wa**-*rêka*
     NEG-1-AUX **1**-buy   **NEG-2**-AUX **2**-buy
     'I did not buy'   'you did not buy'
     (Cole 1955: 250)

In Kinyarwanda the pre-initial *nti-* negative can appear alternatively on either the lexical verb or the auxiliary verb in the negative progressive, yielding the folllowing two variants.

(303a)   NEG-SUBJ-AV   SUBJ-LV:*a*   (same as (301))

(303b)   SUBJ-AV NEG-SUBJ-LV:*a*

(304) a. <u>Kinyarwanda</u>   b. <u>Kinyarwanda</u>

        nti-tu*-rího* ***du****-kór-a*   ~   ***tu****-rího*   ***ntî-du****-kór-a*
        NEG-**1PL**-AUX   **1PL**-work-FV   **1PL**-AUX   NEG-**1PL**-work-FV
        'we are not working'   'we are not working'
        (Kimenyi 1979: 193)

A different kind of split/doubled pattern involving tense and aspect marking is also attested in various Bantu languages. Tense occurs on the auxiliary alone in Hemba (see (96) above) and Nkore-Kiga (306).

(305) SUBJ-TA-AV SUBJ-LV:*a*

(306) <u>Nkore-Kiga</u>

        Abahima   ***ba-ka****-gab(w)a*   ***ba****-tamba*   *embuzi*
        Bahima   **3PL-REM.PST**-AUX:P   **3PL**-sacrifice:FV goats
        'the Bahima used to sacrifice goats' (Taylor 1985: 157)

Note that the lexical verb appears in the −*a* final vowel form in the above AVCs. In another set of Bantu languages one finds a pattern with nearly identical distribution to that of Hemba and Nkore-Kiga above with tense encoded only on the auxiliary, and subject doubly marked; however in these Bantu languages, the lexical verb appears in the modal dependent final vowel form in −*e*. These latter types of formations, with doubled subject encoding but tense on the auxiliary and an overtly dependent lexical verb, are particularly common in central and eastern Bantu languages such as M14 Lungu.

(307) SUBJ-TA-AV   SUBJ-LV:*e*$_{\text{SBJNCTV}}$

(308) M14 <u>Lungu</u>

        tw-áá-shá   *tú-Ø-lím-e*
        1PL-PST-AUX   1PL-TA-farm-FV$_{\text{SBJNCTV}}$
        'we'll soon farm' (Nurse 2008: 163)

In the case of N44 Sena and G20 Shambala, the etymology of the auxiliary verb is 'say' which originally took a complement in the subjunctive form. This constructionally

dependent and determined form was carried over onto the lexical verb in the AVC when the sequence grammaticalized, in two rather different functions in these two Bantu languages: as an 'already' past in Shambala (310), and a definite remote future in Sena (see (280) above for the Sena example):

(309) SUBJ-TA-AV   SUBJ-LV:*e*_{SBJNCTV} repeat of (319)

(310) G20 <u>Shambala</u>

> *ni-zah-ti   ni-kund-e*
> 1-TA-AUX   1-hope-SBJNCTV
> 'I already hoped (Aksenova 1997: 34)

E72 Giryama shows a different formal sub-type of this pattern with double subject marking as expected, tense encoded on the auxiliary verb. The lexical verb stands in the –*a* final vowel form but is marked as dependent by what may have originally functioned as a consecutive marker –*ka*-, now appearing to have taken on the role of a dependent marker in an AVC:

(311) SUBJ-TA-AV   SUBJ-*ka*-LV:*a*

(312) E72 <u>Giryama</u>

> *f-á-kala   fu-ka-gula*
> 1PL-PST-AUX:FV   1PL-*ka*-buy:FV
> 'we used to buy' (Nurse 2008: 292)

Yet another pattern is found with a dependent marker in the position following the subject marker (cf. the doubly inflected Venda form above), whether it be the infinitive or another marker of dependency, doubled subject inflection and tense/aspect marking on the auxiliary alone. Such AVCs are characteristic of Bantu languages in Tanzania like F21 Sukuma, F24 Kimbu or standard Swahili (G42). In F21 Sukuma, the dependent marker is -*líí*- in the following formation:

(313) SUBJ-TA-AV   SUBJ-DEP-LV:*a*

(314) F21 <u>Sukuma</u>

> **d-àà≠lí**   *dʊ́-tààlɪ*   *dʊ̀-**líí**≠gʊ́là*
> **1PL-PST-**AUX   **1PL-**PRSTV   **1PL-DEP-**buy:FV
> 'we were still buying' (Nurse 2003: 91)

The –*ki*- participle form may be used as a dependent marker on the lexical verb in a functionally similar split/doubled AVC in G42 Swahili:

(315) SUBJ-TA-AV   SUBJ-PRTCPL-LV:*a*

(316) G42 <u>Swahili</u>

> **wa-li-***kuwa*   **wa-ki-***temba*
> 3PL.ANIM-PST-AUX 3PL.ANIM-PRTCPL-walk:FV
> 'they were walking' (Field Notes)

In other Bantu languages, tense is marked not on the auxililary, but rather on the lexical verb, with doubled subject inflection. Such a formation is found in J60/D61 Kinyarwanda and E10 Kuriya, with present and future tense, respectively encoded only on the lexical verb:

(317) SUBJ-AV SUBJ-TA-LV:*a*

(318) J60/D61 <u>Kinyarwanda</u>

> **u-***rího*   **u-ra-***soma*
> **2-**AUX   **2-PRS-**read:FV
> 'you are reading' (Kimenyi 1979: 191)

(319) E10 <u>Kuri[y]a</u>

> **ni-***yi   **n-ds-***itaiki-a*
> **1-**AUX   **1-FUT-**continue-FV$_{INDIC}$
> 'I will continue' (Aksenova 1997: 20)

A slight variation on this theme is seen in E71 Pokomo, where it is rather aspect, not tense that shows split inflection, restricted to the lexical verb alone in the following AVC (past tense being encoded by the auxiliary *–wa* in this case presumably):

(320) E71 <u>Pokomo</u>

    hu-*wa*   **hu-ki**-*cheza*
    1PL-AUX **1PL-SIT**-play:FV
    'we used to play' (Nurse 2008: 247)

Another permutation of this same pattern is found in M25 Bungu where subject is doubly marked, and aspect is restricted to the auxiliary verb.

(321) SUBJ-AV-ASP   SUBJ-TA-LV:*a*

(322) M25 <u>Bungu</u>

    tu-*li*-**sh**-*a*   **tu**-*Ø*-*bala*
    1PL-AUX-**PRSTV**-FV   **1PL**-go:FV
    'we're still going' (Nurse 2008: 146)

In the following split/doubled AVCs found in L33 Luba and [P30] Makua-Maverone, tense is marked on the auxiliary and aspect of some sort on the lexical verb, while as always the doubled category is the subject**.**

(323) SUBJ-TNS-AV   SUBJ-ASP-LV:*a*

(324) L33 <u>Luba</u>

    w-aa-dí   *u-ki-dya*
    3-PST-AUX 3-PRSTV-eat:FV
    'he was still eating' (Nurse 2008: 146)

(325) P30 cluster [Makua]-(E)Maverone

> *mu-lópwána*   ***a-n*-*iíra***   ***a-voliwá*-*ká***
> 1-man   **3SG-PRS**-AUX   **3SG-PFV**-starve:FV
> 'the man is really starving' (Kröger 2010: 170)

In the following conditional AVC from J20/E22 Haya, subject is doubly marked, tense is encoded on the auxiliary and tense-cum-mood on the auxiliary:

(326) SUBJ-TM$_j$-AVSUBJ-TA$_i$-LV:*a*

(327) J20/E22 Haya

> *ká*   *John* ***a-la*-*ba***   ***y-á*-*ikiriza***   *Jack* *y-á-yânga*
> if   John   **3-FUT.I/COND**-AUX   **3-PST**-agree:FV   Jack   3-PST-disagree:FV
> 'If John agreed (earlier today), Jack diasgreed'
> (Salone 1979: 67)

As exemplified in (101) above, a split/doubled AVC with aspect and tense appearing on the lexical verb but with subject doubly marked may be found in [P20] Ciyao. A different kind of split may be commonly found in various Bantu languages. In this pattern (328), subject is doubly marked, as is tense, but object appears only with the lexical verb. M54 Lamba is an example of a Bantu language possessing AVCs of this type; see (87).

(328) SUBJ-TA-AV SUBJ-TA-OBJ-LV-*a*$_{\text{INDIC}}$

6.5 LEX-headed AVCs in Bantu. LEX-headed formations are very marked in Bantu. In certain instances, it is likely that the constructions represent eroded forms that originally reflected a split/doubled pattern. Thus, the future progressive in Sukuma which has doubled subject inflection (332)/(68) is similar in shape to the future in Sukuma which is synchronically a LEX-headed formation (330)/(30). In other words, a dependent-marked auxiliary verb that appears in the modal dependent final vowel form appeared in the doubly-subject inflected progressive future (332) in what was the likely historical structural antecedent of the modern future in F21 Sukuma: **dʊ-Biíz-e dʊ-gŏl-e* [*1PL-AUX-**FV**$_{\text{SBJNCTV}}$ 1PL-buy-**FV**$_{\text{SBJNCTV}}$], i.e., **SUBJ-AV-e*$_{\text{SBJNCTV}}$ SUBJ-LV-*e*$_{\text{SBJNCTV}}$. However, the subject marking has been lost on the initial verb in the future in Sukuma, and this form thus rather reflects a LEX-headed construction (330) synchronically.

(329) AV:*e*_{SBJNCTV}   SUBJ-LV-*e*_{SBJNCTV}

(330) F21 Sukuma

    ĭze   *dʊ-gŭl-e*
    FUT:FV_{SBJNCTV} 1PL-buy-FV_{SBJNCTV}
    'we will buy' (Nurse 2008: 299)

(331) SUBJ-AV-*e*_{SBJNCTV}   SUBJ-LV-*a*

(332) F21 Sukuma

    dʊ-Biíz-e   *dʊ-lıı-gʊ́la*
    1PL-AUX-**FV_{SBJNCTV}** 1PL-TA-buy:FV
    'we'll be buying' (Nurse 2008: 299)

As mentioned above one suspects that something like this kind of development might have occurred in the history of [G60] Kerewe. Here the future *saa < sa* 'come' appears in a LEX-headed formation.

(333) AV   SUBJ-LV:*a*

(334) G60 Kerewe

    saa *tu-gula*
    FUT **1PL**-buy:FV
    'we will buy' (Kießling et al. 2008: 201)

This LEX-headed formation may well have derived from a doubled formation the type of which is exemplified by the second auxiliary verb –*va* in the complex future perfect AVC (336).

(335) AV SUBJ-AV SUBJ-LV-*ile*_{PRF}

(336) G60 <u>Kerewe</u>

> *saa   tu-va   tu-gus-ile*
> FUT   1PL-AUX   1PL-buy-PRF
> 'we will have bought' (Kießling et al. 2008: 201)

Note that the auxiliary *–sa* < 'come' also appears in an intentional/immediate future AVC in Kerewe as well (338) in the common Bantu AUX-headed configuration (lexical verb in the infinitive form plus final vowel *–a*).

(337) SUBJ-AV INF-LV:*a*

(338) G60 <u>Kerewe</u>

> *tu-sa   **ku**-gul**a***
> 1PL-AUX   **INF**-buy**:FV**
> 'we are going to buy'   (Kießling et al. 2008: 200)

It is not clear if the modal element *anga* in G23 Shambaa likewise comes from an eroded double subject formation as seems likely for both F21 Sukuma and G60 Kerewe. Perhaps it is noteworthy that such LEX-headed formations are common in G23 Shambaa's close sister variety, G23 Shambala. Note that synchronically this element *anga* may be alternatively incorporated into a larger verbal complex in the TA position in the verbal template in G23 Shambaa.

(339) a. G23 <u>Shambaa</u>   b. G23 <u>Shambaa</u>

> *anga   ti-za-dika*   *t-angá-dika*
> MOD   1PL-AUX-cook:FV   1PL-MOD-cook:FV
> 'we would have cooked'   'we would have cooked'
> (Nurse 2008: 251)

6.6 Tense-marked pronouns or fused subject/auxiliary formations in Bantu. In addition to true split and LEX-headed formations, which, as I alluded to above, are rather rare among Bantu languages, so too are pronominals which represent fused TAM auxiliaries historically. Such formations are found across the languages of the Macro-Sudan Belt, which peripherally includes some northwestern Bantu languages, for

example A71 Eton and 'Bantoid' languages (Watters 1989, Hedinger 1989, Watters and Leroy 1989). Note that such formations are found in related Benue-Congo languages and other groups more distantly related to Bantu (see section 12 for a discussion of these languages in the context of the areal characteristics of the languages of the Macro-Sudanic Belt).

In Eton clause-initial forms of the (historically) fused subject pronoun/auxiliary type are found with phonologically dependent 'infinitive' forms of the lexical verb.

(340) SubjProN:AV   INF:LV

(341) a. A71 Eton

      mèté ↓*bógbô*   *vá*
      1:PRS INF:sit:PNL   here
      'I sit down here' (Van de Velde 2008: 132)

    b. A71 Eton

      wèèy   *sɔ́*   *ídɛ́n*
      2:FUT   INF:come when
      'when will you come?' (Van de Velde 2008: 180)

In Wambo Bantu languages of Angola and Namibia, there are subject/auxiliary forms with a similar origin. Some of these appear as free-standing forms and are embedded in various inflectional sub-types of AVCs. Thus in R242 Eunda present and negative present first person 'pronouns' are found in an AUX-headed configuration:

(342) R242 Eunda (Wambo Bantu)

      ándi lɔ́ŋgɔ́ itandí   *lɔ́ŋgɔ*
      PRS:1 work NEG:PRS:1   work
      'I work'   'I do not work' (Baucom 1972: 67)

(343) < AUX-1 work   < NEG-AUX-1 work

Mbalanhu has similar non-past and negative non-past first person 'pronouns' but used with a future tense marker (< 'go') to mark future and negative future, respectively. The future is similar to the present form in Eunda above, only using the future auxiliary between the 'tense-marked pronoun' and the verb.

(344) NPST:1 FUT LV < AUX-1 FUT LV

(345) Mbalanhu

    ándí   ká   longó
    NPST:1   FUT   work
    'I will work' (Fourie 1993: 24-25)

In the Mbalanhu negative future the lexical verb appears rather in the final vowel form in −*a*.

(346) NEG.NPST:1   FUT LV:*a* < NEG-AUX-1   FUT LV:*a*

(347) Mbalanhu

    íhándí   ká   longá
    NEG:NPST:1 FUT   work:*a*
    'I won't work' (Fourie 1993: 24-25)

In Ngandjera and Evale similar forms are found but used together with a phonologically dependent use of this *ka-* future < 'go' in a fused auxiliary structure, with perhaps the now fused future being reanalyzed as a type of dependent marker? This is used together with the present tense (or non-past) 'pronoun'.

(348) PRS:1 AUX-LV:*a* < NEG-AUX-1 AUX-LV:*a*   < PV-AUX-1 AUX_{<go>} work:FV

(349) Ngandjera

    ɔtandí   ka-lɔ́ŋga
    PRS:1   AUX-work
    'I am going to work; I shall work' (Baucom 1972: 68)

(350) < AUX-1 AUX_{<go>}-work:FV

(351) <u>Evale</u>

    andí ka-lóŋga
    PRS:1 AUX-work
    'I am going to work' (Baucom 1972: 68)

6.7 Fused/fused formations: More on complex verbs in Wambo Bantu. The final
stage in this development is the reconstituting of larger fused complex verb forms that are
typical of Bantu languages, as seen in Oshikwanyama, which has a perfect form also
derived from split forms of the shape < *NEG-TA<AUX-SUBJ[?-AUX?] LEX-PRF. As
perfect was marked on the original lexical verb and the remaining inflectional categories
on the former auxiliary, this Oshikwanyama formation represents a type of fused split
structure.

(352) NEG-PST-1-work-PRF < *NEG-AV-1   LV-FV_{PRF}

(353) <u>Oshikwanyama</u> (Wambo Bantu)

    ínandi-lɔ́ŋɛ́lɛ́
    1:NEG:PST-work:PRF
    'I have not worked' (Baucom 1972: 67)

Many Wambo Bantu varieties have fused/fused forms of this sort, including Mbandja,
Kolonkadhi, and Kwambi.

(354) < NEG-AV-1-LV-CONEG   < *NEG-AV-1   LV-CONEG

(355) <u>Kwambi</u> (Wambo Bantu)

    ihándi-rɔ́ŋɔ-tsǎ
    NEG:HAB:1-work-NEG
    'I don't usually work' (Baucom 1972: 67)

(356) < *NEG-AV-1 AV_{<go>} LV:FV

(357) <u>Kolonkadhi</u>

    itándi-ká-lɔŋga
    NEG:FUT:1-AUX-work
    'I shall not work' (Baucom 1972: 68)

(358) < *NEG-AV-1 AV$_{<go>}$ LV:FV

(359) <u>Mbandja</u>

    ihái-ká-lɔŋga
    NEG:FUT:1-AUX-work
    'I shall not work' (Baucom 1972: 68)

6.8 On the AVC origins of synthetic TAM formations in Bantu. Tense prefixes in Bantu generally come from fused AVCs. These reflect both the dominant AUX-headed order characteristic of the family and the family-wide favoring of AUX-V order. These genetic/typological insights may also be used to help understand the origin of complex verb forms in individual Bantu languages. Bantu languages are rightly famous for their large complex verb forms. These complex forms typically represent the fusing of auxiliary verb structures. Sometimes all that is left of the construction is the auxiliary verb and the lexical verb stem. This is the case in the definite near future in *–na-* in N42 Sena and the present in *–na-* in G42 Swahili:

(360) *SUBJ-AV INF-LV   >   *SUBJ-AV-INF-LV   >   SUBJ-TA$_{<AV>}$LV

(361) N44 <u>Sena</u>

    ndi-na-dya
    1-FUT-eat:FV
    'I will eat, near/more certain' (Nurse 2008: 92)

(362) G42 <u>Swahili</u>

    ni-na-taka
    1-PRS-want
    'I want'   cf. *-na*   'have' (Field Notes)

Sometimes all that is left of an original AUX-headed structure in a given Bantu language is the infinitive marker, now itself having assumed the function of the original AVC. Such developments probably independently underly the formation of the present form in *–ku-* in G11 Gogo and the future form in *–ku-* in H42 Hungu.

(363) *SUBJ-AV INF-LV   > *SUBJ-AV-INF-LV > SUBJ-TA$_{<INF>}$-LV

(364) G11 <u>Gogo</u>

    ni-ku-gulá
    1-GENERAL.PRS-buy:FV
    'I buy' (Nurse 2008: 209)

(365) H42 <u>Hungu</u>

    tu-ku-sumba
    1PL-FUT-buy:FV
    'we will buy' (Nurse 2008: 209)

Because fused fuller structures are also found in other Bantu languages, it is easy to see how such forms would erode over time or in rapid speech. A fused AUX-headed AVC with an infinitive marked lexical verb may be found in the following Chichewa form:

(366) *SUBJ-TA-AV INF-LV > SUBJ-TA-AV-INF-LV

(367) <u>Chichewa</u>

    ndi-na-li-ku-gona   *pamene* *mu-na-ndi-ona*
    1-REM.PST-AUX-INF-sleep:FV when   2PL-REM.PST-1-see:FV
    'I was sleeping when you saw me'
    (Bentley and Kulemeka 2001: 33)

Other fused forms can be seen in individual Bantu languages derived from an original 'be (located/at)' plus locative (+ infinitive) marked construction encoding the progressive. A form with both the locative and infinitive preserved, in addition to the nearly eroded auxiliary may be seen in the following complex verb form in D28 Holoholo:

(368) < *SUBJ-AV   LOC-INF-LV

(369) D28 <u>Holoholo</u>

    w-i-mú-ku-keba
    3-AUX-LOC-INF-search:FV
    'she is searching' (Nurse 2008: 209)

With the locative marker alone preserved, the progressive form in B73 Lyaa reflects a univerbation of an original'be' + locative formation.

(370) *SUBJ(-TA)-AV LOC-INF-LV >> SUBJ(-TA)-AV-LOC-LV

(371) a. B73 <u>Lyaa</u>

    bisí   *di-li-mu-sála*
    we   1PL-AUX-LOC:at-work:FV
    'we are working' (Nurse 2008: 250)

  b. B73 <u>Lyaa</u>

    me   *n-a-bá-mu-sála*
    I   1-PST-AUX-LOC:at-work:FV
    'I was working' (Nurse 2008: 250)

The reader may have noticed that all the above complex verb forms derived from fused AVCs from across the Bantu languages reflect lexical verbs in the –*a* final vowel form and this is typical of such complex verb forms in Bantu derived from AUX-headed AVCs. Fused AVCs with a verb in the dependent modal final vowel form in –*e* are uncommon but may be found in such forms as the far future in JE31c Bukusu. Such a fact may suggest that this future derived from an eroded doubly inflected formation in Bukusu, not an AUX-headed formation which anomalously has the lexical verb in this modal dependent –*e* final vowel form.

(372) SUBJ-TA-LV-*e*_{SBJNCTV} < ?*SUBJ-AV   SUBJ-LV-*e*_{SBJNCTV}

(373) JE31c/E31 <u>Bukusu</u>

    xu-xa-xul-e
    1PL-FUT-buy-FV_{SBJNCTV}
    'we will buy {F_2}' (Nurse 2008: 243)

The formation of just the future alone in Bantu could constitute the subject of a monograph in itself. Far and away the most common verb to get grammaticalized as a future in Bantu languages is the verb 'come', which has entered into grammaticalization paths in different Bantu languages at different stages (as it has in many African languages, see 4.1 above). Indeed, a wide range of patterns and variants are attested when looking at the full spectrum of future AVCs across the languages of the Bantu family. The crastinal future in Kinyarwanda is encoded by a fused version of what was probably historically the same structure, an AUX-headed formation using the verb come.

(374) SUBJ-TA-LV:*a*   < ?*SUBJ-AV   [INF-]LV:*a*

(375) J60/D61 <u>Kinyarwanda</u>

    a-za-kora
    1-FUT-work:FV
    'he will work (after today)' (Botne 1990: 190; Hurel 1911)

A cognate looking fused formation preserving the infinitive marker is found in Zulu (377).

(376) SUBJ-TA-INF:LV:*a*   < ?*SUBJ-AV   INF-LV:*a*

(377) <u>Zulu</u>

> *ŋgi-za-ukuthanda*
> 1-FUT-INF:love:FV
> 'I will love' (Meinhof 1948: 114)

The future form itself that gave rise to these bound future prefixes probably arose from a structure of 'come' plus an original infinitival complement clause. The putative original structure is in fact found in Kinyarwanda in the near future tense, which remains an AUX-headed AVC structure with an infinitive-marked lexical verb:

(378) J60/D61 <u>Kinyarwanda</u>

> *a-za   gu-kora*
> 1-FUT   INF-work:FV
> 'he will work (later today)' (Botne 1990: 190; Hurel 1911)

<u>Kinyarwanda</u>
SUBJ-AUX<=FUT> INF-LV-*a*   *za*   hodiernal future
SUBJ-AUX<=FUT>-LV-*a*   crastinal future

<u>Konde</u>
SUBJ-AUX<=FUT> INF-LV-*a*   *sa*   future

<u>Zulu</u>
SUBJ-AUX<=FUT>-LV-*a*   *za*   future

Table 6: Future < 'come' in Kinyarwanda, Makonde and Zulu

Nurse (2008: 254) describes a fused split AVC in F23 Sumbwa with the final vowel position on the original lexical verb encoding the perfect. Nurse has argued convincingly

that the final vowel slot originally encoded aspectual or modal/aspectual semantics in Proto-Bantu. The F23 Sumbwa hesternal past is a fused AUX-headed form with the final vowel –*a*.

(379) SUBJ-TA-LV:*a*   < ?*SUBJ-AV   INF-LV:*a*

(380) F23 Sumbwa

>   *tw-a:la:-gʊl-a*
>   1PL-TA-buy-FV
>   'we bought {P₂}' Nurse (2008: 255)

The past perfect form in the language on the other hand is a fused split form with the perfect suffix –*ile* in the final vowel slot of the lexical verb.

(381) SUBJ-TA-LV-*ile*$_{PRF}$ < *SUBJ-AV LV-*ile*$_{PRF}$

(382) F23 Sumbwa

>   *tw-a:la:-gʊl-ile*
>   1PL-TA-buy-FV
>   'we had bought' Nurse (2008: 255)

M63 Ila shows similar fused split forms where perfect was marked on the original lexical verb element and subject and tense on the original auxiliary.

(383) SUBJ-TA-TA-LV-*ile*$_{PRF}$ < *SUBJ-TA-AV LV-*ile*$_{PRF}$

(384) a. M63 Ila   b. M63 Ila

>   *tw-aká-ákú-p-ele*   *tw-a-ákú-p-ele*
>   1PL-TA-ANT-give-PRF   1PL-TA-ANT-give-PRF
>   'we have given {P₂}'   'we have given {P₁}'

c. M63 <u>Ila</u>

tu-la-aku-p-elé
1PL-FUT-ANT-give-PRF
'we will have given' (Nurse 2008: 158)

Fused doubled formations may not appear *per se* in Bantu (but see the Tonga alternations described above for one possible example of just such a structure). In fast speech however they are probably common with AVCs showing doubled inflection in many Bantu languages.

Unsurprisingly, just as LEX-headed formations are rare in Bantu languages, so too are fused complex verb forms derived from such structures. One possible exception is the use of the negative and some TAM markers that appear in the pre-initial position in a range of Bantu languages. Negative markers appearing in this position may derive from original auxiliary structures in S52 Tsongo or S62 Tonga.

(385) NEG-SUBJ-LV-$i_{<CONEG>}$ < ?*NEG/AV SUBJ-LV-$i_{<CONEG>}$
                                                                  < ??*SUBJ-NEG/AV SUBJ-LV-$i_{<CONEG>}$

(386) S53 <u>Tsongo</u>

a-hí-dy-i   *buswa*
NEG-1PL-eat-FV$_{CONEG}$ porridge
'we don't eat porridge' (Nurse 2008: 269)

(387) S62 <u>Tonga</u>

kha-hi-hoj-í
NEG-1PL-eat-FV$_{CONEG}$
'we don't eat' (Nurse 2008: 269)

The future in G52 Ndamba which derives from *daghaya* 'want' is a clear example of a fused LEX-headed formation in a complex verb form (note the modal dependent final vowel).

(388) TA-SUBJ-LV-$i_{<DEP>}$ < ?*AV   SUBJ-LV-$i_{<DEP>}$
                                            < ??*SUBJ-AV   SUBJ-LV-$i_{<DEP>}$

(389) G52 Ndamba

>   *da-tu-telek-i*
>   FUT-1PL-cook-FV:DEP
>   'we will cook' (Nurse 2008: 299)

Similar to the development of the future prefix *da-* in G52 Ndamba, a fused LEX-headed formation is probably what underlies the future formation in Shambala as well. Like the form above, the lexical verb in this fused AVC appears in a modal dependent form.

(390) TA-SUBJ-LV-e_{SBJNCTV} < ?*AV   SUBJ-LV-e_{SBJNCTV}
                                          < ??*SUBJ-AV   SUBJ-LV-e_{SBJNCTV}

(391) Shambala

>   *nè-ní-dík-è*
>   FUT-1-cook-SBJNCTV
>   'I will cook' (Mfwumba Besha 1989: 66)

Similar to the argument put forth with repsect to Bukusu above, that the lexical verb is in the modal dependent form in *-e* in Shambala might suggest that the form in question derives from an eroded doubly inflected form originally. Consider now the following form from P22 Mwera. The near future complex has the form of what appears to be a fused LEX-headed formation similar to the Shambala and Ndamba ones above.

(392) P22 Mwera

>   *ci-tu-um-e*
>   AUX-1PL-buy-FV$_{\text{SBJNCTV}}$
>   'we will, are about to buy (today, tomorrow)' (Nurse 2008: 195)

Like Shambala and Bukusu, the modal dependent form of the final vowel in the verb form suggests it may derive from a doubly inflected form of the type presented above. AUX-headed formations in Mwera typically have the final vowel *–a*, as do fused forms derived from them (393), as indeed do certain of the doubly inflected AVCs in this language (394):

(393) <u>Mwera</u>

    tw-a:ci-um-a   *tu-ci-um-a*
    1PL-TA-buy-FV   1PL-TA-buy-FV
    'we bought two days ago'   'we bought (recently)'
    (Nurse 2008: 195)

(394) <u>Mwera</u>

    tw-a:ci tu-Ø-um-a
    1PL-AUX 1PL-TA-buy-FV
    'we were about to buy' (Nurse 2008: 195)

The only example of a quasi-fused split/doubled pattern that I have in my data set from Bantu is the fast speech form of the following Xhosa AVC. One suspects that similar quasi-fused formations are found in rapid speech of many if not most Bantu languages.

(395) <u>Xhosa</u> (Bantu; South Africa)

    nd-a-ndi-theth-ile   ~   *nd-a-ye*   *ndi-theth-ile*
    1SG-PLUP-1SG-speak-PRF   1SG-PLUP-AUX 1SG-speak-PRF
    'I had spoken (long ago)'   'I had spoken (long ago)'
    (Heine 1993: 108)

6.10 Summary of inflectional patterns in Bantu AVCs. Bantu languages have highly developed verb systems that exhibit an enormous range of variation, both in terms of degrees of synthesis seen in the verbal systems, as well as the sheer number of verbal constructions that have been grammaticalized repeatedly throughout a couple of millennia of development across the vast expanse of Bantu languages. To be sure familiar AUX-headed formations are common, with lexical verbs showing construction-dependent forms expressed both prefixally through infinitive, participial, or subordinate morphology, and suffixally through the use of the so-called final vowel position in the Bantu verb template. Doubled inflectional patterns, often with subject doubly expressed but lexical verbs in a dependent-marked form, are also highly characteristic of Bantu. Perhaps most characteristic of the family is the use of split/doubled inflectional patterns, where the doubled category is largely subject. Common splits include object-encoding

being restricted to lexical verbs, but negative marking shows many complicated sub-patterns across the various Bantu languages. True split and LEX-headed AVCs are quite uncommon in Bantu, as are fused subject/auxiliary forms or TAM/polarity pronouns. Finally, many complex verb forms in contemporary Bantu languages derived from the fusing of AVCs that were primarily of the AUX-headed type.

AH	Akoose; Duala; Bassa; Duma; Ekegusii; Kaguru; Kinyarwanda; Mpoto; Sena; Kikongo; Herero; Bukusu; Nedndeule; Umbundu; Tsotso (V AUX); Mbugwe (V AUX)
2x	Akoose; Duala; Yambasa; Siluyana; Hemba; Sukuma; Lungu; Tumbuka; Mwera; Venda; Setswana; Siswati; Sena; Kirundi; Shambala; Tonga; "Babungo"
split	Swahili; N. Sotho
S/2	Nkore-Kiga; Haya; Lamba; Shambala; Swahili; Ciyao; Kuriya; Pokomo; Luba; Lungu; Sena; Makua-Maverone; Setswana; Kinyarwanda; Hemba; Kimbu; Ejagham
LH	Sukuma; Shambaa; Kerewe
f S/TAM/P	Eton; Jarawa; Ngandjera; Eunda; Mbalanhu; Evale
fAH	Lyaa; Holoholo; Gogo; Swahili; Hungu; Bukusu; Kinyarwanda; Chichewa; Sena; Zulu; Makonde
f2x	?Tonga
f-split	Sumbwa; Ila
fS/2	?Xhosa in rapid speech
fLH	Mwera; Tsongo; Ndamba; Tonga; Shambala
f/fS/TAM/P	Makonde; Evale; Mbandja; Kolonkadhi; Eunda; Ngandjera; Oshikwanyama

Table 7: Patterns of inflection in AVCs in representative Bantu languages

7 Chadic

In this section, I offer a brief overview of the types of AVCs that are found in the languages of the Chadic family. Chadic languages are considered by Güldemann (2008) to form a peripheral member of the Macro-Sudanic Belt linguistic area (see section 12), and certain characteristics of the AVCs of Chadic languages support this position. Chadic languages are of course traditionally considered to be part of the Afroasiatic phylum as well.

7.1 AUX-Headed formations in Chadic. Chadic languages do not use AUX-headed formations as frequently as one might expect given how common auxiliary verb constructions are in these languages. That is not to say that AUX-headed AVCs are not attested in Chadic languages, since that is far from the case. In the Nigerian Chadic language Kwami, the number of the subject is encoded in the auxiliary, while lexical verbs appear in a variety of non-finite, nominalized, or subordinate forms, determined by the specific AVC they are embedded within, as for example the 'verbal noun' form in the following AUX-headed potential AVC.

(396) AV:SUBJ:TA LV<VN>

(397) Kwami [Chadic; Nigeria]

    yìn   *dùmángò*   *mècè*
    they AUX:PL:PST travel:VN
    'could they travel?' (Leger 1994: 251)

Sayanci of Nigeria shows a similar construction to the formation in Kwami with a nominalized form of the lexical verb and subject prefixes on the auxiliary verb in the progressive.

(398) SUBJ-AV LV-VN

(399) a. <u>Sayanci</u>   b. <u>Sayanci</u>

       m-yìgá nál-gə́nì   *m-yìgá gə̀m-gə̀nì*
       1-AUX   build-VN   1-AUX   put-VN
       'I am building'   'I am putting'
       (Schneeberg 1971: 95)

In Pero, the auxiliary *–íkka* encoding progressive licenses a lexical verb in an AUX-headed construction in either a bare-stem (or Ø-marked) form for active verbs or with the stative suffix for statives:

(400) SUBJ-AV LV[-STAT]

(401) a. <u>Pero</u> (W. Chadic)   b. <u>Pero</u>

       nì-íkka tùkk-áanì   *nì-íkka có   mín(a)*
       1-PROG   hide-STAT   1-PROG   drink beer
       'I am hiding'   'I am drinking beer'
       (Frajzyngier 1989: 103)   (Frajzyngier 1989: 104)

An AVC reflecting a familiar AUX-headed pattern may be found in Hausa. The subject is encoded via a suffix and the lexical verb appears in a structurally determined form, either a Ø-marked or phonologically dependent form (if the verb stem is monosyllabic), e.g., with auxiliaries *za* FUT, *kan* HAB, or a morphologically dependent form in *–ya*, e.g., with the auxiliaries *na* PROG and *ba* PROG.NEG. Note that this dependent form of the lexical verb has nothing to do with whether the auxiliary verb inflects prefixally (*-kan, -na*) or suffixally (*za-, ba-*) in Hausa.

(402) *za-*   AV-SUBJ   LV[<phonologically.DEP>]

(403) *ba-*   AV-SUBJ   LV-DEP

(404) *–kan*   SUBJ-AV   LV[<phonologically.DEP>]

(405) *–na*   SUBJ-AV   LV-DEP

(406) <u>Hausa</u> (Chadic, Nigeria)

    zá-n   zóó
    AUX-1 come
    'I will come' (Heine 1993: 77)

(407) <u>Hausa</u>   (408) <u>Hausa</u>

    za-ta   tafi   *ta-kan   tafi*
    FUT-3F go   3F-HAB go
    'she will go'   'she goes'
    (Schachter 1985: 42)

(409) <u>Hausa</u>   (410) <u>Hausa</u>

    ta-na   tafi-ya   *ba-ta   tafi-ya*
    3F-PROG go-DEP   PROG:NEG-3F go-DEP
    'she is going'   'she isn't going'
    (Schachter 1985: 42)

7.2 Doubled inflection in Chadic AVCs. Doubled inflection *per se* is also not common in Chadic languages. What is common is the use of intransitive copy or recapitulative 'pronouns' **(**Frajzyngier 1977**)** that give rise to structures that seem like double subject marking (see 7.3 below). However, true doubled subject formations are found in at least the Biu-Mandara Chadic language Muyang of Cameroon.

(411) SUBJ-AV SUBJ-LV

(412) <u>Muyang</u>

    á-r(ā)   á-zòm   ɮām
    3-AUX   3-eat   thing
    'he's about to eat something' (Smith 2010: 103)

7.3 Intransitive copy pronouns in Chadic AVCs. Chadic languages share, along with certain other genetic units of Nigeria and Cameroon (and of the Macro-Sudan Belt), a characteristic process of pronoun or pronominal agreement marker copying or what has

been called an intransitive copy pronoun or a recapitulative pronoun. One language where this process is particularly robust is the Biu-Mandara Chadic language Gidar of the Nigeria/Cameroon/Chad border region. The process operates much as the name 'intransitive copy' suggests, that is, an agreement marker–in what is often an object slot–pleonastically refers to the subject of the intransitive verb, thus marked on a lexical verb in an otherwise AUX-headed looking structure:

(413) SUBJ-AV LV_{\<INTRANS\>}-SUBJ vs. SUBJ-AV LV_{\<TRANS\>}-OBJ

(414) a. <u>Gidar</u>

> *é-gìl   dɜ̀   tɜ̀kí kɜ̀-dé   gli-òk   pàk*
> IMP-leaveASSC   where 2-FUT   leave-2   all
> 'leave by wherever you want to leave' (Frajzyngier 2008: 64)

  b. <u>Gidar</u>   c. <u>Gidar</u>

> *á-nnɜ́ sá-w á   jáaɓè*   *wá sá-n á   jáaɓè*
> FUT-1 be-1 PREP Djabe   FUT:3   be-3M PREP Djabe
> 'I will be in Djabe'   'he will be in Djabe'
> (Frajzyngier 2008: 141)

  d. <u>Gidar</u>

> *sɜ́   jáaɓè   nɜ̀-dà   zá-wà*
> from Djabe   1-DEP.PROG   come-1
> 'I just came from Djabe' (Frajzyngier 2008: 143)

Note that this intransitive copy pattern has many formal realizations in Gidar, and the verb may be proceeded by a complementizer and an infinitive marker with feminine singular subjects in the negative capabilitive AVC (416), but lacking the infinitive with first singular subjects (418).

(415) SUBJ_{\<F.SG\>}-AV   INF-LV-SUBJ_{\<F.SG\>}

(416) <u>Gidar</u>

> *tə̀-ɓàp   ná   ə-zzà-t   ɓà*
> 3F-able   COMP   INF-come-3F   NEG
> 'she cannot come' (Frajzyngier 2008: 434)

(417) SUBJ_{<1SG>}-AVLV-SUBJ_{<1SG>}

(418) <u>Gidar</u>

> *nə̀-ɓàp   ná   zá-w   ɓà*
> 1-able   COMP   come-1   NEG
> 'I cannot come' (Frajzyngier 2008: 434)

7.4 Split inflection in Chadic AVCs. In a reflection of the cross-linguistically most common split pattern seen in AUX V languages, there are constructions in Gidar in which subject is encoded on the auxiliary verb and object on the lexical verb:

(419) AV-SUBJ   LV-OBJ

(420) a. <u>Gidar</u>

> *wà-n   plá-n   wàłì   nà-w sù-kó*
> FUT-1   leave-3M cow   GEN-1 DAT-2
> 'I will leave my cow for you' (Frajzyngier 2008: 72)

b. <u>Gidar</u>

> *mà   wín   tà-t   ə́zgə́l-nì*
> mother   child PROG-F   feed-3M
> 'the mother is feeding the baby' (Frajzyngier 2008: 154)

c. Gidar   d. Gidar   e. Gidar

ìn tà-t   úlà-nì   ìn-tà-t   úlə̀-tà ìs-tà-t   úl-wà
1 PROG-COP.F   see-3M   1-PROG-3F   see-3F 2PL-PROG-COP.F see-1
'I see him'   'I see her'   'you see me'
(Frajzyngier 2008: 160) [ìntàtúlànì]

f. Gidar

wá-nə̀   mpə̀r-kó
FUT-1   chew-2
'I will eat you' (Frajzyngier 2008: 263)

Causative formations in Gidar work this same way, except that the subject is encoded on the lexical verb and the auxiliary encodes the object and the tense/aspect in an otherwise atypical V AUX configuration in Gidar.

(421) SUBJ-LV   AV-OBJ-TA

(422) a. Gidar

à-nzá   gà-wə́-kà
3M-run   CAUS-1-PRF
'he made me run' (Frajzyngier 2008: 138)

b. Gidar

á   nə̀-nzá gà-n   gáwlá   nkà
FUT   1-run   CAUS-3M lad   DEM
'I will make this lad run'
(Frajzyngier 2008: 171)

c. Gidar

n∂-nzá *gà-n∂-k*   *p∂rs∂*   *nkà*
1-run   1-CAUS-3M-PRF   horse   DEM
'I made this horse run' (Frajzyngier 2008: 171)

7.5 LEX-headed AVCs in Chadic. LEX-headed formations are marked and uncommon in Chadic languages but such formations are found in Gidar and Hdi. In the second person and third feminine singular with the future auxiliary *wá* in Gidar, the auxiliary is bare and there is a bizarre LEX-headed-cum-doubled formation where subject is doubly encoded on the lexical verb, most likely reflecting an instantiation of the intransitive copy pronoun.

(423) AV SUBJ-LV-SUBJ

(424) a. Gidar   b. Gidar

wá *kù-só-k* *á*   *jáaɓè*   *wá* *t∂-sá-t* *á*   *jáaɓè*
FUT   2-be-2   PREP   Djabe   FUT   3F-be-3F PREP   Djabe
'you will be in Djabe'   'she will be in Djabe'
(Frajzyngier 2008: 141)

The Gidar progressive in *tà* shows a similar distribution to the future, with a LEX-headed formation, subject and object both encoded on the lexical verb in the following AVC.[35]

(425) AV   LV-OBJ-SUBJ

(426) Gidar

tà *wl∂-m∂-nì*
PROG see-1PL-PL
'they see us' (Frajzyngier 2008: 247)

The other Chadic language with a LEX-headed AVC in my corpus is the nearby Hdi where the future in *dzà'á* appears in such a configuration:

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[35] Note that gender shows a split inflectional distribution with this same auxiliary.

(427) <u>Hdi</u> [Chadic; Cameroon, Nigeria]

    dzà'á   gùy-éy-mú   tá   vghá màxtsím
    FUT   meet-POT:OBJ-1PL   OBJ   body tomorrow
    'will we meet tomorrow?' (Frajzyngier and Shay 2002: 197)

7.6 'Tensed pronouns' in Chadic. Tensed pronouns or fused subject auxiliary forms–
which I call S/TAM/P morphs (for subject/tense-aspect-mood-polarity portmanteau
morphs)–are well attested in Chadic languages, a fact which reflects their status as
peripheral members of the Macro-Sudan Belt linguistic area where such formations are
not uncommon (see 12.6 below). Thus such forms are found embedded within AUX-
headed formations with Ø-marked lexical verbs in such West Chadic languages like
various Gùrdùŋ varieties, Ader Hausa, and Angas, or the Biu-Mandara Chadic language
Mbuko.

(428) SUBJ:AV   LV

(429) a. <u>Kùrukù Gùrdùŋ</u>   b. <u>Kùrukù Gùrdùŋ</u>

    àaŋ wari   *taa wari*
    1.   come   3.FUT come
    'I shall come'   'she shall come'
    (Haruna 2003: 14)

(430) a. <u>Gayàr Gùrdùŋ</u>   b. <u>Gayàr Gùrdùŋ</u>

    iĭŋ   wari   *tii wari*
    1.FUT come   3.FUT come
    'I shall come'   'she shall come'
    (Haruna 2003: 14)

(431) Ader Hausa

> *ani*   *kay*   *mà*   *innà*   cf. Standard Hausa   *naà* 2:POT
> 1:POT   take   to   my.mother
> 'I will take them to my mother' (Caron 1989: 138)

(432) a. Angas   b. Angas   c. Angas

> *ŋâ:*   *jì*   *ŋán*   *pò*   *jì*   *ŋá*   *mɛ́t*   *jì*
> 1.COMPL come   1.PRS PROG come   1.NPRS   FUT   come
> 'I have come'   'I am coming'   'I will come'
> (Burquest 1973/1980: 38/ANG 4)

(433) Mbuko

> *nī*   *zlāmbāl*
> 1.IMPF   throw
> 'I am throwing' (Gravina 2001: 7)

The following fused subject/auxiliary form in Polci is found in a split inflectional configuration, with subject marked on the auxiliary and object on the lexical verb. A very similar formation is seen in the Biu-Mandara language Mofu-Gudur.

(434) SUBJ:AV LV-OBJ

(435) Polci

> *Gǎrbà*   *kən*   *ndʒaŋ*   *slo:*   *wúɗe*   *kə*   *fŭ:-m*
> Garba   COP   couper   viande   ACC   INJ   2:AOR dire-1
> 'Si Garba égorge une bête, dis-le moi' (Caron 2008: 153)

(436) Mofu-Gudur

> *fá*   *tá-ka*   *ɗáf*
> PROG.3   prepare-2.IO   food
> 'she is preparing you food' (Pohlig 1992: 4)

In the Biu-Mandara Chadic language Merey, tense-marked pronouns or fused subject-auxiliary formations are used in combination with tense-marking on the lexical verb in a kind of split/doubled configuration in the present tense:

(437) SUBJ:AV<PRS>   LV-PRS

(438) Merey

     ne g-iye   *ma g-iye*   *na   zal-iye*   *mazal-iye*
     1.PRS do-PRS 3.PRS do-PRS 1.PRS call-PRS 3.PRS call-PRS
     'I do'   'he does'   'I call'   'he calls'
     (Gravina 2007: 8)

In the past tense on the other hand, there is a curious difference between first person forms and those of the third person. The first person forms appear with a tense-marked pronoun (or fused subject auxiliary) with an unmarked lexical verb in a synchronically bi-partite AUX-headed construction similar to the Angas, Gurduŋ or Ader Hausa forms above (430-432). Third person forms on the other hand appear in a univerbated formation.

(439) SUBJ:AV<PST>   LV

(440) a. Merey   b. Merey   c. Merey   d. Merey

     nage   *a-ge*   *na   zal*   *a-zal*
     1.PST do   3.PST-do   1.PST call   3.PST-call
     'I did'   'he did'   'I called'   'he called'
     (Gravina 2007: 8)

In Dott (also known as Zoɗi), the lexical verb encodes plurality of various sorts but combines with a tense-encoding pronoun:

(441) SUBJ:AV<TAM>   LV[-PL]

(442) a. <u>Dott/Zoɗi</u>

> *man   tʃì-ni gálba*
> 1PL.FUT eat-PL victory
> 'we will win' (Caron 2002: 164)

b. <u>Dott/Zoɗi</u>

> *ma   ɬəbə́t-ni   ú   lootí*
> 1PL.AOR migrate-PL   GEN   far
> 'we came from afar' (Caron 2002: 164)

Of all the Chadic languages in my corpus, the most developed system of such tense-marked pronouns or fused subject/auxiliary forms can be found in Guus (Sigidi) as described by Caron (2001), where ten different sets of these forms are attested.

(443) SUBJ-AV$_{<TAM>}$ LV

(444) a. <u>Guus (Sigidi)</u>

	AOR	SBJNCTV	IMM.PST	PFV	REC.PST	IRR	REM.PST
1	*ma*	*mə*	*maa*	*map*	*mam+H*	*mə́s*	*mə́sə̂n*
2	*ka*	*kə*	*kaa*	*kap*	*kam+H*	*kə́s*	*kə́sə̂n*
3	*tʃa*	*tʃì*	*tʃaa*	*tʃap*	*tʃam +H*	*tʃìs*	*tʃìsə̂n*
1pl	*-mà ?*	*mə̀*	*màà*	*màp*	*màm +H*	*mə̀s*	*mə̀sə̂n*
2pl	*-kà ?*	*kə̀*	*kàà*	*kàp*	*kàm +H*	*kə̀s*	*kə̀sə̂n*
3PL	*tʃà*	*tʃì*	*tʃàà*	*tʃàp*	*tʃàm+H*	*tʃìs*	*tʃìsə̂n*

   (Caron 2001: 8-9)

b. Guus (Sigidi)

	FUT	HAB	IPFV
1	mə +H	məka ~ mak	məkâp +H
2	kə +H	kəka ~ kak	kəkap +H
3	tʃì +H	tʃəka ~ tʃak	tʃíkap + H
1pl	mə̀ +H	məkà ~ màk	mə̀kàp +H
2pl	kə̀ +H	kəkà ~ kàk	kə̀kàp +H
3PL	tʃì +H	tʃəkà ~ tʃàk	tʃìkàp +H

  (Caron 2001: 8-9)

(445) Guus (Sigidi)

    ’n   ka   ɗuu   karáŋ tʃí   mə́ʃì
    if   2.IRR beat dog   3.FUT die
    ‘if you beat the dog, it will die’ (Caron 2001: 11)

7.7 Other fused formations in Chadic. The perfect form in Gidar is a clear example of fused double subject form, derived from a V-AUX structure. As these are found with intransitive stems, it is of course possible if not likely that these do not actually reflect doubled subject formations *per se*, but rather fused versions of the intransitive copy pronoun formations mentioned above.

(446) SUBJ-LV-SUBJ-TAM   < ?*SUBJ-LV SUBJ-AV

                or   < ?*SUBJ-LV-SUBJ$_{<ICP>}$ AV   (see (439) above)

(447) a. Gidar   b. Gidar

    à-nzá-n-kà   tə̀-nzá-t-kà
    3M-run-3M-PRF   3F-run-3F-PRF
    ‘he ran’   ‘she ran’
    (Frajzyngier 2008: 138)

c. Gidar

>   *nə̀-sá-w-kà*
>   1-stay-1-PRF
>   'I sat down'
>   (Frajzyngier 2008: 142)

For some speakers, the future in Chadic Gidar has fused, reflecting subject on the original auxiliary and object on the original lexical verb part of the AVC; this thus constitutes a fused split formation with transitives. An example of this was given in (228) above.

Finally, in the Biu-Mandara Chadic language Mbuko of Cameroon, perfect and anterior forms are complex verb forms derived from a fusing of a tense-marked pronoun or fused subject-auxiliary form with the lexical verb univerbated into a larger complex (449). Compare these with the progressive form in Mbuko which remains a synchronically bi-partite AVC, given in (443) above:

(448) SUBJ:AV$_{<TAM>}$-LV:/-TAM   < *SUBJ:AV$_{<TAM>}$LV:/-TAM

(449) a. Mbuko   b. Mbuko

>   *nə̀-zlàmbál*   *nə-zlāmbāl-ák*
>   1PRF/ANT-throw:ANT   1PRF/ANT-throw-PRF
>   'I threw'   I have thrown'
>   (Gravina 2001: 7)

AH	Kwami; Sayanci; Pero; Hausa
2x	Gidar; Gurduŋ; Muyang
split	Gidar
LH	Gidar
S/TAM/P	Gurduŋ; Polci; Ader Hausa, Angas, Mbuko, Merey, Mofu-Gudur
fAH	Pero
f2x	Gidar (V-AUX)
f-split	Gidar
f/fS/TAM/P	Merey (3.PST); Mbuko (PRF/ANT)
ICP	Gidar; Pero

Table 8: Patterns of inflection in AVCs in selected Chadic languages

8 Khoe

In this section I present a brief overview of AVCs in Khoe languages. Like most languages of Africa, AUX-headed formations predominate in Khoe languages, which show almost no other types of AVCs in my corpus. Note that the linear phrasal syntactic order of AVCs is usually V AUX in Khoe languages.

8.1 AUX-headed AVCs in Khoe. A typical AUX-headed configuration for Khoe languages can be seen in the perfect in Naro, where the lexical verb precedes the auxiliary and appears in the dependent 'junctural' form.

(450) LV-JNCT   SUBJ AV

(451) <u>Naro</u> (Khoisan, Central; Botswana)

ǂʼǖ.á dá hã̀   kháó sã́N.a.hã̌
eat-JNCT I PRF   you geruht.JNCT.PRF
'I have eaten'   'ihr habt geruht'
(Heine 1986: 15-16)

The perfect form may also optionally appear in a fused (perhaps rapid speech) form in Naro as well (see 8.3 below).

Two AUX-headed formations are found in the Khoe language ‖Ani marking prospective tense/aspect (one using an auxiliary meaning 'do' another 'want'); these both appear with a lexical verb in the -|*xɛ̀* dependent form.

(452) LV-INTAV-I/II-TA

(453) a. ‖Ani

> *tá-khòè*   *‖ga-khòè*   *‖'ó-|xɛ̀*   *hìn-à-tà*
> old-person   FEM-person   die-INT   PROSP-II-PST
> 'the old woman was about to die' (Heine 1999: 22)

b. ‖Ani

> *á-m̀*   *yì-má |q'áí-|xɛ̀*   *ka-tè*
> DEM-M:SG   tree-M:SG fall-INT   PROSP-PRS
> 'that tree is about to fall' (Heine 1999: 21)

Modern Khwe makes extensive use of V AUX auxiliary structures in a range of functions, e.g., progressive/present, terminative. The lexical verb in such formations appears in one of two or three construction-specific dependent or converb forms (e.g., -*kò, -ná*).

(454) LV-CV   AV-I/II-TA

(455) Modern Khwe

> *Kàcúpì*   *Rúndù*   *kà*   *‖'án-a-kò*   *tɛ́-ɛ̀-‖òè*
> K   R   LOC   live-DEP.II-CV   be-DEP.I-HAB
> 'Kacupi lives in Rundu' (Killian-Hatz 2008: 50)

Modern Khwe

xà-má   ũ̀-á-kò   xéri-na-xu-a-hã
DEM-3M hunt-DEP.II-CV   end-DEP.II-COMPL-II-PST.I
'he finished hunting' (Killian-Hatz 2008: 312)

(456) LV-DEP   AV-I/II-TA

(457) Modern Khwe

xà-má   thám̀ à ígàrá-ná   tέ-ὲ-tὲ
DEM-3M letter O write-DEP.II stay-DEP.I-PRS
'he is writing a letter' (Killian-Hatz 2008: 305)

8.2 LEX-headed AVCs in Khoe? The only example I have of a LEX-headed formation among Khoe languages is possibly the durative in !Ora, seen in the following examples:

(458) LV NEG-SUBJ   AV   or LV-NEG SUBJ AV

(459) a. !Ora (Khoe-Khoe)   b. !Ora (Khoe-Khoe)

ǂʔan tama-r hã   mu-tama   da   hã
know NEG-1   DUR   see-NEG   1PL   DUR
'ich wieß nicht'   'wir haben nicht gesehen'
(Vossen 1997: 190)

8.3 Fused AUX-headed formations in Khoe TAM marking. Most if not all Khoe varieties make extensive use of fused AVCs in their TAM systems. The auxiliary *–ha/-hằʔ-hà* encoding perfect (Kua, ‖Ani) or past (Buga-ǀAnda) is found in fused structures throughout the Khoe languages. Note the retention of the dependent marker on the original lexical verb part of the AVC in the complex fused verb forms.

(460) LV-JNCT-TA   < ?*LV-JNCT AV

(461) <u>Kua</u>

    tá kṹ.á.ha
    I go.JNCT.PRF
    'I went' (Heine 1986: 18)

(462) <u>//Ani</u> (C. Khoisan; Botswana)

    tí hĩ̀-á-hã̀
    I work-JNCT-PRF
    'I have worked' (Heine 1986: 18)

(463) <u>Buga-/Anda</u> (Kxoe)

    (tí) Ɂá-ná-hà-bé
    I   know-JNCT-PST-NEG
    'ich weiß (es) nicht' (Vossen 1997)

A selection of such forms that likely derive mainly from fused AVCs in a Khoe language can be seen in the following set from modern Khwe (464) from Killian-Hatz (2008).

(464) <u>Modern Khwe</u>

-tè PRS	*< té*	'stand, stay'
-nǂùè PROG	*< nǂũ̀ ~ nǂú*	'sit down'
-‖ò[è] HAB	*< ‖óé*	'lie, sleep'
-gòè FUT	*< koé*	'go towards'
-tà NR.PST	*< tàn*	'stand up'

    (Killian-Hatz 2008: 98-103)

8.4 Summary. Khoe languages are characterized by an almost exclusive use of AUX-headed auxiliary formations. The one example of a LEX-headed formation that I have may well be a reduced form of a typical AUX-headed formation in Khoe with the family-specific order of Verb Auxiliary that distinguish these languages both from the Bantu languages as well the Ju and Tuu family languages of southern Africa. The development of numerous tense/aspect/mood suffixes out of former AUX-headed AVCs of the V-AUX configuration further typifies Khoe verbal systems.

AH	Khwe; Naro; ‖Ani
LH	!Ora
fAH	Khwe; Buga-/Anda, ‖Ani, Cara, Naro, Kua

Table 9: Patterns of inflection in AVCs in Khoe languages

9 Nilotic

The Nilotic languages of Eastern Africa present a heterogeneous profile of auxiliary verb constructions from an inflectional perspective. Within Nilotic, the specific profiles exhibited differ somewhat across the recognized sub-groups of this family, so I will repeatedly make reference to Eastern Nilotic, Western Nilotic and Southern Nilotic languages in that order throughout the presentation below. The Nilotic languages according to this taxonomy in my corpus are listed in (465).

(465) Nilotic Languages represented in my AVC corpus

Eastern Nilotic	Western Nilotic	Southern Nilotic
Bari	Acholi	Nandi
Lotuko	Anywa	Datooga (see section 10 below)
Maasai	[A]Teso	
Turkana	Dho-Alur	
	Dholuo	
	Dinka	
	Karimojong	
	Lango	

9.1 AUX-headed AVCs in Nilotic. As in most African language families the AUX-headed pattern is common in the Eastern and Western subgroups of Nilotic. Nilotic languages always show AUX V order. The lexical verb may appear in an AUX-headed construction in a Ø-marked form as in East Nilotic Bari (467), or in a tonally-marked infinitive form in the prospective in West Nilotic Lango (469).

(466) SUBJ:TA-AV LV

(467) a. <u>Bari</u>

      nan   a-jo/a-je   kɔn
      I   1.PST-PLUP   do
      'I had done it' (Heine and Reh 1984: 127; Spagnolo 1933: 105)

   b. <u>Bari</u>

      nán   a-jé   tók
      I   1.PST-AUX   cut
      'I have finished cutting (it)' (Tucker and Bryan 1966: 482)

(468) SUBJ-AV   LV:INF

(469) <u>Lango</u>

      mítô   cὲm
      3:AUX:HAB   eat:INF
      'he's about to eat'   (Noonan 1992: 139)

Some AUX-headed formations may be marked by affixally realized dependent forms in Nilotic languages as well. This includes the following AVCs in the West Nilotic languages Lango and Dholuo or the East Nilotic language Lotuko.

(470) SUBJ-AV   LV-INF

(471) <u>Lango</u>

      à-bédò   lwòŋŋò   lócέ
      1-AUX:PRF   call:INF   man
      'I kept on calling the man' (Noonan 1992: 140)

(472) <u>Dholuo</u>

    wá-dhi nyiédho
    1PL-AUX milk:INF
    'we're going to milk' (Tucker/Creider 1994: 467)

(473) <u>Lotuko</u>

    a-ttu nɪ lɛtɛn
    1-FUT I   go:INF
    'I'll leave immediately'
    (Heine and Reh 1984: 132; Muratori 1938: 161ff.)

This basic AUX-headed pattern is found in East Nilotic Maasai, but here with the infinitive prefix *a-*.

(474) SUBJ-AV INF-LV

(475) <u>Maasai</u>

    ɛ-igil **a-*raŋ*   *aa-igil-a*   **a-*ar*
    3-AUX   **INF**-sing   3>1-AUX-PRF**INF**-beat
    's/he will sing again'   's/he beat me again'
    (Tucker and Mpaayei 1955: 99; Hamaya 1993: 5)

According to data in Hamaya (1993), there appear to be four classes of AVCs in Maasai. Two are classic AUX-headed configurations: class-I is in (475) above with a 'simple infinitive' (Hamaya 1993). Class-II on the other hand take lexical verbs in the so-called subjunctive infinitive form.

(476) SUBJ-AV INF-LV-INF

(477) <u>Maasai</u>

  i-ndim **ata-raŋ-a**
  2-AUX **INF:SBJNCTV**-sing-**SBJNCTV**
  'can you sing' (Tucker and Mpaayei 1955: 99; Hamaya 1993: 6)

Class-III takes clausal subject inflection in the form of a dummy third person singular marking, while the lexical verb is marked for logical subject. This is thus a LEX-headed formation deriving from an original split inflectional construction.

(478) 3-AV SUBJ-LV

(479) <u>Maasai</u>

  ɛ-tɔn *a-irrag*
  3-AUX 1-lie.down
  'I am still lying down'
  (Tucker and Mpaayei 1955: 101; Hamaya 1993: 7)

Class-IV is like this but the subject marking is preceded by the conjunctive prefix *n-*, i.e., it is overtly marked as non-finite:

(480) 3-AV CNJ-SUBJ-LV

(481) <u>Maasai</u>

  ɛ-ɲɔr *n-a-lɔ*
  3-AUX CONJ-1-go
  'I ought to go'
  (Tucker and Mpaayei 1955: 101; Hamaya 1993: 7)

Western Nilotic Anywa AVCs appear in an AUX V order as is ubiquitous in Nilotic. Some Anywa AVCs are AUX-headed inflectionally, with subject encoded on the auxiliary and the lexical verb appearing in a so-called 'infinite complement' form (Reh 1996: 264, 267).

(482) AV-SUBJ LV-INF

(483) a. <u>Anywa</u>   b. <u>Anywa</u>

    ɔ̀tɔ̄   y-áa   gὲεr-ɔ̀   *ɔ̀tɔ̄   pōʊt kàr-á   gὲεr-ɔ̀*
    house PRF:AUX-1   build-INF   house still   AUX:NEG.PST-1 build-INF
    'I have built a/the house'   'I have not yet built a/the house'
    (Reh 1996: 267)

   c. <u>Anywa</u>

    wὲelō   d-áa   góor-ó
    letter   AUX:DEONT-1   write-INF
    'I should write a letter' (Reh 1996: 267)

Other AVCs appear with the lexical verb in the verbal noun form in Anywa in a different
AUX-headed configuration.

(484) AV-SUBJ LV\<VN>

(485) <u>Anywa</u>

    wā-cΛggó   kῑ   mὲέŋ
    1PL.EXCL-AUX OBLQ dance:VN
    'we started to dance' (Reh 1996: 266)

9.2 Doubled inflection in Nilotic AVCs. Doubled inflection is also found in AVCs in
Turkana and Ateso and also in Lango, which Dimmendaal (2001b: 105) calls a Western
Niloticized Teso-Turkana language. For example, the following AVC in Turkana is of
this structure. As discussed above, Nilotic languages with doubled inflection generally
show a dependent form of the subject marker on the lexical verb.

(486) SUBJ-AV SUBJ\<DEP>-LV

(487) a. <u>Turkana</u> (E. Nilotic, Nilo-Saharan, Kenya)

      kɨ̀-*pon-ɨ̀*   **atɔ**-*mat-à*
      1PL-go-A   1PL.CONSEC-drink-PL
      'we shall drink' (Dimmendaal 1983: 136)

    b. <u>Turkana</u>

      à-ròko   ` *ayɔŋ* `   *a-ye-ì*
      1-still   I   1-be-A
      'I am still there' (Dimmendaal 1983: 138)

As already exemplified above in (202), Eastern Nilotic (A)Teso represents a paradigm example of this Nilotic type of doubled subject pattern, with the subject marker on the lexical verb being of the optative/subjunctive or modally dependent type:

(488) SUBJ-AV SUBJ_{<SBJNCTV>}-LV

(489) a. [A]Teso

      e-roko   *ke-buno*
      3-NEG   3SBJNCTV-come
      'he has not yet come'
      (Heine and Reh 1984: 105; Hilders and Lawrance 1956: 46)

    b. [A]Teso

      a-bu *ko-duk*
      2-PST 2SBJNCTV-build
      'you built'
      (Heine and Reh 1984: 185; Hilders and Lawrance 1956: 29-30)

Subject NPs may come between the sentence-initial auxiliary and the lexical verb in (A)Teso doubly-inflected AVCs:

(490) [A]Teso

> *a-bu   etelepat ko-lot   ore   bian*
> he-AUX.PST boy   3SBJNCTV-go home yesterday
> 'the boy went home yesterday'
> (Heine and Reh 1984: 185; Hilders and Lawrance 1956)

In the Western Nilotic language Lango, a true doubled formation is attested. Here the lexical verb receives the same kind of inflection as the auxiliary and is not marked as overtly dependent as in Turkana or (A)Teso.

(491) SUBJ-AV[:TA]   SUBJ-LV:TA

(492) Lango

> *án à-wót-ó   à-lób-ɔ̀   dákô*
> I   1-AUX-PRF   1-follow-PRF woman
> 'I followed the woman' (Noonan 1992: 211)

9.3 Split inflection in Nilotic AVCs. Split inflection *per se* is highly marked in Nilotic. The only secure example of this type of pattern I have in my corpus from a Nilotic language is the negative split pattern seen in the Western Nilotic langue Dhǫ́-Alúr̀. In this split formation in Dhó-Alúr̀, there is AUX V order–as all AVCs in Nilotic languages are–with subject marking on the capabilitive auxiliary but negative marked on the lexical verb in the following construction:

(493) SUBJ-AV LV-NEG

(494) a. Dhó-Alúr̀

> *é-cópó bìn-ɔ̀ŋgó   íbí-còpò   cìdh-ɔ̀ŋgó*
> 3-CAP:3 come-NEG   2-CAP:2   go-NEG
> 'he cannot come'   'you cannot go'
> (Knappert 1963: 126)

9.4 Split/doubled inflection in Nilotic AVCs. Split/doubled inflection is also not overly common in my corpus of Nilotic AVCs, although one language, Lango, has two separate split doubled patterns. In one Lango AVC, there is a Bantu-like formation with double subject marking, but object encoded on the auxiliary:

(495) SUBJ-AV-TA   SUBJ-LV-TA-OBJ

(496) <u>Lango</u>

      màc   dòŋ   ò-tyèk-ò   ò-nèk-ò-gí
      fire   then   3:AUX:PRF   3:kill:PRF:3PL.OBJ
      'and so the fire killed them'
      (Noonan 1992: 298)

Lango has another split doubled pattern with the negative auxiliary *–pe* and some other auxiliaries like *bín* in (498a) that rather show a split/doubled pattern with the encoding of perfect limited to the lexical verb, but subject being doubly marked. This is another Bantu-esque structure in this Nilotic language.

(497) SUBJ-AV SUBJ-LV-TA

(498) a. <u>Lango</u>

      án   àbín   àkwálò   gwènò
      I   1:AUX 1:steal:PRF   chicken
      'I did steal the chicken' (Noonan 1992: 139)

    b. <u>Lango</u>

      án   à-pé   à-wótò   Kàmpálà
      I   1-NEG   1-go:PRF   Kampala
      'I didn't go to Kampala' (Noonan 1992: 142)

c. <u>Lango</u>

  án à-pe à-cámò réc
  I 1-NEG 1-eat:PRF fish
  'I didn't eat the fish' (Noonan 1992: 143)

9.5 LEX-headed AVCs in Nilotic. Unlike most genetic units of Africa, LEX-headed formations are relatively common in Nilotic languages. A tonally inflected LEX-headed form is found in the Karimojong negative past construction.

(499) AV$_{:<TAM/POL>}$ SUBJ-LV

(500) <u>Karimojong</u>

  pá á-dɔŋi áᵉɔ̀ŋ
  NEG.PST 1-pinch 1SG
  'I did not pinch' (Dryer 2009: 333; Novelli 1985: 442)

In a fused form, LEX-headed AVCs are found in Kalenjin (Southern Nilotic) languages like Nandi, where lexical verb and auxiliary have become univerbated into a complex verbal form.

(501) TA-SUBJ-LV-(*é*) < *AV SUBJ-LV(-*é*)

(502) a. <u>Nandi</u>   b. <u>Nandi</u>

  mâ-a:-kas   *mâ-a:-kás-é*
  FUT-1-hear   FUT-1-hear-ASP
  'I will hear it'   'I will be listening'
  (Creider 1989: 112)

(503) <u>Nandi</u>

     tà-a:-kás-é
     AUX-1-listen-ASP
     'I'm still listening' (Creider and Tapsubei Creider 1989: 111)

(504) <u>Nandi</u>

     ká-tâ-a:-kás-é
     PST-AUX-1-listen-ASP
     'I have just listened' (Creider and Tapsubei Creider 1989: 112)

A similar form is seen in the negative non-past form in Karimojong as well; compare this with the still synchronically bi-partite LEX-headed AVC in the negative past in Karimojong (506).

(505) NEG.TA-SUBJ-LV   < *NEG.AV   SUBJ-LV

(506) <u>Karimojong</u>

     ɲ-á-dɔŋi   *á^{e}ɔ̀ŋ*
     NEG.NPST-1-pinch   1SG
     'I am not pinching' (Dryer 2009: 333; Novelli 1985: 442)

In one common type of LEX-headed formation in the synchronic grammars of Nilotic languages there is transparent internal structure historically, with so-called 'clausal subject' marking, in which a bi-clausal structure has been reanalyzed in the guise of a LEX-headed AVC. This type of formation is used with a lexical verb encoding the logical subject of the sentence. Examples of this were given for Maasai in (479, 481). Other AVCs of this type can be found in such Nilotic languages as Turkana (508), Acholi (510, repeating 208), and Lango (512).

(507) AV$_{<*3\text{-}[TA]\text{-}AV>}$ SUBJ-TA-LV

(508) a. <u>Turkana</u>

       è-ìtem-o-kin-ò   i-yoŋ `i-los-ì-o    tɔ̀kɔ̀na`
       3-AUX-EPIPAT-DAT-VB you   2-go-ASP-VB now
       'you must go now' (Dimmendaal 1983: 162)

    b. <u>Turkana</u>

       ɛ̀-à-pɔtʊ̀̀   tɔ-tɔ-k-a`
       3-PST-AUX   3-dead-PL-PL
       'then they died' (Dimmendaal 1983: 175)

(509) AV_{<*3-AV-TA>}   SUBJ-LV

(510) <u>Acholi</u>

       in   omyero i-cam   mot
       you   should 2-eat   slowly
       'you should eat slowly' (Heine 1993: 41)
       [*omyero* < *o-myero 3-be.suitable/fit.PRF]

Note that the second Lango form below shows also tense/aspect marking and object-encoding on the lexical verb.

(511) AV_{<*3-[TA]-AV>}   SUBJ-LV[-TA-OBJ]

(512) a. <u>Lango</u>   b. <u>Lango</u>

       ònwòŋò   lócɔ̀ àcɛ̀m   án ònwòŋò   àbwôtɛ́
       3:AUX:PRF   man   3:eat:PROG   I   3:AUX:PRF   1:deceive:PRF:3
       'a man was eating'   'I had deceived him'
       (Noonan 1992: 138)

9.6 Tensed pronouns in Nilotic.   Among the simplest of fused subject/TAM auxiliary formations is one found in the Nilotic language Dinka. In this language the order is AUX V as is typical of Nilotic languages, but the auxiliary encodes TAM and referent

properties. Note in this regard the following two examples, both with a first person element fused into the auxiliary.

(513) AV:SUBJ/OBJLV

(514) a. <u>Dinka</u>   b. <u>Dinka</u>

    yin acaa   kony apɛi   *wamuth   aca   tiŋ*
    you INDIC:PST:1OBJ help   very   your.brother INDIC:PST:1   see
    'you have helped me very much'   'I saw your brother
    (Hieda 1991: 102-103; Nebel 1948: 21)

In one example (514a), this element refers to the logical subject and in the other, the object. The lexical verb in both cases appears in a Ø-marked form. This auxiliary element is thus embedded within an AUX-headed structure in Dinka. Otherwise Nilotic languages in my corpus do not used such subject/TAM/polarity pronouns.

9.7 More on fused AVC forms in Nilotic. Variation in cognate constructions may be seen in Lango and Acholi, two closely related Western Nilotic languages (indeed these are in many respects basically dialects of a single language). In Lango, the element is a synchronic bi-partite AVC with a full form of the auxiliary identical to its lexical verb source. In Acholi on the other hand, univerbation has occurred and the auxiliary has been reduced to its first syllable. In other words, Lango has an AUX-headed future AVC and Acholi a fused future form derived from it. In both instances, the auxiliary encodes future tense, and derives from a motion lexical verb meaning 'go' or 'come'.

(515) SUBJ-AV LV:INF   (516) SUBJ-TA-LV[:INF] <*SUBJ-AV LV:INF

(517) <u>Lango</u>   (518) <u>Acholi</u>

    an a-bino   cammo   *an a-bi-camo*
    I   1-FUT   eat:INF   I 1-FUT-eat
    'I will eat'   'I will eat'
    (Heine and Reh 1984: 92; Bavin 1983: 151)

Dhǫ́-Alúr̀ shows a fused double subject formation in the past progressive (521), which contrasts with the fused AUX-headed structure of the present progressive (522) note also

the tonal difference between the two forms. As alluded to previously, tonologically encoded features in verb 'morphology' are common in Nilotic languages.

(519) SUBJ-TA-LV-INDEP   (520) SUBJ-TA-SUBJ-LV-INDEP
    < *SUBJ-AV LV-INDEP   < *SUBJ-AV SUBJ-LV-INDEP

(521) <u>Dhó-Alúr̀</u>   (522) <u>Dhó-Alúr</u>

    á-bè-lwóŋ-o   *á-bé[d]-á-lwóŋ-ò*
    1-PRS.PROG-call-INDEP   1-PST.PROG-1-call-INDEP
    'I am calling'   'I was calling'
    (Knappert 1963: 111)

AH	Bari; Turkana; Maasai; Lotuko; Lango; Dholuo; Anywa
2x+DEP	Turkana; (A)Teso
2x	Lango
split	Dho-Alur
S/2	Lango
LH	Maasai; Turkana; Acholi; Lango; Karimojong
S/TAM/P	Dinka?
fAH	Acholi
f2x	Dho-Alur; (+Datooga)
fLH	Nandi; Karimojong; (+Datooga)

Table 10: Patterns of inflection in AVCs in Nilotic languages

9.8 Summary. Nilotic languages are characterized by the relatively common use of LEX-headed AVCs and fused structures that derive from these. AUX-headed structures are not uncommon, nor are doubled inflectional patterns. Complex fused verb forms deriving from these are relatively restricted, though attested, e.g., fused AUX-headed forms are found in Acholi and fused doubled ones in Dho-Alur. Split/Doubled formations are highly marked for Nilotic, occuring only in two different guises in my corpus in Lango.

Within Nilotic, there are distinct genetic profiles for each of the three recognized subgroups of Nilotic, viz. Eastern, Western, and Southern. Southern Nilotic is more synthetic than the other two groups; in addition to fused doubled formations in Datooga (which is covered in section 10 below in the discussion of the languages of the Tanzanian Rift Valley), fused LEX-headed future formations are found in both Southern Nilotic Nandi and Datooga. Only Karimojong has reduced uninflected auxiliaries in a LEX-headed configuration among Western and Eastern Nilotic languages. Other languages of these two groups make use of reanalyzed auxiliaries with third singular 'clausal' subject marking now functioning auxiliaries in LEX-headed AVCs, e.g., in Acholi or Turkana. Among Western Nilotic languages, only Lango and Dho-Alur has doubled subject formations (and complex verb forms derived form these).[36] The Lango doubled subject inflection differs from those of the Eastern Nilotic languages in that the latter use modal dependent subject markers on the lexical verbs in doubly inflected AVCs, not simple copies of the subject inflection as is attested in Lango. A breakdown of the patterns of inflection by sub-group within Nilotic is offered in Table 11.

Eastern Nilotic	Aux V	$2x^{+DEP}$	Maasai, Turkana, Teso
		AH	Bari, Lotuko, Maasai, Turkana
		LH	Maasai, Turkana
Western Nilotic	Aux V	AH	Dholuo, Lango, Anywa
		2x	Lango
		fAH	Acholi
		split	Dho-Alur
		S/2	Lango
		S/TAM/P	Dinka
		LH	Acholi; Lango; Karimojong
		fLH	Karimojong
Southern Nilotic	Aux V	fLH	Nandi; Datooga
		f2x	Datooga

Table 11: Eastern, Western and Southern Nilotic AVCs

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[36] Note that Lango's status as Western Nilotic language has in fact been questioned by some researchers, e.g., Dimmendaal (2001: 105) who considers Lango not to be West Nilotic proper but rather a West Niloticized Teso-Turkana language.

There is hardly one mind about the nature or significance of the apparent distribution of linguistic characteristics among African languages of different regions, nor about the best way to interpret the areal dynamics that are/have been/may be/might have been at play, and thus the interpretation of the linguistic geography of various features across the languages of the African continent.

In the following section, I briefly examine the distribution of patterns of inflection in auxiliary verb constructions among the languages of various regions, linguistic areas or convergence zones of Africa, offering some thoughts, where appropriate, on preliminary areal profiles of the AVCs of the languages of these regions. These areas include three detailed in recent work in African comparative linguistics and linguistic geography (Heine and Nurse (eds.) 2008), the Tanzanian Rift Valley (section 10), 'Ethiopia' (section 11), and the Macro-Sudan Belt (section 12). As alluded to in Güldemann (2008), the area to the north of the Macro-Sudan Belt is occupied by a spread zone (in the Nichols (1992) sense) called here 'Sahara', which is examined in section 13. Each of these areas are best construed as spread zones. Underlying each of these spread zones, or, on occasion, contiguous to them, there are also linguistic residual zones (fragmentation zones) or micro-pockets that constitute refuges of linguistic diversity. A residual or fragmentation zone may stand out from the surrounding spread zones in the areal patterning of certain linguistic features. One such residual zone is occupied by languages representing the many families of the Nuba Hills region, discussed in section 14.

10 Tanzanian Rift Valley

The languages of the Tanzanian Rift Valley constitute a spread zone of probably relatively shallow time depth. Within this spread zone, languages of the S. Cushitic, S. Nilotic, and Bantu families have interacted with Sandawe and Hadza, the latter two of which represent the traces of the southernmost extension of a residual or fragmentation zone that stretch from the modern Ethiopia-Sudan border region through a strip in the highland parts of Uganda and Kenya to Tanzania, where various remnant families generally attributed to Nilo-Saharan like Gumuz, Shabo, Kuliak or Jebel languages may be found.[37] In the northern regions, this fragmentation zone has been overlain by the

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[37] There is thus a belt of Eastern Africa stretching from Tanzania to central Sudan where pockets of diverse linguistic group are found, whose languages exhibit different profiles. These relics of perhaps once more widespread diversity include Hadza, Sandawe, Kuliak

Ethiopian spread zone (see section 11 below), in the middle by a northeastern part of the Narrow Bantu spread zone (see section 6 above) and the Nilotic expansion zone (see 9 above), and in the southern area by the Tanzanian Rift Valley spread zone.

10.1 AUX-headed AVCs in the Tanzanian Rift Valley. One of the characteristic features of the Tanzanian Rift Valley, is the relative paucity of AUX-headed formations that typify languages of the area. As is typical in a V AUX language, AUX-headed formations when found appear with the lexical verb in some kind dependent 'converb' or 'participle' form (called here the 'construct case') followed by an inflected auxiliary, as in the following Iraqw form.

(523) LV-CONSTR   AV-SUBJ

(524) <u>Iraqw</u>

    makay   i   ma'á　　　*wahúngw*　　　*ay-á'*
    animals   SUBJ.3 water:CONSTR   drinking:CONSTR   AUX$_{<go>}$:3-PL
    'the animals will drink water' (Kießling et al. 2008: 219)

In Hadza, the negative element *'akwe-* functions like an auxiliary verb in an AUX-headed configuration, here also incorporating subject markers that are themselves probably historically fused subject/TAM-auxiliary/polarity forms (see 10.6 below). This negative auxiliary may appear in AUX-headed formations in the AUX V order that is common in Hadza, with a following Ø-marked lexical verb.

(525) AV-SUBJ   LV

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languages, Koman languages (+ Gumuz), Surmic languages, Eastern Jebel languages, Shabo, Ongota, and the languages of the Nuba Hills. All of these genetic units are represented in the database and appear in appropriate sections throughout (e.g. Sandawe and Hadza in this section and those of the Nuba Hills in section 14), but the remainder are not explicitly discussed here *per se* as a whole. In the middle region the remnant genetic unit *par excellence* is Kuliak of Uganda. Data from the Kuliak languages Soo (Tepes), Ik and Nyang'i are mentioned sporadically throughout previous sections where relevant.

(526) Hadza

    'akwe-ne'e   *haka*
    NEG-1.FUT/COND   go
    'I wouldn't go' (Sands to appear-a: 6)

10.2 Doubled subject inflection in AVCs in the Tanzanian Rift Valley. Doubled subject formations among the languages of the Tanzanian Rift Valley are found in Cushitic Alagwa, with subject on both the auxiliary and the lexical verb. Note the AUX V order in Alagwa that may reflect Bantu influence in this language.

(527) AV-SUBJ   LV-SUBJ

(528) Alagwa

    l-aa   *leesá tsaahh-at*   *raa'amu-w-ós*   *k-od*
    OPT-S1/2 at.first understand-2 song-M-3SG.POSS   ANIM.M-D
    'you first have to understand his song' (Kießling 2007: 191)

South Nilotic Datooga shows a Nilotic-type formation with doubled subject marking with the second subject marker appearing on the lexical verb in the modally dependent subjunctive form.

(529) (SUBJ)-AV-SUBJ   SUBJ_{SBJNCTV}-LV

(530) Datooga

    qáa-mǿós-cí   *dá-lâc*   *fùaandá*   *qùuwâaŋdạ*
    [DECL:?]1SG-can-1SG 1SG:SBJNCTV-cut   string:CONSTR   bow
    'I can cut the bow-string' (Kießling et al. 2008: 213)

Hadza also makes use of what I have called fused/fused formations in a doubled configuration in the following negative AVCs. In both, the lexical verb appears in the fused first singular present/future form, while the the auxiliary verb appears with the fused subject/auxiliary form appropriate to the meaning of the larger construction (e.g., future or past).

(531) AV-SUBJ   LV-SUBJ

(532) a. Hadza

   'akwe-ne baha-ta hako kazi
   NEG-1.FUT finish-1.FUT/PRS this work
   'I am not finishing this work' (Sands to appear-a: 6)

  b. Hadza

   'akwa-na baha-ta   hako kazi
   NEG-1.PST finish-1.FUT/PRS this work
   'I have not finished this work' (Sands to appear-a: 6)

10.3 Split inflection in Tanzanian Rift Valley AVCs. Split inflectional patterns of various sorts are found in auxiliary verb constructions in the languages of the Tanzanian Rift Valley. A highly marked pattern is found in S. Cushitic languages like Iraqw and Burunge, where object is encoded on the auxiliary and subject on the lexical verb. Note also the AUX V order in these constructions that is atypical of Central, Eastern and Northern Cushitic languages.

(533) OBJ-AV LV:PL-SUBJ

(534) Iraqw

   ʔaténtʃupa a-na   hats'maamíis
   I bottle OBJ:3:F.SG-PST fill:PL:1SG.PRF
   'I filled the bottles' (Kießling et al. 2008: 207)

The Bantu language Mbugwe shows the more typical reverse situation with subject encoded on the auxiliary and object on the lexical verb, with the same order of realization in the linear syntax of argument encoding elements as in the Cushitic languages above. However, the order of elements in the phrase is the opposite, and this Bantu language shows the highly un-Bantu order of V AUX in this AVC. Although given in (292), I offer this example from Mbugwe again in (536).

(535) OBJ-LV   SUBJ-AV

(536) <u>Mbugwe</u>

> *Ora   ko-kéndé   wári*
> 15:eat   1PL-PRS.PROG   ugali
> 'we are eating food' (Kießling et al. 2008: 219)

Hadza sentences are characterized by the use of a[n often] clause-initial consecutive or narrative auxiliary particle that encodes the subject and often the tense/aspect/mood of the clause. This is frequently the only means of encoding the properties of arguments functioning as subjects, with object properties encoded by suffixes in the lexical verb. This thus reflects a kind of split inflectional pattern in a characteristically Hadza configuration.

(537) AV:TA:SUBJ LV-OBJ

(538) a. <u>Hadza</u>

> *yame   lutl'u-ta   yame   se-ke-me*
> NAR.PST.3FPL   collect-3FSG.OBJ NAR.PST.3FPL   eat-DISTR-3FPL?
>
> *ma-mako-ma*
> EMPH-boil-3MSG.OBL
>
> 'they collected it up and boiled it up to eat'
> (Sands to appear-a: 2)

b. <u>Hadza</u>

> *kaka   wech'e-ya*   *kaka   hama-sa*
> NAR.PST.3MSG   lack-3MSG.OBJ   NAR.PST.3MSG   sit-3FSG.OBL
> 'he missed them'   'he waited for them'
> (Sands to appear-a: 3)

10.4 Split/Doubled inflectional patterns in the Tanzanian Rift Valley.
Unsurprisingly, Bantu languages of the Tanzanian Rift Valley linguistic area show split-doubled inflectional patterns of various types in AVCs, as these particular configurations are family-wide characteristics of Bantu. Subject is doubly marked in the following forms in Nyaturu with aspect (540) or negative (542) marked on the lexical verb–both characteristic Bantu patterns (see section 6.4 above).

(539) SUBJ-AV   SUBJ-ASP-LV:*a*

(540) <u>Nyaturu</u>

    ní   *náa*   *a-kíɪ*   *u-qʊ-righɪʁya*
    SUBORDINATE   FAR.PST   3-PRSTV   3-PROG-speak
    'while she was still speaking... '
    (Nurse 2000a: 523; Kießling et al. 2008: 198)

(541) SUBJ-AV   SUBJ-NEG-LV

(542) <u>Nyaturu</u>

    ní   *ɪ-kíɪ*   *njololo* *í-na-kʊnkʊa*
    SUBORDINATE   9-PRSTV   cock   9-NEG-crow
    'when the cock has not yet crowed... '
    (Nurse 2000a: 523; Kießling et al. 2008: 198; Olson 1964)

In Sukuma, the lexical verb appears in a dependent form in some doubly subject marked AVCs marked by the prefix *–líi*, and tense is encoded on the auxiliary.

(543) SUBJ-TA-AV [SUBJ-TA-AV]   SUBJ-DEP-LV:*a*

(544) <u>Sukuma</u>

    d-aa-lí   *d-áá-bííza* *dʊ-líí-gʊ́la*
    1PL-PST-AUX   1PL-PST-AUX 1PL-DEP-buy:FV
    'we were just buying... ' (Kießling et al. 2008: 201)

Kimbu shows a similar pattern, with aspect encoded on the auxiliary, doubled subject marking and a dependent marked lexical verb, here using the familiar Bantu infinitive prefix.

(545) SUBJ-TA-AV   SUBJ-INF-LV

(546) <u>Kimbu</u>

     xʊ-xa≠lɪ##   *xʊ-xʊ≠gula*
     1PL-still-AUX   1PL-INF-buy:FV
     'we are still buying' (Nurse 2003: 91)

In Cushitic Burunge, the original auxiliary has eroded to zero in the following formation, leaving only inflectional morphology of the following structure, a highly-reduced kind of split/doubled pattern:

(547) SUBJ-OBJ LV:PL-SUBJ

(548) <u>Burunge</u>

     dandiray   *ha-gi*   *tʉ'aaq-an-ą̇*   *xa'i*
     we   S1/2-O.3PL   cut.down:PL-1PL-IMPF trees
     'we cut down trees' (Kießling et al. 2008: 207)

10.5 LEX-headed formations in the Tanzanian Rift Valley. Sandawe makes use of a LEX-headed completive formation that almost assuredly derived historically from a serial verb form (see Eaton 2003 for a different view). A final auxiliary element meaning 'finish' appears after the inflected auxiliary (here appearing in the connective form, marking it as part of a larger structure, originally at least).

(549) LV-SUBJ:TA-CNNCTV   AV

(550) <u>Sandawe</u>

    tʰímé-sà-~´   ↓*tlèmsé*
    cook-3FSG.RLS.PGN-CNNCTV   finish
    'she finished cooking' (Eaton 2003: ex. 7)

In the following two variant forms of the negative past progressive in Sandawe on the other hand, which differ as to whether they show AUX V (a) or V AUX (b) order, nevertheless have the same inflectional pattern: LEX-headed, with the auxiliary marked as 'dependent' by the connective marker.

(551) AV-CNNCTV LV-SUBJ:TA-NEG   LV-SUBJ:TA-NEG   AV-CNNCTV

(552) a. <u>Sandawe</u>

    íé-´~   *tʰímé-tʃu*
    AUX-CNNCTV   cook:3FSG.IRR.PGN-NEG
    'she was not cooking' (Eaton 2003: ex. 16)

   b. <u>Sandawe</u>

    ⁿèmé-tʃù   *íé-´~*
    sweep:3FSG.IRR.PGN-NEG AUX-CNNCTV
    'she was not sweeping' (Eaton 2003: ex. 17)

10.6 Fused forms deriving from AVCs in languages of the Tanzanian Rift Valley. The future in Datooga appears to be a fused LEX-headed formation, such as is found in its sister language Nandi. It may represent a development that is eroded from an originally doubly subject inflected form, later fused. The use of the subjunctive subject marker suggests that although probably deriving directly from a fusing of a LEX-headed formation this formation itself may well have originally derived from a doubly-inflected formation in pre-Datooga.

(553) TA-SUBJ$_{<SBJNCTV>}$-LV <?*   AV SUBJ$_{<SBJNCTV>}$-LV
                            <??* SUBJ-AV SUBJ$_{<SBJNCTV>}$-LV

(554) <u>Datooga</u>

> *gày-dá-lâc   fùáandá   qùuwâaŋdą*
> FUT-1SBJNCTV-cut   string:CONSTR   bow
> 'I will cut the bow string' (Kießling et al. 2008: 213)

Indeed fused forms with doubled subject are found in Datooga, but forms with the *dá*-first singular subjunctive marker are otherwise primarily found in synchronically bipartite doubly subject inflected AVCs, not complex verb forms derived from fused AVCs. The perfect in Datooga is an example of one such fused double subject form.

(555) TA-SUBJ-LV-SUBJ   < ?*AV-SUBJLV-SUBJ

(556) <u>Gisamjanga Daatoga</u>

> *n-áa-ŋù-cį*
> PRF-1SG-pierce-1SG
> 'I have pierced him (once)' (Kießling et al. 2008: 208)

(557) <u>Datooga</u>

> *n-áa-làj-ì fùáandá   qùuwâaŋdą*
> PRF-1-cut-1 string:CONSTR   bow
> 'I have cut the bow string' (Kießling et al. 2008: 213)

Both Hadza and Sandawe reflect complex verb forms that appear to derive from earlier auxiliary structures with V-AUX order. Further, such auxiliaries themselves appear to encode subject properties simultaneously with TAM categories. Note that similar formations are common in Cushitic languages of the Ethiopia area (section 11). Examples of such fused/fused formations in Sandawe include the following:

(558) LV(-TA)-SUBJ:TAM   LV-SUBJ:TAM   < ?*LV(-TA) AV-SUBJ

(559) a. <u>Sandawe</u>   b. <u>Sandawe</u>

    tʰímé-sà   *tʰímè-`-sṳ̀*
    cook-3F.RLS   cook-FUT-3F.IRR
    'she cooks/cooked'   'she will cook'
    (Eaton 2003)

While such formations appear to be an integral part of Hadza verbal structure, they appear to reflect a phrasal syntax of AVCs from an earlier stage of the language that differs from that which predominates today. Note that these elements are enclitic, or suffixed, to the object encoding lexical verb in contemporary Hadza. The simplest such formation is seen in the following Hadza forms:

(560) LV-SUBJ:TA < ?*LV AV:SUBJ

(561) <u>Hadza</u>

    puhlu-na'a *hi!'e-na'a*   *Amelika-na*
    arrive-1.PST come.from-1.PST America-LOC
    'I arrived here [coming] from America' (Sands to appear-b: 16)

The lexical verb may also appear in a mood- or aspect-marked formation, to which the subject/TAM-encoding auxiliary encliticized or fused, as in the following structures:

(562) LV-TAM-SUBJ:TA< ?*LV-TAM AV:SUBJ

(563) a. <u>Hadza</u>   b. <u>Hadza</u>

    chi-ni-ne'e   *dza-ne-ya*
    run-NEC-1.FUT   come-NEC-3MSG.PRS
    'I must run'   'he must come'

c. Hadza

>   *dza-ne-ya*
>   come-INCH-3MSG.PRS
>   'he is coming, he is on his way'
>   (Sands to appear-b: 12)

Objects or obliques may also be encoded on the lexical verb preceding the incorporated subject-marked auxiliary in Hadza as well:

(564) LV-OBL/OBJ-SUBJ:TA   < ?*LV-OBL/OBJAV:SUBJ

(565) a. Hadza

>   *Boni-ko   kwase-ta-kwa   akwiti-ko*
>   Bonny-F.SG   hit-3FSG.OBJ-3FSG.PST   woman-F.SG
>   Bonny hit the woman (Sands to appear-a: 1)

b. Hadza

>   *mu-musi-kwa-tita   'ono*
>   EMPH-annoy-1SG.OBL-2SG.PRS   I[MSG]
>   'you really annoy me' (Sands to appear-a: 3)

c. Hadza

>   *'ono   tl'impi-'a-na'a   hich'i!*
>   I[MSG]   step.in-3MSG.OBJ-1.PST   shit
>   'I stepped in shit!' (Sands to appear-a: 3)

10.7 Summary.   The languages of the Tanzanian Rift Valley share numerous phonological and morphosyntactic features that establish this as a type of linguistic area in Africa (Kießling et al. 2008). From the perspective of the inflectional patterns and structure of AVCs among the languages of the region, no profile *per se* emerges. Many of the languages of the region reflect their genetic affiliation in the types of structures attested, although the exact realization may reflect strong areal tendencies (e.g. V AUX

order in Mbugwe). Thus except for an unusual formation in Burunge, the Bantu languages of the area are the only ones where split/doubled patterns occur, while only South Nilotic Datooga shows fused LEX-headed formations, as well as modal dependent subject marking in doubly inflected forms that are typical of Nilotic, and only Iraqw has AUX-headed ones of the familiar type. Sandawe shows more of the areal profile in general, but both Sandawe and Hadza show significant divergence from areal norms in their auxiliary structures. The presence of fused complex verb forms incorporating fused subject-encoding auxiliaries that reflect an original V-AUX structure in both Sandawe and Hadza rather unite these two languages with some of the languages spoken further to the north in the Ethiopia area (see section 11).

AH	Iraqw
2x	Alagwa; Datooga
split	Burunge; Hadza; Mbugwe
S/2	Nyaturu; Sukuma; Kimbu; Burunge
LH	Sandawe
f2x	Datooga
fLH	Datooga
f/fS/TAM/P	Sandawe; Hadza

Table 12: Patterns of inflection in languages of the Tanzanian Rift Valley

11 'Ethiopia'

Perhaps the best-known linguistic area in Africa that I briefly overview here with respect to patterns of inflection in auxiliary verb constructions is 'Ethiopia', which includes in addition to the modern-day state of Ethiopia, the country of Eritrea and some adjacent parts of Sudan and Somalia. The stereotypic core of the languages of this region belong to several sub-groups of Afroasiatic (viz. Omotic (Bender 2000, 2003), Cushitic (Tucker 1967, Voigt 1985, 1987) and Ethiopic Semitic), which is one of the reasons people like Tosco (2000) have debunked the concept of the Ethiopian linguistic area. However, many features of this areal-cum-Afroasiatic profile are found in prossibly unrelated languages, such as the still unclassified Ongota (Fleming 2006), and definitively unrelated genetic units that are conventionally classified as branches of the 'Nilo-Saharan' language phylum, peripherally belong to this continuum as well, e.g., Nera

(Thompson 1976a), Kunama (Tucker & Bryan 1966, Thompson 1989, Bender 1996), Gumuz (Bender 1979, Uzar 1989) and Berta (Tiulzi et al. 1976).

With respect to AVCs, the most salient and obvious difference is the dominance of V AUX order in these languages of 'Ethiopia'. Other languages of the region, on the other hand, show AUX V order typically (see section 14 below).[38]

11.1 AUX-headed AVCs in languages of 'Ethiopia.' AUX-headed formations are somewhat common among the languages of 'Ethiopia'. A lexical verb in the infinitive form is found in the following future construction in Sese Gumuz (567) and in Maale (569):

(566) INF-LV   AV:SUBJ:TA

(567) <u>Sese Gumuz</u>

      kà   gìž   ànjinééla   ná   ma-dok'ʷ   mec'a   m̄ʔiirà
      Next year time.this in   INF-build house   1:FUT:AUX
      'next year at this time I will build a house' (Uzar 1989: 379)

(568)   LV-INF   AV-TA

(569) <u>Maale</u>

      ʔííní   ʔúʃk-itsi ʔark'-á-ne
      3M.NOM drink-INF AUX-PFV-AFFRM:DECL
      'he is starting to drink' (Amha 2001:125)

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[38] As mentioned in section 14 below, Nubian and Rashad show V AUX dominant order, as do Ijoid languages, peripheral (or remnant) members of the Macro-Sudan Belt area, and Dogon either a peripheral/remnant member of the Macro-Sudan Belt or of the south/west part of 'Sahara' area, Sandawe and several other languages of the Tanzanian Rift Valley Area, and most of southern and central Saharan languages except Songhay, and as also do Khoe languages. A large AUX V area dominates the rest of Africa, in the far north, in the Nuba Hills and the residual zones of eastern Africa, in the Narrow Bantu spread zone and the southern 'Khoisan' residual zone, where the Ju and Tuu famlies as well as ≠Hoan may be found also.

Kunama has one class of verbs that appears in an adverbially dependent form in the present and past progressive forms (the other class appears with doubled subject marking):

(570) LV-DEP   AV-SUBJ-TA

(571) a. <u>Kunama</u>   b. <u>Kunama</u>

        ga-n   *go-na-no*   *ga-n*   *go-na-ki*
        go-DEP   AUX-1-PRS   go-DEP   AUX-1-AOR
        'I am going'   'I was going'
        (Tucker and Bryan 1966: 344)

Lexical verbs in AVCs in many languages of the Ethiopian area appear in a so-called converb or gerund form. Such languages include Cushitic Beja or the isolate Nera:

(572) LV-GER   SUBJ-MOOD-AV

(573) <u>Bedauye (Beja)</u>

        duːr-aːb   *a-kat-yéːk*
        visit-GER   1-COND-AUX$_{<be>}$
        'If I had visited' (Tucker and Bryan 1966: 542)

(574) LV-GER   AV-TA-SUBJ

(575) <u>Nera</u>

        kal-nu   *waːl-n-ay-t-o*
        eat-GER   AUX-GER-AUX-PST-3
        'he was eating'   (Thompson 1976a: 489)

In Ethio-Semitic Tigrinya and Cushitic Burji the dependent form of the lexical verb in the V AUX configuration is said to be in a 'conjunctive' non-finite form.

(576) LV-CONJ AV:TA:SUBJ

(577) <u>Burji</u> [Cushitic, Afro-Asiatic; Ethiopia]

> *duk'as-ina ee   gagar-i   yeDa [gagareDa]*
> cold-FOC   me   catch-CONJ AUX:1 {catch:AUX:1}
> 'I have a cold' (Hudson 1976a: 264)

(578) CONJ-LV AV:SUBJ

(579) <u>Tigrinya</u>

> *kəbällä'   'əyyu*
> CONJ-eat   3:AUX
> 'he will eat' (Leslau 1968: 69)

In Alaaba on the other hand, the lexical verb appears in the absolutive form of the verbal noun in the following AUX-headed AVC:

(580) LV:VN$_{<ABS>}$ AV-SUBJ:TA

(581) <u>Alaaba</u>

> *tées(u) ʔorrooʔ-ú   ʔataal-táant(i)*
> now   go-VN:ABS   can-2SG:IMPF
> 'you can go now' (Schneider-Blum 2007: 269)

In Omotic Dizi (Maji), all non-final verbs in the string bear a marker of non-finite same subject marking. Only the final verb–the auxiliary–takes subject/tense marking. The use of same subject clause chaining morphology in AVCs in Dizi is quite marked for African languages, but is found in a small number of other languages. This was exemplified in (211)-(213) above.

   Finally one language of the Ethiopian area reflects an AUX-headed structure that is akin to those seen in such forms as the perfect or *passé composé* in French. This is the Omotic language known as Bench[non] or Gimira. In this structure, the lexical verb appears in a participle form that encodes the gender/number of a (third person) subject, but not the person of the subject. Other inflectional categories are realized on the auxiliary.

(582) LV:PRTCPL:SUBJ_{GENDER/NUMBER}   AV:TA:SUBJ_{PERSON/GENDER/NUMBER}

(583) a. <u>Gimira (Benchnon)</u>

yi^1si^3 $han^3k'i^5$ $yis^4ku^2e^3$

he:SUBJ go.PST.PRTCPL:M   AUX:PRS:3M

'he is going' (Breeze 1990: 31)

    b. <u>Gimira (Benchnon)</u>

wu^1sa^3 $han^3k'a^4$ $yis^3ten^2e^3$

she:SUBJ go:PST.PRTCPL:F AUX:PST:3F

'she was going' (Breeze 1990: 31)

   c. <u>Gimira (Benchnon)</u> [Omotic]

ta^1na^3 $han^3k'n^4sa^4$ $yis^3tu^2e^3$

I   go:PRF.PRTCPL AUX:PST:1

'I had gone' (Breeze 1990: 32)

While akin to structures found in languages like French, one might venture forth a different interpretation of these Gimira (Benchnon) constructions, and conclude that they are a special type of split-doubled pattern with subject gender.

    Another language where it is unclear whether one is dealing with an AUX-headed structure like the English progressive, with the lexical verb appearing in construction-dependent and construction–determined non-finite form (like the *–ing* in the English progressive AVC in <*be* + LV-*ing*>), or a split structure where subject person and aspect are in a split distribution (on the auxiliary and lexical verb, respectively) is Ongota, an unclassified or isolate language that some consider to be a unique branch of Afroasiatic, others a divergent Cushitic language.

(584) LV-PROG/DEPSUBJ-AV

(585) <u>Ongota</u>

>   *kaata   č'ak-utto   ka-ʔida*
>   I   eat-PROG   1-AUX
>   'I am eating' (Fleming 2006: 29)

11.2 Doubled inflection in AVCs in languages of 'Ethiopia.' Doubled inflectional patterns in AVCs are relatively marked in the Ethiopian linguistic area, limited to a small number of Cushitic languages. However, a rather straightforward doubled subject formation is seen in the following form from Harar Oromo.

(586) LV-SUBJ   AV-SUBJ
(587) <u>Harar Oromo</u> (Cushitic)

>   *d'agay-aní   jir-an*
>   hear-PL   AUX-PL
>   'they have heard' (Owens 1985: 74)

In its close sister language Oromo of Wellega, fused subject(-cum-TAM) forms are found in a range of constructions. Note that the formal realization of the subject markers differs on the two verbs in this Oromo of Wellega formation. This underscores the fact that doubled inflectional patterns deal with identity across the categories expressed, not the formal instantiations of the markers realizing these inflectional categories**.**

(588) LV-SUBJ:TA   AV-SUBJ:TA

(589) <u>Oromo of Wellega</u>

>   *k'ab-di   tur-te*
>   have-3F.PST AUX-3F.PST
>   'she had' (Gragg 1976: 185)

11.3 Split inflection in AVCs of 'Ethiopia.' Not all AVCs in Bench[non]/Gimira show the AUX-headed (or split) pattern described above and exemplified in (583). Negative AVCs in this language usually (but not always) consist of a negative marked lexical verb

followed by a tense/subject inflected auxiliary–a split inflectional pattern familiar from other African languages with V AUX order.

(590) LV-NEG   AV-TA:SUBJ

(591) <u>Gimira (Benchnon)</u>

   ha⁴mar⁴gu²   ši³du²e³
   go:NEG.PRTPCL AUX:PST:3M
   'he did not go' (Breeze 1990: 32)

Note that Daasanech, a Cushitic language that is spoken outside of the 'Ethiopia' linguistic area, shows a somewhat similar pattern, only reflecting the AUX V order that is characteristic of Kenyan languages. That tense is encoded tonally makes this properly a different kind of split than the one seen in Gimira/Bench[non] above.

(592) AV:SUBJ   NEG-LV:TA

(593) <u>Dasenech (Daasanech)</u>

   yáá   ma-láálan
   AUX:1   NEG-SING:PST
   'I did not sing' (Sasse 1976: 200)

As exemplified originally in (80) above, in Cushitic Harar Oromo, something akin to the negative split in Daasanech is seen in which both negative and tense appear on the lexical verb and subject on the auxiliary; unlike Daasanech, the structure reflects the V AUX structure characteristic of languages of 'Ethiopia'.[39]

(594) NEG-LV:TA   AV:SUBJ

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[39] What I mean here is simply those languages that participate in this areal convergence zone, not all languages physically spoken within the borders of the region, as several conventionally classified as 'Nilo-Saharan', e.g. Surmic languages, do not show this order.

(595) <u>Harar Oromo</u> (Cushitic)

> *xaléesá   hin-déem-ne   ture*
> yesterday   NEG-go-PST   AUX:1
> 'I didn't go yesterday' (Owens 1985: 74)

Yet another split pattern involving negation is seen in Omotic Dizi. Here the negative element functions as an auxiliary, but licenses a co-negative marker on the lexical verb. The auxiliary encodes subject but the lexical verb encodes tense.

(596) AV-SUBJ   LV-TA-DEP_{CONEG}

(597) a. <u>Dizi</u> (Maji)

> *ta-n   katse-de-ti*
> NEG-1   cook-PRS-NEG
> 'I'm not cooking' (Allan 1976b: 384)

b. <u>Dizi</u> (Maji)

> *ta-n   k'e-ki-tì*
> NEG-1   work-PST-NEG
> 'I didn't work' (Allan 1976b: 387)

c. <u>Dizi</u> (Maji)

> *ta-nà   k'e-de-tì*
> NEG-2   work-PRS-NEG
> 'you don't work' (Allan 1976b: 387)

d. <u>Dizi</u> (Maji)

> *ta-n   k'é-e-ti*
> NEG-1 work-FUT-NEG
> 'I won't work' (Allan 1976b: 387)

These formations thus differ from the Harar Oromo form by using a negative auxiliary and secondary co-negative on the lexical verb, and, moreover, the Dizi form reflects AUX V order rather than the order V AUX that is typical of the 'Ethiopian' linguistic area.

11.4 Split/Doubled inflectional patterns in languages of 'Ethiopia.'   The nearly extinct Cushitic language Kemantney (Qemant) exhibits a range of different split doubled inflectional patterns. In the following pluperfect form, person and number of the subject is doubly expressed, and tense is limited to the auxiliary. Note that the lexical verb in this structure is overtly marked as syntactically dependent by the use of the gerund suffix –*(w)ä*.

(598) LV-SUBJ-GER   AV-SUBJ-TA

(599) <u>Kemantney</u> (Qemant)

> *ïntändew   kïz-y-ïn-wä   sïmb-i-n-e͡w*
> you (PL)   sell-2-PL-GER   AUX-2-PL-PST
> 'you (PL) had sold' (Leyew 2003: 194)

The following construction in Kunama shows a slightly different pattern. Here subject is doubly marked, but tense is restricted to the lexical verb. Note that this Kunama structure shows AUX V order, not V AUX, and derives from an auxiliary verb whose lexical meaning was 'enter', thus this AVC likely derives from a serialized formation originally in pre-Kunama.

(600) SUBJ-AV   SUBJ-LV-TA

(601) <u>Kunama</u>

> *m-ulu   m-ibo-ke*
> 2PL-AUX 2PL-plough-AOR
> 'you began ploughing' (Tucker and Bryan 1966: 344)

While the pluperfect in Oromo of Wellega shows a doubled inflectional pattern, the negative pluperfect on the other hand shows a split/doubled inflectional pattern, with negative on the lexical verb, but subject and tense doubly encoded.

(602) NEG-LV-SUBJ:TA AV-SUBJ:TA

(603) <u>Oromo of Wellega</u>

    hin-adeem-ee(n)   ture
    NEG-go-3M.PST   AUX-3M.PST
    'he had not gone' (Gragg 1976: 189)

11.5 LEX-headed AVCs in 'Ethiopia.' Unsurprisingly, LEX-headed formations are not overly common in the languages of Ethiopia but are attested in a small number of them. For example, in Hamer, an uninflecting auxiliary *de/də* may occur either before or after the lexical verb which bears aspectual marking.

(604) AV   LV-ASP

(605) <u>Hamer</u>

    sʌxʌ   *wo*   *də*   *yɛʔ-ɛ*
    tomorrow   we   AUX   go-IMPF
    'tomorrow we are going' (Lydall 1976: 422)

(606) LV-ASP   AV

(607) <u>Hamer</u>

    na   *ki niʔ-a   de*
    yesterday   he come-PRF AUX
    'he was coming/came yesterday' (Lydall 1976: 422)

Ethio-Semitic Inor has a structure in which an auxiliary originally inflected for a third singular (possibly 'clausal') subject has been reanalyzed as a clause final uninflecting past tense marker. Thus, it does not change for the subject person as would be typical of auxiliaries in Inor. Similar formations in Nilotic languages like Acholi or Turkana were presented in section 9 above

(608) SUBJ-LV-ASPAV   <*SUBJ-LV-ASP*AV:TA:3M

(609) <u>Inor</u>

> *jemʔa*   *ba:nəwatạ̈*   *ama:d*   *gəziya*   *bə-k'aya*
> neighbor   be:PST_3PL.SUBJ   much   time   in-surroundings
>
> *ɨmma:ti*   *ɨ-wɔʔɔr-ua*   *ba:nədạ̈*
> together   3PL.SUBJ-spend_day:IPFV   AUX.PST (<3M)
>
> 'as they were neighbors, they spent a lot of time together'
> (Suter 2007: 203)

11.6 Complex verb forms derived from fused AVCs in 'Ethiopia.' Combined fused subject/auxiliary forms where the auxiliary element remains free-standing are not common in the 'Ethiopia' linguistic area. One future formation in Afar may show this. However, as is frequently the case in languages of the region with such structures, fully fused/fused (or cliticized) forms are also possible in Afar.

(610) LV-INF-TA:SUBJ   <LV-INF AV-TA:SUBJ

(611) <u>Afar</u>

> *ha:ˈd-e-tto*   ~   *ha:ˈd-e li ˈto*
> fly-INF-AUX:2   fly-INF AUX:FUT:2
> 'you will fly' (Bliese 1976: 147)

Fused doubled subject formations deriving from original doubly inflected auxiliary verb constructions are quite restricted in the languages of the region, but may be found in the speech of certain speakers of Ethio-Semitic Amharic.

(612) LV-SUBJ-AV-SUBJ   <?*LV-SUBJ AV-SUBJ

(613) a. <u>Amharic</u>   b. <u>Amharic</u>   c. <u>Amharic</u>

      sämt-äh-all-äh   *sämt-äš-all-äš*   *sämt-o-all-ä*
      hear-2M-AUX-2M   hear-2F-AUX-2F   hear-3M-AUX-3M
      'you (m) have heard'   'you (f) have heard'   'he has heard'
      (Leyew 2003: 194)

As LEX-headed formations are uncommon in languages of 'Ethiopia', it is not a huge surprise that fused complex verb forms deriving from such constructions are likewise not common in languages of this region. However, just such a formation is at the heart of the future construction in various Gumuz varieties. While the exact element grammaticalized as a future is different across Sese Gumuz, Sai Gumuz, and Kokit Gumuz, the future serves as a proclitic or prefix to a subject-marked lexical verb. Note that this contrasts with the synthetic past form, which rather has a fused subject-marked auxiliary across all three Gumuz varieties, and probably ultimately derives from a fused split formation.

(614) TA-LV-SUBJ < ?*AV LV-SUBJ   (615) TA:SUBJ-LV-TA < ?*AV-SUBJ LV-TA

(616) <u>Sese Gumuz</u>   (617) <u>Sese Gumuz</u>

      kəm-səra   *bər-sə-ga*
      FUT-eat:1[.FUT]   PST:1-eat-PST
      'I will eat'   'I ate'
      (Bender 1979: 49)

(618) <u>Sai Gumuz</u>   (619) <u>Sai Gumuz</u>

      mə-sa:nẓ-ɛɗa   *bər-le:-ga*
      FUT-think-1[.FUT]   PST:1-hoe-PST
      'I will think'   'I hoed'
      (Bender 1979: 49)

(620) <u>Kokit Gumuz</u>   (621) <u>Kokit Gumuz</u>

de-sa:ra   *dɛr-sə-ba*
FUT-eat:1[.FUT]   IMPF:1-eat-IMPF
'I will eat'   'I was eating'
(Bender 1979: 49)

In the Southern Omotic language Aari, an original post-verbal auxiliary in a LEX-headed construction appears enclitic to a lexical verb bearing markers of subject, TAM, and polarity. It is possible that the 'lexical' verb in these constructions themselves derive from fused AUX-headed formations, albeit now embedded within a larger LEX-headed formation.

(622) LV:TA:SUBJ-AV < ?* LV:TA:SUBJ AV

(623) <u>Aari</u>

báʔseqit=a̰a̰q(e)
bring:PLUP:1=AUX
'I had brought' (Hayward 1990: 476)

(624) LV:NEG:TA:SUBJ-AV < ?* LV:NEG:TA:SUBJ AV

(625) <u>Aari</u>

baʔkít-a̰a̰q(e)
bring:NEG:PLUP:1=AUX
'I had not brought' (Hayward 1990: 476)

Split/doubled formations fused into large complex verbal forms are also attested among the languages of the 'Ethiopia' linguistic area. In the endangered Kemantney or Qemant subject is doubly marked, but aspect occurs on the auxiliary verb, not the lexical verb. According to Leyew (2003), these formations in Kemnatney may reflect Amharic influence (where only subject is doubly marked, see (605) above).

(626) LV-SUBJ-AV-SUBJ-ASP-GEND/NUMB
        < ?* LV-SUBJ AV-SUBJ-ASP-GEND/NUMB

(627) a. <u>Kemantney</u> (Qemant)   b. <u>Kemantney</u> (Qemant)

      ïntï   was-y-am-y-äkʷ   *ïntändew   was-y-ïn-wan-y-äkʷ-ïn*
      you   hear-2-AUX-2-IMPF   you.PL   hear-2-PL-AUX-2-IMPF-PL
      'you have heard'   'you (PL.) have heard'

    c. <u>Kemantney</u> (Qemant)

      ni was-y-an-ä-t
      s/he   hear-3-AUX-IMPF-F
      'she has heard'
      (Leyew 2003: 193)

As alluded to above, complex verb forms are found in various languages of the 'Ethiopia' linguistic area that incorporate already fused subject/auxiliary forms. Generally speaking these attach to unmarked verb stems, reflecting an original AUX-headed structure. Such formations are found in such languages as the isolate Berta:

(628) LV-SUBJ:TA < ?*LV   AV:SUBJ

(629) a. <u>Berta</u>   b. <u>Berta</u>

      θiŋ-ali   *θiŋ-aŋo*
      eat-1.PRF   eat-2.PRF
      'I have eaten'   'you have eaten'
      (Tiulzi et al. 1976: 525)

Cushitic languages of the region make particular use of such complex fused formations. Thus, formations of this type are attested in such diverse Cushitic languages as Gidole and Bilin.

(630) LV-neg:ta:subj< ?*LV   neg:AV:subj

(631) a. <u>Gidole</u> (Cushitic)   b. <u>Gidole</u>

      am   uk-hínam   *amuk-híntam*
      NEG   drink-PRS.NEG:1/3M   NEG   drink-PRS.NEG.2/3F
      'I don't drink'   'you don't drink'
      (Zaborskij 1975: 96)

In Bilin, the formation appears to belong to the type of structure using a fused light verb whose lexical meaning is 'say'. Such formations are common across languages of 'Ethiopia' as well as the 'Sahara' (see sections 13 below and 4.1 above for more examples).

(632) LV-SUBJ:TA   < ?*   LV /say/:SUBJ:TA

(633) a. <u>Bilin</u>   b. <u>Bilin</u>

      wŭḥ-jăkw   *wŭḥ-jäti*
      shout-say:3M:PRS   shout-say:3F:PRS
      'he shouts'   'she shouts'
      (Böhm 1983: 42)

Such formations are commonly found in Alaaba as well. The various first person TAM suffixes that derive from fused auxiliary structures bear little resemblance to each other, underscoring their origins from different auxiliary stems.

(634) LV-SUBJ:TAM   < ?* LV[-CV_{<SUBJ>}]   AV:SUBJ

(635) a. Alaaba

      ʔán(i)   káapp'(a)   wáal-l(i)   mar-aamíit(i)
      1SG:NOM DEM3SG:M:ABS go.to-CV1   go-1SG:PROG
      'I am going away' (Schneider-Blum 2007: 249)

b. <u>Alaaba</u>

    ʔesáa   t'iz-zho-ʔékki'(i)
    1SG:DAT become.sick-3SG:M:PRF-1SG.IRR
    'I was sick' (Schneider-Blum 2009: 65) /*-yo-*/

c. <u>Alaaba</u>

    ʔán(i)   t'iz-zhóom(i)
    1SG:NOM become.sick-1SG:PRF
    'I am sick' (Schneider-Blum 2009: 65) /*-yóom-*/ <be>

11.7 Summary. The languages of the 'Ethiopia' region show considerable diversity in the inflectional patterns of AVCs. AUX-headed formations are relatively frequent, as are complex verb forms derived from these. The lexical verb in the AUX-headed pattern appears in a construction-determined non-finite form labeled various things by different researchers, e.g., converbs, participles, verbal nouns, infinitives, etc. (see Amha and Dimmendaal 2006a). Of particular note among the languages of 'Ethiopia'is the presence of complex verb forms that derive from a double fusing of auxiliaries. First there is a subject-encoding auxiliary that appeared clause-finally in the characteristic V AUX order that typifies languages of the region. This fused subject and auxiliary form simultaneously encoded subject properties and TAM categories of various sorts. This in turn was later incorporated into a larger complex as a subject-TAM suffix in verb forms (these are represented as f/fS/TAM/P below, short for fused/fused-subject TAM/polarity formations). As mentioned above, in addition to the various languages of 'Ethiopia' (in particular Cushitic ones), such formations are commonly found in Hadza and Sandawe as well spoken to the south of this region.

AH	Sese Gumuz; Maale; Kunama; Burji; Nera; Tigrinya; Alaaba; Dizi
AH/split	Benchnon (Gimira)–subj.gender; Ongota
2x	Harar Oromo; Oromo of Wellega
split	Harar Oromo; Dizi; Benchnon (Gimira)–neg
S/2	Kemantney (Qemant); Kunama; Oromo of Wellega
LH	Hamer; Inor
S/TAM/P	<Afar>
fAH	??? (Kunama; Nera; Bench)
f2x	Amharic
fS/2	Kemantney (Qemant)
fLH	Sese Gumuz; Sai Gumuz; Kokit Gumuz; Aari
f/fS/TAM/P	<Afar>; Alaaba; Bilin; Gidole; Kokit Gumuz; Sai, Sese Gumuz

Table 13: Patterns of inflection in languages of the 'Ethiopia' region

Note that while almost all of the data from the Cushitic languages above in 'Ethiopia' show V AUX structure or complex verb forms that were originally constructions showing V-AUX order, the Cushitic languages south of this area may reflect Nilotic or Bantu influence and rather exhibit AUX V order instead (cf. also the data from Burunge in section 10 above).

(636) <u>Southern Cushitic</u>

S'aamakko Dullay	Aux V
Dahalo	Aux V
Daasenech	Aux V

Furthermore, except Nera, Kunama, some AVCs in Gumuz and certain fused structures underlying various complex verb forms in Berta, all mentioned above, the languages of the genetic units that are conventionally called Nilo-Saharan of the 'Ethiopia' region virtually all show AUX V order or AUX-V structure in complex fused structures. This includes languages belonging to Koman, the Jebel languages, Surmic languages and Shabo, as well as indeed even some constructions in Kunama, Berta, and Gumuz. Many other features of the AVCs in these languages show behavior that differs significantly from that of the languages of 'Ethiopia' presented here. A brief tabulation of these formations are offered in Table 14.

Genetic Unit Language	Order	Patterns
Jebel		
Gaam	Aux V	fused/fused S/TAM/P + 2x
Aka	Aux V	2x +DEP
Kelo	Aux V	fused/fused S/TAM/P + AH
Molo	Aux V	fused/fused S/TAM/P + 2x
Surmic		
Koegu	V Aux!	f2x+DEP, AH
Baale	Aux V	LH
Majang	Aux V	fAH+CONEG
Murle	Aux V	AH ~ 2x
Mursi	Aux V	AH
Didinga	Aux V	AH ~ 2x
Tennet	Aux V	fAH, f2x, split+DEP, LH+DEP
Koman		
Kwama	Aux V	fAH
Koma	Aux V	AH +Ø
Uduk	Aux V	AH +dep, AH +Ø
Shabo		
Shabo	Aux V	split

Table 14: AVCs in Nilo-Saharan languages in 'macro-Ethiopia'

Each genetic unit has a relatively straightforward profile across the languages of the region, e.g., AUX-headed and fused AUX-headed formations predominate among AVCs in the Koman languages, and fused subject/auxiliary formations in Eastern Jebel languages. Shabo appears to have a highly idiosyncratic but characteristic split pattern that merits further investigation in this enigmatic and nearly extinct language of Ethiopia. Finally, Surmic languages exhibit the greatest variation. Some show both AUX-headed and doubly inflected AVCs; Baale and Tennet also show LEX-headed formations, and Tennet one split formation as well. One language, Koegu, even has the V Aux order one expects of a language of 'Ethiopia', and thus may show other diagnostic characteristics of the languages of this area, and therefore properly belong to this areal grouping like Nera,

Kunama, Berta and Gumuz similarly at least in part do. Resolving this issue in the history of Koegu is a topic that must remain an objective for future research.

12 Macro-Sudan Belt

In this section I briefly present data from the massive Macro-Sudan Belt linguistic area that runs west to east across the African continent from the Atlantic Ocean to the Ethiopian Plateau (Güldemann 2008: 152). This area is bounded by spread zones in the north ('Sahara', section 13), in the east (Macro-Ethiopia, section 11), in the south (Narrow Bantu section 6), and by the Nuba Hills residual zone (see section 14 below) in the northeast.

The core of the Macro-Sudan Belt [MSB] area consists of languages belonging to the following genetic units (Güldemann 2008's categories): Adamawa, Ubangian, non-Bantu Benue Congo, Bongo-Bagirmi, Moru-Mangbetu, Kwa, Kru, Gur, and Mande. In addition, Güldemann (2008) considers the following genetic units to be peripheral parts of the MSB linguistic area: Chadic (see section 7 above), Atlantic, Ijoid, Dogon and Songhay.[40] For the purposes of the typology of auxiliary constructions advanced here, I deal mainly with the languages from the genetic units listed as core members of the area below, with occasional data from more peripheral members of the macro-area. To the list of genetic units adduced by Güldemann (2008), I also add the unclassified or isolated Laal to the core category and Bang[er]i Me to the peripheral group in this list here. On the other hand, in my discussion below I exclude what I call the marginal members of the area, viz. Ijoid, Dogon and Songhay languages. A full list of the languages from the Macro-Sudan Belt in my corpus and the genetic units I consider them to represent are listed in Table 15.

Table 15

<CORE MEMBERS>

Genetic Unit	Language(s)
Bambukic > Jen	Burak
Bantoid, N	
Mambiloid	Mambila, Vute

---

[40] Dogon and Ijoid are particularly divergent here. Both have V AUX structure among other details. Dogon has certain features in common with languages of the 'Sahara' area and are treated in section 13 below accordingly.

Bantoid S
East Beboid	Noni	
West Beboid	Mundabli	
Ekoid	Ejagham	
Mbam-Nkam	Limbum	
Ring > C	Kom	
Grassfields	Yemba	
Mamfe/Nyang	Kenyang	
Mbam	Nomaande	
Mbe	Mbe	
Ndemli	Ndemli	
Tikar	Tikar	
Tiv	Tiv	

Cross River   Eleme, Gokana, Ibibio, Kana, KoHumono,
                     Lokaa, Mbembe, Obolo, Ogbronuagom
Jukunoid   Kuteb, Hone, Jibə, Wannu, Wapan-Wukari, Wapʰa̧
Kainji   Amo, Duka Kahugu, ut-Ma'in
'Plateau'   Birom/Berom, (I)Rigwe, Izere/Afuzare/Zarek, Eloyi,
                     Gworok/Kagoro, Mada, Taro, Idũ, Eggon
Ukaan   Ukaan
Bendi   Bekwarra
Ghana-Togo Mtn
        Ka-Togo   Avatime
        Na-Togo   Buem/Lelemi, Sele, Siwu
Leko-Nimbari   Samba Leko, Zing Mumuye
Mbum-Day   Doyayo, Karang, Lua/Niellim, Mbum
Volta-Congo > Ega   Ega
Volta-Niger
Gbe   Anexo-Ewe, Ewe, Fongbe, Minagbe
Nupoid-Okoid-Idomoid
        Idomoid   Idoma
        Nupoid   Ebira/Igbirra, Gade, Nupe
        Òkó   Òkó [Oko/Ogori]
Yoruboid-Edoid-Akokoid-Igboid
        Yoruboid   Yoruba
        Edoid   Degema, Edo, Emai, Engenni, N. Ibie

Igboid	Echie, Ekpeye, Igbo, Izi, Onicha Igbo
Fali	Fali
'Gur '	Dagaare, Frafra, Kirma, Konkomba, Tyurama
Kru	Vata, Bété, Godie, Koyo, Neyo, Nyo, Kuwaa, Wobé, Dewoin, Gbaeson Krahn, Tchien Krahn, Grebo, Krahn, Bassa, Klao, Borobo, Tepo, Sapo
Kwa	
Ga-Dangme	[A]Dangme, Ga
Potou-Tano	Akan, Anyi, Banda Nchumuru, Baule, Bejamso-Grubi Nchumuru, Gehode, Genyanga, Krachi, Likpe, Nawuri, Nkonya, Twi
Kulango	Kulango, Lorhon
Senufic	Nafaara, Supyire
E Mande	Bobo-Fing, Bokobaru, Boko/Busa
S Mande	Guro, Dan-Gweeta, Mano
CW Mande	Jalonke, Maninka, Bambara, Manding, Meeka, Banka (Samogo), Jowulu
SW Mande	Mende, Kpelle
Ubangi	
Banda	Linda
Gbaya	'Bozom, Gbaya 'Buli, Gbaya Kaka, Mbodomo
Mba	'Dongo, Ma, Mba
Ngbaka	Baka, Mayogo, Mundu
Ngbandi	Ngbandi, Yakoma
Sere	Ndogo
Zande	Zande, Barambu, Pambia
Laal	Laal
Bongo-Bagirmi	Bongo, Baka (BB), Kara, Fer, Yulu, Gula Sara, Gula Méré, Sara, Morokodo, Mödö, Kabba, Gula Zura, Mbay, Ngambay-Moundou
Kresh	Kresh
Lendu	Ngiti
Moru-Ma'di	Lugbara, Ma'di, Moru
Mangbetu	Mangbetu, Meje
Mangbutu-Efe	Lese, Mamvu
Waja	Dadiya, Awak
Jen	Burak

<PERIPHERAL MEMBERS>

Genetic Unit	Language(s)
Bak	Dyola, Diola Fogny
Senegambian	Adamawa Fulani, Wolof
Cangin	Ndut-Falor, Non
Eastern N. Atlantic	Pajade/Badiaranke
Mel	Kisi
Bijogo/Bijago	Bijogo
Bang[er]i-Me?	Bang[er]i-Me
Chadic	
West	Ader Hausa, Angas, Bolanci, Burrum (Boghom), Chip, Dott, Daffo Ron, Gerka (Yiwom), Goemai, Guus/Sigidi, Hausa, Karekare, Kwami, Lele, Montol, Ngizim, Pero, Sayanci
East	Gurduŋ, Dera-Kanakuru, Mubi, ??Polci
Biu-Mandara	Buduma, Gidar, Daba, Hdi, Mada, Malgwa, Mbuko, Merey, Mofu-Gudur, Moloko, Muyang, Vamé

<MARGINAL MEMBERS>

Dogon	Dɔgɔ́ sɔ̀, Donno So, Jamsay
Ijoid	Kolokuma Izon, Kalabari Ijo, ɓʊmɔ Ijo, Defaka
Songhay	Koyra Chiini, Tasawaq, Tondi Songway Kiini

Table 15: Languages of the Macro-Sudan Belt in my corpus

One feature that languages of the Macro-Sudan Belt share in common is the dominance of AUX V order in AVCs. Furthermore, virtually all major sub-patterns of inflection in auxiliary verb constructions are attested in one language or another. However, the major areal trends show a distinctly different skewing. In particular, tense-marked pronouns or fused subject-auxiliary forms are a salient and noteworthy feature found in this area far more frequently than in other parts of Africa (or the rest of the world).

12.1 AUX-headed AVCs in the languages of the Macro-Sudan Belt. An AUX-headed pattern of a familiar type, with a dependent-marked lexical verb is seen in Barambu.

(637) SUBJ-AV DEP-LV

(638) <u>Barambu</u>

> *à-íma   tɛ-dà*
> 1.DEF-AUX   DEP-come
> 'I have already come' (Tucker and Bryan 1966: 154)

The Bongo-Bagirmi languages are another core group of the MSB linguistic area. Numerous AUX-headed formations are found in these languages (and doubly inflected forms as well, see below). Morokodo (640) has a typical AUX-headed formation for this genetic unit with a subject marked auxiliary and the lexical verb in the infinitive form.

(639) SUBJ-AV   INF-LV

(640) <u>Morokodo</u>

> *m-édí   kù-ɓu   mɔ̀*
> 1-AUX   INF-beat   him
> 'I am beating him' (Tucker and Bryan 1966: 75)

Its sister language Gula Méré ((158), repeated here as (641)) shows a similar structure as well:

(641) <u>Gula Méré</u>

> *mɔ́-nɖɔ́ kūsá   ɲɔ̀*
> 1-AUX   INF:eat   thing
> 'I am eating' (Nougayrol 1999: 137)

Similar AUX-headed formations with dependent-marked lexical verbs can be found in the negative progressive AVC with the negative auxiliary *-bé* in the isolate language Bangi-Me, where the lexical verb appears in the 'dependent' *n*-form.

(642) SUBJ-AV   *n*-LV

(643) Baŋgi Me

> *m̀-bé   bòrèfì̀   n-dya*
> 1-NEG   food   *n*-eat
> 'I'm not eating food' (Blench 2007: 9)

This type of pattern is also the structure seen in the negative capabilitive AVC in Adamawa-Fulani, a Senegambian language, where the lexical verb appears rather in the suffixal infinitive form.

(644) SUBJ-AV:TA LV-INF

(645) Adamawa Fulani

> *mi-wáawataa joodaa-go*
> 1-can:NEG.FUT sit:EMPH-INF
> 'I can't sit' (Stennes 1967: 214)

In the Central Delta Cross River language Ogbronuagom of Nigeria, also known as Bukuma, a more developed AUX-headed structure is encountered: the preverbal auxiliaries bear subject and tense proclitics and the lexical verbs appear in an infinitive form.

(646) SUBJ-TA/NEG-AVINF-LV

(647) a. Ogbronuagum (Bukuma)   b. Ogbronuagum (Bukuma)

> *n-dá-mɔ́   ərílée eɗe*   *m-m̄-mɔ́ɔ   ərílée   eɗe*
> 1-FUT-AUX to.eat food   1-FUT.NEG-AUX to.eat   food
> 'I must eat food'   'I must not eat food'
> (Kari 2000: 38-39)

In Bijogo, an isolate language (or a divergent member of the Atlantic stock), there are three sub-types of this same kind of AUX-headed AVC, with lexical verbs appearing in one of three construction-determined dependent forms (viz. *ŋɔ-*, *n-* and *ta n-*).

(648) SUBJ-AV   *ŋɔ*-LV[:ACCOMPLI]

(649) <u>Bijogo</u>

    ɲɛ-mɛg   *ŋɔ-ʈaɛ*
     1S.ACC-avoir l'habitude   *ŋɔ*-chasser:ACCOMPLI
     'j'ai l'habitude de chasser' (Segerer 2002: 278)

(650) SUBJ-AV *n*-LV

(651) a. <u>Bijogo</u>

    ɲe-te   *n-kpay*
     1-ETRE DEBOUT SV-tirer le vin du palme
     'je suis en train de tirer le vin du palme'

   b. <u>Bijogo</u>

    tu-ru   *n-dɔ*
     1P.ACC-LEVER   SV-aller
     'préparons-nous à partir' (Segerer 2002: 273)

(652) SUBJ-AV   *ta n*-LV

(653) <u>Bijogo</u>

    ɲi-boj   *ta n-dɔ*
     1S-POUVOIR de *ŋ*-aller
     'je peux partir'
     (Segerer 2002: 274) /ŋ/ = homoorganic assimilation

As mentioned previously, some of the languages of the western part of the MSB area have AUX-headed AVCs with either an unmarked or Ø-marked lexical verb, e.g., Ewe (655) or appear with a phonologically-marked dependent verb form, as in the Igboid language Echie (657).

(654) SUBJ-TA-AV LV

(655) <u>Ewe</u>

    mì-la-no   kpó
    2-FUT-AUX   see
    'you will see' (Allen 1993: 41)

(656) SUBJ-AV LV_{<PHON.DEP>}

(657) <u>Echie</u>

    ɔ̀-dì-ì   zà:a   ʊlɔ̀
    3-AUX-NEG sweep:OVS house
    's/he did not sweep the house' (Ndimele 2003: 51)

'Dongo has a similar pattern to the Ewe form above. However in 'Dongo this construction may optionally also be univerbated within a fused complex verbal form (661):

(658) SUBJ-AV LV   (659) SUBJ-*a*-AV-LV

(660) <u>'Dongo</u>   (661) <u>'Dongo</u>

    í-mba   ŋgàràgʊ mɛ̀   *ní-a-ti-mɛ̀   ŋgaràgɔ*
    1PL-AUX child   beat   1PL-*a*-AUX-beat child
    'we had beaten the child'   'we are beating the child'
    (Tucker and Bryan 1966: 123)

In the Izi language of Nigeria, a similar construction is attested but this encodes only tense and aspect in the auxiliary, and historically derives from a serial verb construction. As in many West African languages, the tone associated with the auxiliary varies according to the specific TAM form in Izi.

(662) [SUBJ] AV-TA   LV

(663) a. <u>Izi</u> [Nigeria]   b. <u>Izi</u>

      ó   shì-wà tsúá ˈnrí   *ó   tó*ˈ*shí-dú ^tsúá*ˈ*nrí*
      she   AUX-RSLT pound food   she   NEG AUX-PST pound food
      'she already pounded food'   'she did not pound food'
      (Bendor-Samuel 1968: 122)

In the Gbaya Ubangi language Mbodomo of Cameroon, a similar AUX-headed pattern is seen in which subject inflection is lacking, but the auxiliary takes suffixes that encode TAM categories.

(664) [SUBJ] AV-TALV

(665) <u>Mbodomo</u> (Gbaya-Ubangi; Cameroon)

      élé dúŋ-ú wɔr mɔ̀   Odile mà hɔ̀-à
      1PL AUX-PST talk something Odile SIM arrive-PST
      'we were talking when Odile arrived' (Boyd 2003: 46)

Finally, Ewe has AUX-headed AVCs where the lexical verb appears in a construction-determined reduplicated form as well.

(666) SUBJ-AV REDPL-LV

(667) <u>Ewe</u>

      fífíá me-le   ku-kú   gé kpuie
      now 1SG-be.AT:PRS REDPL-die PROSP shortly
      'now I am about to die shortly' (Ameka 2006: 84)

12.2 Doubled inflection in AVCs in languages of the Macro-Sudan Belt. Doubled inflectional patterns are relatively common among languages of the MSB linguistic area. As alluded to above, Bongo-Bagirmi languages make extensive use of doubly inflected AVCs. A canonical instantiation of this pattern can be found in languages like Mbay and Gula Méré.

(668) SUBJ-AV SUBJ-LV

(669) a. <u>Mbay</u> (C. Sudanic, Chad)

      m̄-ndì   m̄-sá yą́ą
      1-AUX   1-eat   food
      'I am/was eating' (Keegan 1997: 69)

    b. <u>Mbay</u> (C. Sudanic, Chad)

      kə̀-ndì   kə̀-sà-n̄   yą́ą
      1PL-AUX 1PL-eat-PL   food
      'we are/were eating' (Keegan 1997: 69)

Note that the following form is a variant of the Gula Méré form given in (641) above, using the same auxililary and in the same function, only in a doubled inflectional pattern not an AUX-headed one (with an infinitive form of the lexical verb).

(670) <u>Gula Méré</u> = (repeat of 157)

      mə̀-nɗə̀ m-úsā   ɲə̀
      1-AUX   1-eat   thing
      'I am eating' (Nougayrol 1999: 137)

The Bak language Dyola exhibits a similarly doubly subject-inflected construction in the following future formation.

(671) <u>Dyola</u>

      u-*ja*   **u**-*waloa di   e-kolo-ŋ*
      1PL-aux **1PL**-enter loc   PREP-well-the
      'we will enter the well' (Marchese 1986: 111; Givón 1973)

Patterns involving a doubled category other than the subject are not at all common in languages of the MSB linguistic area, or really anywhere else in Africa. I offered an example of a doubled negative-marked form in Twi. This unusual pattern is found in its

sister language Akan as well, where negative appears in a doubly inflected configuration, on both the auxiliary and the lexical verb.

(672) NEG-AV NEG-LV

(673) <u>Akan</u>

     m̀-má   *ǹ-kɔ́*
     NEG-AUX NEG-go
     'don't go' (Osam 2004: 22)

Lastly, in (45) a form from Ma'di was exemplified with an unusual pattern where tonally-marked non-past (encoded by a floating low tone) appears with both the lexical verb and the auxiliary.

    As pointed out by Nurse (2008) among others, the tradition of analysis of the researcher has a profound effect on whether a verb form in an African language gets interpreted as having bound or free-standing grammatical markers. Thus, the francophone/francographic tradition, and analyses inspired by such a tradition, particularly in certain parts of western and central Africa, generally interprets functional elements on the verb as free-standing particles, while anglophone/anglographic traditions might analyze the same data as a sequence of bound affixes or clitics. This said, a number of languages of the MSB area exhibit what appears to be doubled subject marking with unbound subject markers in a possibly 'pseudo-analytic' formation. Such a construction was offered by Prost (1964) in analyzing the Gur languages Kirma and Tyurama.

(674) SUBJ AV   SUBJ LV

(675) <u>Kirma</u>

     mi   *ta*   *mi*   *wo*
     1   AUX   1   eat
     'I am eating' (Prost 1964: 56-59; Heine and Reh 1984: 117)

(676) <u>Tyurama</u>

    me   na   me   wu
    I   AUX I   eat
    'I am eating' (Prost 1964: 103; 105; Heine and Reh 1984: 117)

A number of similar pseudo-analytic doubled subject forms of this type are found in the enigmatic unclassified language Laal of Chad.

(677) <u>Laal</u>

    ʔì cī   ʔì ʔùd   kíɲ
    ils AUX   ils terminer en se séparant
    'ils meurent (tous)' (Boyeldieu 1982: 186)

The language of the actual original interpretation need not be French rather than English, just the influence of the analytic tradition. So, analyses offered for Nupoid Gade and Jalonke of the West Mande genetic unit similarly interpret the obviously doubly subject-inflected AVCs below as having doubled free-standing subject pronouns.

(678) a. SUBJ AV   SUBJ LV   b. SUBJ   AV   SUBJ<PHON.DEP> LV

(679) a. <u>Gade</u>   b. <u>Gade</u>

    mbà ba nɪ   ba gɛ   *baa cícì bàà sí   gízè*
    and 3PL AUX 3PL go   3PL AUX 3PL.DEP buy yam
    'and they happened to go'   'they should still be buying yams'
    (Sterk 1994: 18)

Note that the Gade form shows a phonologically-marked dependent subject marker (tonally realized), despite being analyzed as within a quasi-analytic structure.

    In Bantu A20 Duala and the Grassfields Bantu language Babungo of Cameroon, a doubled inflectional pattern appears in a phonologically/ prosodically less integrated form in a construction with a quasi-analytic but nevertheless doubly-marked subject. In Duala, the second subject marker is phonologically marked as dependent in (681), but not in Babungo (682).

(680) SUBJ   AV   SUBJ   LV

(681) a. Bantu A20 <u>Duala</u>

> *a mabɛ́   á nyɔ́ mao   búnya tɛ́*
> he AUX:PRS he drink palmwine every   day
> 'he drinks palmwine every day'
> (Heine and Reh 1984: 118; Ittmann 1939: 96)

  b. <u>Duala</u>   c. <u>Duala</u>

> *ná   ta   naˈ pɔ*   *o   tá   oˈ pɔ*
> I   AUX:PST I   come   you AUX:PST you come
> 'I came'   'you came'
> (Heine and Reh 1984: 118; Ittmann 1939: 97)

(682) <u>Babungo</u> [Grassfields Bantu, Niger-Congo; Cameroon]

> *ŋwɔ́ dùˈtɔ́   ŋwɔ́ kû*
> he   already he   die:PRF
> 'he has already died' (Schaub 1985: 219)

Jalonke shows a similar formation with unbound but doubled subject inflection in the following AVC, the second of which in some AVCs appears to be phonologically marked:

(683) <u>Jalonke</u>

> *n   an   tewi-xi   nde   n   jele*
> 1SG 1SG do.deliberately-PRF INACT 1SG laugh
> 'I laughed deliberately' (Lüpke 2009: 184)

Variation with the same auxiliary showing an AUX-headed pattern or a doubled one is also not uncommon in languages of the MSB linguistic area. One such example from Gula Méré was offered above. Another example was given in (59) above from its Bongo-Bagirmi sister language Ngambay-Moundou, where there is similar variation between a

doubled inflectional pattern and an AUX-headed one with a nominalized lexical verb, but one that is also an overt syntactic dependent of a prepositional phrase. Likewise, in the Bak language Diola Fogny of Senegal and Gambia, the past progressive or imperfect is marked either by an AUX-headed formation with the lexical verb in an infinitive form or by doubly subject inflected AVC; see (58) for examples.

12.3 Split inflection in AVCs in languages of the Macro-Sudan Belt. Split inflection is attested among the languages of the MSB linguistic area in AVCs as well. The most common split pattern attested in languages of the MSB is the split where subject is encoded on the auxiliary verb and object on the lexical verb. Such a pattern is found for example in the Gbe language Ewe, and in Mbe, a S. Bantoid language.

(684) SUBJ-AV LV-OBJ

(685) Ewe

    mì-le   kpó-m
    2PL-AUX see-1
    'you see me' (Allen 1993: 39)

(686) Mbe

    ǹ-rèkě   šék-àbǒ bèñèn
    1-AUX:SFX sell-3PL things
    'I will be selling them things' (Pohlig 1981: 30)

À propos to the discussion offered above on the influence of the tradition of meta-analysis that has a strong impact on the interpretation of linguistic phenomena, it would apppear that Laal shows a split inflectional pattern of this same 'pseudo-analytic' type.

(687) SUBJ AV   LV-OBJ

(688) <u>Laal</u>

> màr.cē   ɓɨ́lá   mɨ́   bɨ̀là   ʔò tē: dɨ́gɨ́r
> cultivateur(COMP) dire.que pour   rien   tu PROG tromper:1
> 'le cultivateur dit "certainement pas! tu es en train de me tromper'
> (Boyeldieu 1982: 123)

As discussed previously and exemplified in (73), Ogonoid Kana (689) has a structure which appears to reflect such a pattern at first glance. The following two forms suggest that Kana might exhibit the object-with-lexical verb subject-with-auxiliary verb inflectional split that its sister language Eleme does (72).

(689) <u>Kana</u>

> m̀-dāàb   ā-m̄ùɛ
> 1-MOD:FACT 2-see
> 'I can see you' (Ikoro 1996)

However the following past capabilitive form suggests that these elements might rather be clitics ((691), repeating (75)), with the subject marker a clause-initial proclitic and the object marker a second-position proclitic (so it must attach to the word to the left or second verb in this sequence). This order reflects the areally typical S Aux [proN]O V order, that is especially common with pronominal objects (Gensler 1994, 1997, Güldemann and Gensler 2003; Childs 2005, Güldemann 2008) which typifies languages of the MSB.

(690) SUBJ-[A]V_1 PRON.OBJ-[A/L]V_2 [L]V_3…

(691) <u>Kana</u>

> m-wēè   ā-dáb   mùɛ̀
> 1-PST   2-MOD   see
> 'I was able to see you' (Ikoro 1996)

Note that Bijogo offers an example of a serial structure that is likely to be something like that which is at the origin of many instances of this split subject/object inflectional pattern. When a deictic motion serial verb like 'come' serializes in a nuclear serial

structure with a transitive V_2, the first verb takes the subject marking governed by it, and the object is encoded by the lexical verb that subcategorizes for it. A reinterpretation of V_1 as a functional element and thus as an auxiliary relatively straightforwardly would yield a split inflectional pattern of this subject/object type.

(692) SVC: SUBJ-V_1 [sv]-OBJ-V_2 >> V_1 > AV V_2 > LV in AVC

(693) <u>Bijogo</u>

> *m-ba-de   n-de-a   ma-da   n-na-joŋ*
> 2S-IRR-finir SV-finir-VEN 2S.ACCOMPLI-venir SV-1S.OBJ-voir
> 'quand tu auras fini, viens me voir!' (Segerer 2002: 250)

Lastly, a different kind of split is seen in Doyayo, as exemplified in (83) above. Here tense is encoded on the lexical verb and object and subject properties on the auxiliary.

(694) AV-OBJ[-SUBJ] LV-TA

(695) <u>Doyayo</u>

> *hi¹   gi²-s-i¹-mi³-ge-³   wãã-ko³*
> they AUX-BEN-EP-1-3   catch-PROX
> 'they will be catching him for me'
> (Wiering and Wiering 1994: 75)

12.4 Split/Doubled inflection in languages of the Macro-Sudan Belt. Split/ Doubled inflectional patterns are found in various languages of the MSB, in particular the Cross-River languages, but such formations overall are fairly marked for the languages of this region of Africa. In Ibibio and Ogbronuagom of Nigeria, negative is found on the auxiliary, while subject is doubly encoded on both the lexical verb and auxiliary verb component of the AVC.

(696) SUBJ-AV-NEG SUBJ-LV

(697) Ibibio

    Ùdèmé í-tóoñoké   í-táñ   íkộ ǹté ábooñ
    Udeme CNC-start:NEG   CNC-talk word like chief
    'Udeme has not started to talk like a chief' (Essien 1987: 154)

(698) SUBJ-TA/NEG-AV   SUBJ-LV

(699) Ogbronuagum (Bukuma)

    ojí-ne   ojí-kíle
    1PL:FUT.NEG-AUX 1PL-do
    'we can't do it' (Kari 2000: 41)

Cross-River (Ogonoid) Eleme shows systematic splits in certain paradigms between the behavior of second plural and third plural subjects.

(700) 2-AV LV-HAB-2PL

(701) Eleme

    ró-bere   fɔ-á-í   tʃắtʃaːma
    NEG.2-PRF plant-HAB-2PL beans
    'you didn't used to plant beans'
    (Bond 2006; Bond and Anderson 2003)

In the past habitual, habitual is marked on the lexical verb, while second plural subject is also found on the lexical verb but third plural subject on the auxiliary.

(702) 3-AV-3PLLV-HAB

(703) <u>Eleme</u>

    àbà   bere-ri   fɔ-ɛ̀nu
    3PL   PRF-3PL   plant-something
    'they used to plant something'
    (Bond 2006; Bond and Anderson 2003)

In both instances the person but not number of the subject appears as a prefix on the auxiliary as well. Thus, in the third plural, a subject person/number vs. aspect split is attested (so properly this forms belongs in 12.3 above), while with second plural subject forms the split is rather subject person vs. aspect plus subject person+number in a kind of quasi-split/doubled pattern. For more on these and other similar forms in Eleme, see Bond (2010).

    Mbay of Chad shows a split/doubled construction in the following future formation, where subject is doubly marked while object is found only on the lexical verb–a distribution that is a common one in split/doubled systems, and in Africa is particularly characteristic of Bantu languages (section 6).

(704) SUBJ-AV   SUBJ-LV-OBJ

(705) <u>Mbay</u> (C. Sudanic, Chad)

    m̄-ā   m̄-él-á   tàa   lò-í
    1-AUX   1-tell-3   words of-2
    'I'll tell him what you said' (Keegan 1997: 116)

Amo of the Kainji family is another language of the MSB linguistic area that presents a further example of an AVC with a split/doubled inflectional pattern of this same subject/object type:

(706) <u>Amo</u>

    fewe u-wasà   ù-yenè-i
    you   2-AUX.HAB 2-see-1
    'you often see me' (Di Luzio 1972: 27)

Finally, the Òkó language of Nigeria has a different kind of split/doubled pattern where subject is doubly marked (as expected), but aspect is restricted to being expressed on the auxiliary in the following deontic modal formation:

(707) SUBJ-TA-AV SUBJ-LV

(708) <u>Òkó</u>

      be-kè-ca   *be-yo*
      3PL-ASP-AUX   3PL-go
      'they should leave' (Akerejola 2008: 177)

While Doyayo is analyzed as having unbound subject marking, it nevertheless shows a similar split/doubled inflectional pattern in the following AVCs, where subject is doubly marked and object restricted to the lexical verb.

(709) SUBJ AV SUBJ LV-OBJ

(710) <u>Doyayo</u> (Adamawa-Eastern, Cameroon)

      gɔ² *hi³*   *da³*   *hi³*   *e⁴li⁴-mɔ⁴*
      when 3PL   REM 3PL   call-2
      'when they would call you' (Wiering and Wiering 1994: 220)

12.5 LEX-headed AVCs in languages of the Macro-Sudan Belt. True LEX-headed structures are quite rare in languages of the MSB linguistic area. One example of such a formation is found in the Bongo-Bagirmi language Mödö, where an unmarked future auxiliary is used with a subject-marked lexical verb (first exemplified in (28), repeated here as (712)).

(711) AV   SUBJ-LV

(712) <u>Mödö</u>

      tí   *mó-kɔ̀nyì* *yí*
      FUT 1-rescue   you
      'I will rescue you' (Persson and Persson 1991: 19)

Interestingly is sister language Bongo shows a similar but non-cognate LEX-headed formation in its future, the future elements themselves however are not cognate. Another noteworthy difference is that the lexical verb encodes subject, but also appears in a dependent infinitive form. Thus morphosyntactically the lexical verb functions as the inflectional head, but syntactically it is the dependent of the phrasal head auxiliary. This further underscores my assertion in section 1 that morphosyntax (or inflection) and phrasal syntax are separate but often interconnected domains, at least with respect to AVCs, but more generally in any cross-linguistically defensible theory of the architecture of grammar.

(713) AV   INF:LV-/=SUBJ

(714) a. <u>Bongo</u>   b. <u>Bongo</u>

       ma   amai atäy   *i   amai ata=ma*
       I   FUT   INF:see:1   you   FUT   INF:see=2
       'I shall see'   'you shall see'
       (Santandrea 1963: 65)

One might assume that these LEX-headed structures at least sometimes derived from the erosion of a more inflected construction. This is certainly the case in the rise of the variant LEX-headed formations attested in Mbay. Here there is variation in the progressive AVC between a LEX-headed structure and doubled one, as alread mentioned above.

(715)   AV SUBJ-LV < SUBJ-AV   SUBJ-LV

(716) a. <u>Mbay</u>

       ndì   m̄-sá yą́ą̣   <   *m̄-ndì   m̄-sá yą́ą̣*
       AUX   1-eat food   1-AUX   1-eat food
       'I am/was eating' (Keegan 1997: 69)

b. <u>Mbay</u>

ndì	*kə̀-sà-n̄*	*yáạ*	<	*kə̀-ndì*	*kə̀-sà-n̄*	*yáạ*
AUX	1PL-eat-PL	food		1PL-AUX	1PL-eat-PL	food

'we are/were eating' (Keegan 1997: 69)

12.6 Tensed pronouns and fused subject/auxiliary formations. The fusing of a subject pronoun with a following TAM/polarity auxiliary is relatively wide-spread among the languages of the MSB.[41] Indeed, such formations are a characteristic feature of the region, occuring only sporadically elsewhere in Africa. To be sure, genetic units that have languages both inside and outside of the MSB have languages with such tense-marked pronouns occuring in the languages in the area, but infrequently outside of the languages of the area (like some Bantu A-region subgroups, which pattern like Bantoid languages rather than the rest of Narrow Bantu in this regard (see 6 above). Tense-marked pronouns are found throughout the many genetic units of the MSB, including Northern and Southern Bantoid, Cross River and Ukaan, Jukunoid, Kainji and the many subgroups of Platoid, Gbe languages, the Volta-Congo isolate Ega, Waja languages, Gur languages, various subgroups of Ubangi, Chadic languages, Cangin and Senegambian Atlantic, Potou-Tano and Ga-Dangme Kwa languages, Bongo-Bagirmi, languages representing various genetic units of the Yoruboid-Edoid-Akokoid-Igboid and Nupoid-Okoid-Idomoid stocks of Nigeria, and Senufic languages to name just a random selection in my database.

A simple set of forms reflecting tense-marked pronouns of various types in an AUX-headed formation with a unmarked lexical verb can be seen in the Kulango-Lohorn language Kulango (718) or in the Southern Bantoid languages Tiv (719) or Ndemli (720).

(717) SUBJ:AV_{TAM} LV

(718) a. <u>Kulango</u>   b. <u>Kulango</u>   c. <u>Kulango</u>   d. <u>Kulango</u>

mì	*dɔ́lì*	*mí*	*dɔ́lì*	*míì*	*dɔ̀lì*	*mádɔ̀lì*
1.PRF	sell	1.SBJNCTV	sell	1.PROG	sell	1.HAB sell

'I have sold' 'may I sell'   'I am selling'   'I sell'
(Elders 2007: 193)

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[41] See also Leger and Storch 1999, Ibriszimov and Segerer (eds. 2004), Vydrin (2006), Babaev (2010); also Frajzyngier (1982).

(719) a. <u>Tiv</u>   b. <u>Tiv</u>

      ḿ   *!va*   *mé !va*
      1.NFUT   come   1FUT   come
      'I have come'   'I will come'
      (Arnott 1967/1980: TIV 4)

(720) a. <u>Ndemli</u>   b. <u>Ndemli</u>

      mà   *tóm*   *mì gá*   *tóm*
      1.PST send   1.FUT NEG   send
      'I sent'   'I will not send'
      (Ngoran 1999: 72)   (Ngoran 1999: 76)

Naturally such formations are more typical of certain genetic units than others. Thus, 'tense-marked pronouns' are a family level characteristic of Kru languages, like Neyo, Klao or Wobé:

(721) SUBJ.PRON:TA   LV[-ASP/DEP]   < SUBJ-AV<TA>LV[-ASP/DEP]

(722) a. <u>Neyo</u>   b. <u>Neyo</u>

      ɔ̄ ɓlī-ɛ́   *ɔ́ɔ̄*   *ɓlī-ɛ̄*
      he sing-IMPF   he:IMPF sing:IMPF
      'he sings, can sing' 'he is singing'
      (Marchese 1982: 18)

(723) <u>Klao</u> [Kru]

    ɔ̄ɔ̄   *blē*
    3:IMPF   sing
    'he is singing' (Marchese 1982: 3)

(724) a. <u>Wobé</u>   b. <u>Wobé</u>   c. <u>Wobé</u>

     $\tilde{e}^2$ gyi^{32} ma^2 gyi^{32} ma^2 mu^3-ε^3 gyi^{32}-a^2
     1.PST come   1.NPST come   1NPST FUT-INDIC come-INF
     'I have come'   'I am coming'   'I will come'
     (Hofer and Link 1973/1980: WOB 3)

Tensed pronouns are also frequent in various sub-families of Plateau spoken in northeastern Nigeria. Such formations are characteristic of such languages as Central Plateau (I)Rigwe, Southeast Plateau Fyem, or Tarokoid languages like Tarok:

(725) SUBJ:AV_{<TAM>} LV

(725) SUBJ:AV$_{\langle TAM \rangle}$ LV

(726) a. <u>Tarok</u>

     n   *ŋa*   *ù-yèn*
     1.PRF   see   CLS-child
     'I have seen a child' or 'I see a child' (Sibomana 1981: 238)

   b. <u>Tarok</u>

     mi   *wá*   *a-tí*   *i-pín*
     1.IRR drink CLS-tea   tomorrow
     'I will drink tea tomorrow' (Sibomana 1981: 238)

(727) a. <u>Rigwe</u>   b. <u>Rigwe</u>

     à   *níŋ*   *ŋʷà*   *ǹtcɛ*   *kɔ̂ zɔ́ɔ̀hù ɔtú*   *àá*   *níŋ*   *ŋwa*   *ǹtcɛ*
     3.IMPF   me   give   money every   day   3.PRF   me   give   money
     'he gives me money every day'   'he has given me money'
     (Blench 2009: 4)

(728) a. <u>Fyem</u>[42]   b. <u>Fyem</u>

      náá   soo   Gindiríŋ   *ín   soo   dirámméka*
      1.PRF go   Gindiri   1.IMPF go   farm.your.OBLQ
      'I went to Gindiri'   'I will go to your farm'
      (Nettle 1998a: 32)   (Nettle 1998a: 35)

Western Plateau Idũ has an AUX-headed structure with tense-marked pronouns either with (future) or without (progressive) a copy pronoun in what looks like a quasi-doubled subject-marking construction.

(729) SUBJ:AV$_{<TAM>}$ LV   (730) SUBJ:AV$_{<TAM>}$ LV SUBJ.DEP

(731) <u>Idũ</u>

      múm   ndɛ̃   kwɛr   jvwi
      1.PROG/COMPL   PROG   beat   dog
      'I am beating the dog'   (Blench 2010: 14)

(732) <u>Idũ</u>

      mi   kwɛr   tun   jvwi
      1.FUT/INCOMPL beat   1.DEP   dog
      'I will beat the dog' (Blench 2010: 15)

Mande languages also make use of such formations. The lexical verb in the following Kpelle form appears in a dependent locative form, licensed by the tensed pronoun; this is exactly the kind of construction that underscores the likely origin of such 'pronominal' forms in fused auxiliary structures.

(733) SUBJ.PRON.TA LOC-LV < ?* SUBJ-AV<TA> LOC-LV

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[42] Note that the first perfect form in Fyem *náá* is identical to the form in Hausa, and may be a loan element.

(734) <u>Kpelle</u>

    `káa   pâ-i*
    3:AUX   come-LOC
    's/he is coming'
    (Heine and Reh 1984: 206; Welmers 1973: 315)

In Mende, on the other hand, like Kulango, Tarok or Tiv above, the lexical verb appears in a bare stem or Ø-marked form.

(735) a. <u>Mende</u>   b. <u>Mende</u>

    ng-aa   tewe   *ng-i tewe*
    1-NEG:PM   cut   1-AOR cut
    'I do not cut'   'I cut'
    (Heine and Reh 1984: 208; Migeod 1908: 84)

In its distant sister language Guro, unusual portmanteau subject > object pronouns of this type can be found:

(736) SUBJ.OBJ.PRON.TA.[NEG] LV:ASP < ??*SUBJ-OBJ-AV$_{<TA/NEG>}$ LV-ASP

(737) a. <u>Guro</u>   b. <u>Guro</u>

    ɓē   *zūrū-ō*   *yāā*   *zùrù-ò*   *ɗo*
    2SG>3SG.IPFV wash-IPFV   2SG>3SG.IPFV.NEG wash-IPFV   NEG
    '(you) wash him/her/it'   '(you) don't wash him/her/it'
    (Vydrine 2009: 239)

Cross River Kohumono also has portmanteau subject-object pronouns of this type:

(738) <u>Kohumono</u>

    βɔ́   fà
    1>2.NPSTbite
    'I bite you'
    (Cook 1972/1980: 355) KOH 6

Atlantic languages can show structures of the broad fused subject/TAM type as well. Thus, Senegambian Wolof is renowned for its 'tense-marked pronouns' of this sort, as seen in the following examples:

(739) a. <u>Wolof</u>   b. <u>Wolof</u>

    nga dem   *mungi dyàng-al eleew yi   tééré-ém*
    PST:2 go   PRS:3   read-APPL pupil   the:PL book-his
    'you went'   'he is reading his book to the pupils'
    (Comrie 1985: 316)

The Cangin-Atlantic language cluster Ndut-Falor opposes a realis (or non-future) set of pronouns with an irrealis/future one. In some cases the lexical verb may be unmarked in an AUX-headed formation, as in the progressive (741), or in a modally dependent form in an AUX-headed construction as in the future (745), or it may rather appear in a TAM-marked form, as in the perfect form (744).

(740) SUBJ:PRON_{<RLS>}   AV LV

(741) <u>Ndut-Falor</u>

    mi   na   ay
    1RLS PROG come
    'I am coming'
    (Pichl 1973a/1980: NDU 4)

(742) SUBJ:PRON_{<RLS>}   LV:PRF (743) SUBJ:PRON_{<FUT>}   LV:MOD

(744) <u>Ndut-Falor</u>   (745) <u>Ndut-Falor</u>

    miacɛ   *ma[y]   ayɛ*
    1.RLS come:PRF   1FUT   come:MOD
    'I have come'   'I will come'
    (Pichl 1973a/1980: NDU 4)

Forms with unmarked lexical verbs used with a tensed pronoun in an AUX-headed formation contrasting with other AVCs with a marked lexical verb in a split inflectional configuration may be similarly found in the Senufic language Nafaara. Compare (747) with (749).

(746) SUBJ:PRON_{<TAM>} LV

(747) a. <u>Nafaara</u>   b. <u>Nafaara</u>

    ni   pan   *mepan*
    1.NFUT   come   1.FUT come
    'I have come'   'I will come'
    (Jordan and Jordan 1975/1980: NAF 3)

(748) SUBJ:PRON_{<TAM>} LV:ASP

(749) <u>Nafaara</u>

    ni   paan
    1.NFUT   come:IPFV/PROG
    'I am coming'
    (Jordan and Jordan 1975/1980: NAF 3)

Dadiya of the Waja family shows a similar range of constructions. The perfect pronouns are used with high-toned lexical verb (751), while the progressive AVC combines non-past pronouns with a progressive-marked lexical verb (and reduplication with the stem 'eat') in a split configuration (753).

(750) SUBJ:PRON_{<TAM>} LV

(751) a. <u>Dadiya</u>   b. <u>Dadiya</u>

       n   já   *ń   já*
       1.PRF eat.PRF   2.PRF eat.PRF
       'I have eaten'   'you have eaten'
       (Jungraithmayr 1968/1969: 196)

(752) SUBJ:PRON_{<TAM>} LV:ASP

(753) a. <u>Dadiya</u>   b. <u>Dadiya</u>

       mə̀n   nò-lɛ̀   *mon   jà-jà-l*
       1.NPST   drink-PROG   2.NPST   REDPL-eat-PROG
       'I am drinking'   'you are eating'
       (Jungraithmayr 1968/1969: 197)

Structurally similar split formations can be found in Fali (Yɛ̃k GopRi) of Cameroon as well:

(754) a. <u>Fali (Yɛ̃k GopRi)</u>   b. <u>Fali (Yɛ̃k GopRi)</u>   c. <u>Fali (Yɛ̃k GopRi)</u>

       mì dìkRàgé   *mì   dìkRàré*   *dì   gìm   díkRà*
       1RLS come:PRF   1RLS come:PROG   FUT 1IRR come:IRR
       'I have come'   'I am coming'   'I will come'
       (Ennulat 1973/1980: 229) FAL 3

The Gbaya Ubangi language 'Bozom has similar formations. Here lexical stems appear in one of two tone-marked aspectual forms, high-toned imperfective and low-toned perfective. These combine with realis (or non-future) and irrealis (future) sets of pronouns. The present and future forms combine these in simplex AVCs (756) while the perfect appears with an overtly dependent-marked lexical verb. Again, it is precisely these kinds of structures with a dependent lexical verb where it is most clear that these pronouns are in fact historically fused auxiliary forms.

(755) SUBJ:PRON_{<TAM>} LV:ASP[:DEP]

(756) a. ‘Bozom   b. ‘Bozom   c. ‘Bozom

    ʔà̰   ré   *ʔà̰   rè-á*   *márè*
    3.RLS enter.IPFV   3.RLS enter.PRF-DEP   3.IRR enter.PRF
    'he enters'   'he has entered'   'he will enter'
    (Moñino 1995: 159)

To be sure, a range of split formations can be found in various languages of the Macro-Sudan Belt, where the auxiliary in the AVC takes the form of a tense-marked pronoun. Thus Ga of the Ga-Dangme genetic unit shows a split negative AVC (758) of this broad structural type.

(757) SUBJ:PRON$_{<TAM>}$ LV-NEG

(758) Ga

    e$^{|}$ bá$^{|}$-ý̰
    3.FUT come-NEG
    'he will not come' (Kropp-Dakubu 1988: 105)

Bagirmi of the Bongo-Bagirmi genetic unit has fused subject/auxiliary structures of the type under consideration here. That these pronouns incorporated auxiliaries historically in Bagirmi is shown by the fact that the lexical verb is in an infinitive form in the following AVCs, the definite and indefinite present forms. The vowel alternations seem like the subject-auxiliaries may themselves be being fused into larger verbal complexes, though this is not the analysis offered by Tucker and Bryan (1966).

(759) SUBJ:PRON:TA   INF-LV   SUBJ-AV$_{<TA>}$ INF-LV

(760) a. Bagirmi   b. Bagirmi

    má   kí-nji.   *mú   kù-kó*
    1.INDEF INF-sit   1.INDEF   INF-seize
    'I sit'   'I seize'
    (Tucker and Bryan 1966: 66)

    c. <u>Bagirmi</u>

       mä   kä-sa
       1.INDEF INF-eat
       'I am eating'
       (Tucker and Bryan 1966: 74)

In Bagirmi, the so-called definite present exhibits a doubled subject inflectional pattern embedded within a construction showing subject marking fused with the auxiliary, as is also seen in the indefinite present form (where it is in an AUX-headed configuration with an infinitive marked lexical verb). That is, in the definite present, the subject and the original auxiliary have fused into a single word, which is followed by the subject-marked lexical verb in Bagirmi.

(761)   SUBJ.PRON.TA SUBJ-LV ASP < ?*SUBJ-AV$_{<TA>}$ SUBJ-LV ASP

(762) <u>Bagirmi</u>

       má. m-kó.   gà
       1.DEF 1-seize   DEF
       'I seize'
       (Tucker and Bryan 1966: 66)

In the Kainji language Duka, the lexical verb appears in an unmarked (or Ø-marked) form in some AVCs (764) and in a overtly dependent-marked form in others (766). As etymologies are provided for some of these forms, the analysis of these tense-marked pronouns as original auxiliary verbs is secure (e.g., 764c and 766).

(763) SUBJ.PRON.TA   LV< *SUBJ-AV$_{<TA>}$ LV

(764) a. <u>Duka</u>

       mân   hé ò-kɔ́t   á
       I.FUT.NEG go to-bush   NEG
       'I won't go to the bush...' (Bendor-Samuel et al. 1973: 13)

b. <u>Duka</u>

    mɛ́   róà   sə   á
    I.IRR REM.FUT drink NEG
    'I would not drink it' (Bendor-Samuel et al. 1973: 17)

c. <u>Duka</u>

    maà he
    I.FUT go
    'I will go'
    (Bendor-Samuel et al. 1973: 98) /*əm+rà/ > maà/màà future.1

(765)   SUBJ.PRON.TA DEP-LV < *SUBJ-AV$_{<TA>}$ DEP-LV

(766) a. <u>Duka</u>   b. <u>Duka</u>

    mɛ   *ə̀m-hà*   ~   *mɛ/*   *əm rɔ*   *ə̀m-hà*
    I.PROG DEP-go   I.PROG/ I PROG   DEP-go
    'I am going'   'I am going'   or   'I go'
    (Bendor-Samuel et al. 1973: 99-100) */əm = rɔ/ > mɛ

Meje on the other hand shows fused subject/TAM auxiliary forms within a split/doubled structure, with tense marked on the lexical verb, and subject doubly encoded, once on the lexical verb and once on the tense-marked pronoun that itself derived from the fusing of an original auxiliary verb with a subject marker or pronoun.

(767) SUBJ.PRON SUBJ-LV-TA < SUBJ-AV SUBJ-LV-TA

(768) <u>Meje</u>

    má   bhó   ú   méku-a
    1:AUX already there 1:come-NPST
    'I'm already (in the process of) coming' (McKee 1991: 167)

In the southeastern Plateau language Fyem an AVC with a tensed pronoun in a (split/)doubled inflectional pattern is found in the hodiernal past.

(769) SUBJ.AV/PRON_{<TAM>} SUBJ.AV/PRON_{<TAM>} LV-OBJ

(770) a. <u>Fyem</u>   b. <u>Fyem</u>

    ínki náá wun-o   *uki   ti   wun-uŋ*
    1.HOD 1.PRF see-2OBJ   2.HOD 2.PRF see-1OBJ
    'I saw you earlier today'   'you saw me earlier today'
    (Nettle 1998: 41)

12.7 Complex verb forms derived from fused AVCs. Fused complex verb forms
deriving from AUX-headed AVCs are frequently attested in the languages of the MSB.
Again, there is some debate among specialists as to what exactly constitutes a fused or
univerbated structure, and what remains synchronically bi-partite. Thus, under some
analyses, Kwa languages show complex verb forms derived from fused AUX-headed
structures, such as Standard Ewe, Akan, or Nkonya, while other researchers claim no
fusing has occurred in such forms. As mentioned above, whether an obligatory index of a
functional category is phonologically incorporated, 'cliticized' or independent has
nothing to do with its status as an inflectional index.

(771) SUBJ-TA-LV < *?SUBJ-AV LV

(772) <u>Standard Ewe</u>

    m-á-yi
    1-FUT-go
    'I will go'(Heine and Reh 1984: 131; Westermann 1907: 63)

(773) <u>Akan</u>

    ɔ-bɛ́-tɔ́   bì
    3-FUT-buy   some
    's/he will buy some' (Osam 2004: 7)

(774) SUBJ.TA-LV < SUBJ-AV LV

(775) Nkonya [Guang, Kwa, Niger-Congo; Ghana]

nɔɔ-hɔ	*fɔɔ-hɔ*	*mlɛɛ-hɔ*	*bɔɔ-hɔ*
1.FUT-buy	2.FUT-buy	2PL.FUT-buy	3PL.FUT-buy
'I'll buy'	'you will buy'	'you (pl) will buy'	'they will buy'

(Reineke 1972: 51)

Another example of this type of fused AUX-headed structure yielding a complex verb form in a language of the MSB comes from the perfect form in the Amo (Timap) language of the Kainiji genetic unit as described by Di Luzio (1972).

(776) a. Amo   b. Amo

    ǹ-na-sù   *ù-na-sù*
    1-AUX.PRF-do   2-AUX.PRF-do
    'I often did'   'you often did'
    (Di Luzio 1972: 36)

This Kainji language has many interesting complex verb forms derived from fused AVCs that reflect different original inflectional patterns. Thus the habitual form in Amo represents a fused form with an original doubly subject inflected pattern.

(777) SUBJ-TA-SUBJ-LV   < ?*SUBJ-AV SUBJ-LV

(778) a. Amo   b. Amo

    ń-sà-n-sû   *u-sà-u-sû*
    1-AUX.HAB-1-do   2-AUX.HAB-2-do
    'I often do'   'you often do'

  c. Amo   d. Amo

    u-wasà-ù-yenè   *i-wasà-ì-dâ*
    2-AUX.HAB-2-see   3PL-AUX-3PL-come
    'you often see, saw'   'they often came, come'
    (Di Luzio 1972: 36)

Indeed the only seemingly secure example of a fused split inflectional structure in a complex verb form in my corpus from languages of the MSB linguistic area also comes from Amo. Here the usual split pattern of the subject on the auxiliary and object on the lexical verb is fused into a large complex in the future form.

(779) SUBJ-TA-LV-OBJ   < ?*SUBJ-AV LV-OBJ

(780) Amo

　　　ù-bà-yen-i
　　　2-FUT-see-1
　　　'you will see me' (Di Luzio 1972: 27)

As mentioned above, fused subject/auxiliary 'tensed pronouns' are relatively common among languages of the MSB linguistic area. Further fusing of these forms with lexical or auxiliary verbs into complex verb forms is also found among languages of this region. Such fused/fused formations are found in a small number of languages like the Mba-Ubangi language Ma.

(781) SUBJ.TA-AV INF-LV   < *SUBJ-AV [SUBJ-]AV   INF-LV

(782) Ma

　　　nà-zùlà　　*kâ-sùbù*　　*nɔŋgbɔ*
　　　1.PST-AUX　INF-eat:*bù*　　meat
　　　'I was eating meat' (Tucker and Bryan 1966: 127)

However, it is of course possible that more such formations exist in the languages of the MSB, but have been differently interpreted in the analyses of these languages, due to the constraints of the analytical traditions from which various researchers come (e.g., the anglophone vs. the francophone traditions) that were mentioned in passing above.

　　　As I said at the beginning of this section, languages of the Macro-Sudan Belt are predominantly AUX V. However, variation may be seen within a single construction in

one and the same language, as is the case in Mamvu (a language of the Mangbutu-Efe genetic unit) in the following formation, where AUX V order alternates with V AUX:[43]

(783) a. <u>Mamvu</u>   b. <u>Mamvu</u>

       ɔ̀bɛ   *mu-taju*   *mu-taju*   ɔ́bɛ
       dance   1-AUX   1-AUX   dance
       'I was dancing'   'I was dancing'
       (Heine and Reh 1984: 126; Vorbichler 1971: 248-50)

AH	Barambu; Morokodo; Gula Méré; Bangi Me; Adamawa Fulani; Ogbronuagom; Bijogo; Ewe; Echie; 'Dongo; Izi; Mbodomo
AH ~ 2x	Ngambay-Moundou; Diola Fogny
2x	Mbay; Gula Méré; Dyola; Bagirmi; Kana; Akan; Twi; Ma'di
"2x"	Kirma; Tyurama; Laal; Gade; Jalonke
split	Eleme; Ewe; Doyayo
"split"/LH	Laal
S/2	Ibibio; Ogbronuagom; Eleme; Mbay; Doyayo; Amo; Òkó
LH	Mödö; Bongo; Mbay
S/TAM/P	Neyo; Klao; Kpelle; Guro; Mende; Wolof; Bagirmi; Duka; Meje; Ga; Fyem; 'Bozom; Fali; Dadiya; Nafaara; Ndut-Falor; Idũ; Tarok; Rigwe; KoHumono; Wobé; Kulango; Tiv; Ndemli
fAH	Ewe; Nkonya; Akan; 'Dongo; Amo
f2x	Amo
f-split	Amo
f/fS/TAM/P	Ma

Table 16: Inflection in selected languages of the Macro-Sudan Belt

12.8 Summary. Languages of the Macro-Sudan Belt are characterized by a predilection to AUX-headed or doubled inflectional patterns in AVCs. LEX-headed formations in the area are mainly limited to languages of the Bongo-Bagirmi family. Split/doubled

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[43] Note that the tonal qualities of the lexical verbs varies with the position of the auxiliary in Mamvu.

formations mainly occur in Cross-River languages and the Benue-Congo isolate Òkó which bear some close structural affinities with Bantu languages; the one exception is Mbay, although Bantu influence cannot be ruled out in this case either.

Different analytic traditions interpret word-structure in the languages of the MSB as either tending toward quasi-isolating (francophone tradition) or synthetic structures (anglophone tradition). Thus, many languages of the MSB are analyzed as showing doubled inflection but unbound 'agreement', pronouns or argument-encoding markers. Split patterns of this sort are also attested in languages of the MSB. Indeed, given these differing analytic traditions it is difficult to know whether the relative paucity of complex verb forms deriving from fused auxiliary structures is an artefact of these kinds of analyses or represent a valid typological observation for the languages of this linguistic area. One exception to this seeming relative lack of fused AVCs is the relative frequency with which fused subject-cum-auxiliary forms are found among the languages of the MSB attested in the guise of 'tense-marked pronouns' in representative languages from across the different component genetic units of the area.

13 'Sahara' spread zone

The area to the north of the Macro-Sudan Belt, the 'Sahara' region, encompasses several genetic units. Roughly speaking there appears to be a northern section, mainly where Berber languages, Arabic and N/W Nubian are found, and a southern and central area where languages belonging to the Saharan, Maban, Taman, Daju, Songhay, and Dogon families are spoken. The languages of the southern and central area tend to have V AUX order (except Songhay) while those of the northern region rather reflect AUX V order, so perhaps we are dealing with two separate spread zones here.

13.1 AUX-headed formations in languages of the 'Sahara.' AUX-headed formations are not overly common *per se* in languages of the 'Sahara' region, but light verb structures that have the form of AUX-headed AVCs are widely attested (as mentioned in Section 4.2 above in discussing the grammaticalized uses of 'say' in African languages). Some of the AUX-headed formations below may in fact be more properly speaking examples of this type of light verb structure. Typically the lexical verb in AUX-headed (quasi-light verb forms) appears in the stem form. Such is true in the Saharan language Beria/Zaghawa.

(784) LV   OBJ-AV-SUBJ-DECL/AFFRM/ASSRTV

(785) <u>Beria/Zaghawa</u>

> *sàì*　　*tɛ́=í-ɽ-ī*
> taper　　1PL.OBJ-AUX-3.SUBJ-AFFRM:IMPF
> 'il va nous taper'　(Jacobi and Crass 2004: 66)

Maban languages of Chad show similar forms, as the following Aiki (Runga) and Maba forms exemplify:

(786) <u>Aiki</u> [Runga]

> *ndòbó*　　*tí*　　*jím*　　*t-ráŋ-t-ὲ*
> la viande　　ANAPH　　pourrir　　3-AUX-FUT-ASSRTV
> 'la viande va pourrir'　(Nougayrol 1989: 65)

(787) <u>Maba</u>

> *ɔ̀:-lì-gù*　　　*súŋɔ́:-nú-gù*　*mbòkɔ́d*　*t-ír-ì*
> wind-SG-DEF　　tree-DEF-ACC　　break　　3SG-AUX-DECL
> 'the wind has destroyed the trees'　(Dimmendaal 2010: 23)

13.2 Light verb formations in languages of the 'Sahara.'　As mentioned above, a characteristic feature of the languages of the 'Sahara' region include relatively frequent use of light verbs 'say' or 'do' as an inflectional base with an uninflecting lexical element. Such constructions are formally identical to AUX-headed AVCs with an unmarked lexical verb. Languages exhibiting this type of formation among the languages of the 'Sahara' region include Tama, where both 'say' (789) and 'do' are used in this manner (790).

(788) Light Verb Constructions: 'LV' SUBJ.LightVerb-TA　LightVerb = 'do', 'say'

(789) <u>Tama</u>

    ànáá-tá   wút   nú-ŋó
    down-LOC   fall   1SG:say-PRF
    'I fell down to the ground'
    (Dimmendaal 2009a: 314)

(790) <u>Tama</u>

    wâ   kíríŋén-ír   ès-îŋ   dóól [↓]ná-ŋá
    1SG:NOM door-SPEC   3SG-ACC open 1SG.do-PRF
    'I opened the door for him/her' (Dimmendaal 2009a: 326)

Fur has a similar quasi-AUX headed light verb formation as well; in the following example the inflected light verb means 'do'.

(791) <u>Fur</u>

    násɪ-^ŋ   k-éé-ŋ   léwa   na   Ɂurí-ŋá-`sí   duoŋ
    CONT TR-PST:DUR   PL-3SG-GEN goat.PL and   sheep-PL-ACC herding

    pɪɪ   Ɂɛllɛ-ᵞŋ   kĭlɪ
    3SG.DO.IMPF village-GEN in.nearness

    'he was continually herding his goats and sheep near the village'
    (Dimmendaal 2010: 22)

A similar formation is seen in the Maban language Aiki using 'do' as the light verb. This suggests the form offered above may well be another example of this quasi-AUX-headed light verb structure.

(792)   'LV': OBJ-SUBJ-LightVerb-ASSRTV

(793) <u>Aiki</u> [Runga]

> *àndèi   tὲnɛ́   cákám   mbə́-t-ə́rŋ-ὲ*
> goat   he   to.sell   2-3-do-ASSRTV
> 'he sold you his goat' (Nougayrol 1989: 57)

Infinitive-marked lexical verb complements to emergent auxiliaries, that serve as input structures to the grammaticalization of AUX-headed formations, can be seen in such languages of the 'Sahara' region as Midob Nubian and Dar Daju Daju.

(794) LV:INF   'AV':SUBJ.TA

(795) <u>Midob</u>

> *ə́yélé   sə́əré   kèllàwa*
> I now   go:INF   want:1SG.INDIC.CONT
> 'I want to go now' (Werner 1993: 58)

(796)   'AV'-TA   REDPL:LV-INF

(797) <u>Dar Daju Daju</u>

> *sa wiɑ-e   osos-ke   ki sug-ne*
> 3PL   want-PRS   go:REDPL-INF   to market-CLS.SG.1
> 'they want to go to the market' (Aviles 2008: 52)

13.3 Other patterns of inflection in AVCs in languages of the 'Sahara.' Doubled inflection is mainly unattested among the languages of the 'Sahara'. True split inflection is likewise almost unknown among the languages of the region.

In this context it is somewhat bizarre that split/doubled forms are not overly uncommon in languages of the 'Sahara' region. Thus, Egyptian Arabic double marks subject, but aspect is expressed either non-concatenatively (perfective) or non-concatenatively plus affixally (in the imperfective) in the following AVCs:

(798) AV:TA:SUBJ   LV:TA:SUBJ

(799) a. <u>Egyptian Arabic</u>   b. <u>Egyptian Arabic</u>

      ʕali   kaan   katab   ʕali   ḥaykuun   katab
      Ali AUX:PST:3M write:PRF:3M   Ali   AUX:FUT:3M write:PRF:3M
      'Ali had written'   'Ali will have written'
      (Jelinek 1983: 26)

(800) AV:TA:SUBJ ASP:TA-LV:TA:SUBJ

(801) <u>Egyptian Arabic</u>

      ʕali   kaan/ḥaykuun   biyiktib
      Ali   AUX:PST:3M/AUX:FUT:3M IMPF:write:3M
      'Ali was/will be writing' (Jelinek 1983: 26)

Negative forms of these have the negative on the auxiliary verb alone, thus exhibiting a different kind of split/doubled pattern.

(802) NEG-AV:TA:SUBJ-NEG   LV:TA:SUBJ

(803) a. <u>Egyptian Arabic</u>

      ʕali   ma-kan-š   katab
      Ali NEG-AUX:PST:3M-NEG write:PRF:3M
      'Ali had not written' (Jelinek 1983: 33)

   b. <u>Egyptian Arabic</u>

      ʕali   ma-ḥaykun-š   katab
      Ali   NEG-AUX:FUT:3M-NEG AUX:FUT:3M write:PRF:3M
      'Ali won't have written' (Jelinek 1983: 33)

Masalit of the Maban family is another language of the 'Sahara' region that shows split doubled inflectional patterns in a number of AVCs. Subject is the doubly marked category as is usual in split/doubled patterns, but the lexical verb appears in a variety of

non-finite, construction-dependent forms (including a Ø-marked stem form), with tense encoded on the auxiliary:

(804) SUBJ-LV[-DEP]   SUBJ-AV

(805) a. Masalit   b. Masalit

    g-oosiŋ-to   *g-ɛ*   *g-oosiŋ-ni*   *g-ɛ*
    2-know:BASE.II-PRTCPL   2-do   2-know:BASE.II-NR.FUT 2-do
    'you try to know'   'you are about to know'

    c. Masalit

    g-oosiŋ   *g-ɛ*
    2-know:BASE.II 2-do
    'you do know already'
    (Edgar 1989: 28)

(806) SUBJ-LV[-DEP]   SUBJ-AV-TNS

(807) a. Masalit   b. Masalit

    g-oosiŋ   *g-ay-ɛ*   *g-oosiŋ-to*   *n-ind-ɛ*
    2-know:BASE.II 2-go-PRS   2-know.BASE.II-PRTCPL 2-want-PRS
    'you are going to know'   'you want/need to know'
    (Edgar 1989: 23)   (Edgar 1989: 29)

    c. Masalit

    g-oos-o   *j-iy-ɛ*
    2-know-PRTCPL 2-be-PRS
    'you knew' (Edgar 1989: 29)

(808) SUBJ-LV-NEG SUBJ-AV-TNS

(809) Masalit

    g-oos-gede   *j-iy-ɛ*
    2-know-NEG   2-be-PRS
    'you didn't know' (Edgar 1989: 29)

In the Saharan language Kanuri, lexical verbs appear in a converb or conjunctive form within various AVCs which encodes the subject of the verb. This appears with subject- and negative-marking in the following forms that therefore reflect a a special type of split/doubled inflectional pattern:

(810) AV:SUBJ:CONJ   LV-Light.Verb:SUBJ:TA-NEG[:TA:SUBJ]

(811) a. Kanuri

    ráksə̀   *rùwòj-înbâ*
    can:3:CONJ   write:3:say-IMPF:NEG
    'he cannot write' (Hutchison 1981: 323)

    b. Kanuri

    fàndə́kè   *lè-n-gə̂nyí*
    find:1:CONJ   go-say-1:PRF.NEG
    'I didn't get to go' (Hutchison 1981: 323)

LEX-headed constructions occur in languages of the 'Sahara' region more frequently than they do in many other regions of Africa. Two such languages include modern Dar Daju Daju and Ancient Egyptian:

(812) AV   LV-TA

(813) Dar Daju Daju

    na ki   *idan-i*   *awdiŋ-ce*
    I IRR hear-NPRS   bird-CLS.SG.2
    'I will hear the bird' (Aviles 2008: 61)

(814) AV LV:TA SUBJ

(815) <u>Ancient Egyptian</u>

> *jH   ḏd   tn   n   ḫrdw   tn*
> AUX   parler:PROSP 2PL   PREP enfant:PL 2PL
> 'parlez a vos fils!' (Oréal 2008: 169)

Berber languages make relatively frequent use of LEX-headed AVCs; included in this group are negative auxiliaries in some languages.

(816) AV   SUBJ-LV:TA

(817) "Berber"

> *ur   yə-kriz*
> NEG   3MSG-plough/NPRF
> 'he didn't [hasn't] plough[ed]' (Mettouchi 2009: 293)

In Tamashek, second position clitics (including object clitics) stack up on the otherwise uninflecting clause-initial auxiliary yielding what appears to be a split inflectional pattern but rather might be considered a pseudo-split LEX-headed one instead.

(818) AV=OBJ LV:ASP-SUBJmimics AV-OBJ LV-SUBJ structure

(819) a. <u>Tamashek</u>

> *a=tt=ín   ìtaw-æɣ*
> FUT=3M.OBJ=CENTRIF forget-1SG.SUBJ
> 'I will forget him' (Heath 2005: 17)

b. <u>Tamashek</u>

> *kælà=tt   əle-ɣ*
> PST=3M.OBJ have:PRF-1SG.SUBJ
> 'I used to have it' (Heath 2005: 585)

13.4 Complex verb forms deriving from fused AVCs in the 'Sahara.' Fused AUX-headed formations are found in various languages of the 'Sahara' region, but fused light verb structures appear to be more common. Fused AUX-headed formations where the lexical verb retains its fused form traces of the dependent form inherited from the original AVC that underlies the complex verb form are found in Coptic.

(820) TA-SUBJ-LV:INF < AV-SUBJ LV:INF

(821) <u>Coptic</u>

      hah   *n-sɔp*   *ʃa-k-aspadzə* *n-ta-taprə*   *awo* *jə*
      many   of-occasion HAB-2M-kiss:INF PREP-POSS:1S-mouth CNJ COMP

      ʃa-k-ənkɔtk   *hijn-u-pɔj*   *n-wot*   *nmma-j* *n-tə-wʃɨ*
      HAB-2M-sleep:INF on-INDEF-bed   ATTR-single with-1S in-ART.F-night

      tɨr-s
      all-3F

     '... you frequently kissed her on the mouth and that you used to sleep
       with her in a single bed all night'
    (Kammerzell and Peust 2002: 312)

Fused light verb forms with the light verb 'say' are at the heart of many Saharan verb forms, e.g. in Zaghawa or Kanuri. This is a family-level feature of Saharan; for more details see Cyffer (1991).

(822) LV-SUBJ-LightVerb-TA<   LV SUBJ-LightVerb-TA

(823) <u>Zaghawa</u>

     nɔ́:-gé-n-í
     see-3-LIGHT-TA
     's/he sees' (Cyffer 1991: 80)

(824) LV-SUBJ:TA:NEG <   LVSUBJ:LightVerb:TA.NEG

(825) a. <u>Kanuri</u>   b. <u>Kanuri</u>

      bú-kə́nà   *bú-kə̀nyí*
      eat-1:PRF   eat-1:NEG:COMPL
      'I have eaten'   'I have not eaten'
      (Hutchison 1981: 120)

Fused doubled subject forms are found in the folllowing Coptic past form. The lexical verb in the original AVC, despite being inflected for subject, seems to have been in an infinitive form in pre-Coptic.

(826) TA-SUBJ-LV:INF-SUBJ   < ?* AV-SUBJ   LV:INF-SUBJ

(827) <u>Coptic</u>

      a-s-jɔː-s   *gar   na-j   nkʲi   ta-ʃːrə*   *jə*
      PST-3F-say:INF-3F   PRTCL for-1S PRTCL POSS:1S-daughter   COMP
      'my daughter told me that... '
      (Kammerzell and Peust 2002: 312)

Tama on the other hand has fused light verb structures with doubled subject marking. As is typical of languages of the Sahara region (and 'Ethiopia' as well (section 11)), the light verb incorporated in this Tama form derives from 'say'.

(828) SUBJ-LV-SUBJ:LightVerb-TA   < ?*SUBJ-LV SUBJ-LightVerb-TA

(829) <u>Tama</u>

      nì-tíín-↓nú-ŋó
      1SG-dream-1SG:say-PRF
      'I dreamed' (Dimmendaal 2009a: 314)

A fused split structure may be found in the following complex verb form from Egyptian. Note that the lexical verb appeared in a semi-finite form, encoding object but nevertheless appearing in an infinitive form.

(830) TA-SUBJ-LV:INF-OBJ   < ?*AV:SUBJ LV:INF:OBJ

(831) <u>Egyptian</u>

>   *jw:j-z>w-k   jw:j-jn-t-k   jw-k-wd>-tj*
>   FUT:1S-protect:INF-2M FUT:1S-bring:INF-2M   comp-2M-be.safe:STAT-2S
>   'he always says he would protect you, he would bring you back safe'
>   (Kammerzell and Peust 2002: 309)

Masalit has a small number of complex verb forms that derive from fused AVCs that had a split/doubled inflectional pattern.

(832) SUBJ-LV-DEP-[NEG]-(SUBJ:)TA   < ?*SUBJ-LV-DEP-[NEG]   SUBJ-AV

(833) a. <u>Masalit</u>   b. <u>Masalit</u>

>   *g-oosiŋ-jɛnisɛ*   *g-oosiŋ-kɛdɛ-jɛnisɛ*
>   2-know.BASE.II-(2:)PST.HAB   2-know.BASE.II-NEG-(2:)PST.HAB
>   'you used to know'   'you didn't used to know'
>   (Edgar 1989: 29)   (Edgar 1989: 29)

Fused subject/auxiliary forms that themselves are further fused into large complex verb forms are characteristic of several languages of the region. In Midob Nubian, the resulting forms often bear little resemblance to each other, cf. the 1.INDIC.PRF (835a) and the 1.INDIC.CONT (835b).

(834)   LV-SUBJ:TA   < ?*LV SUBJ:TA   < ?*LV SUBJ:AV_{⟨TA⟩}

(835) a. <u>Midob</u>

>   *ə́y   àabéddí   áar-hèm*
>   I   bird[:INDEF] catch-1.INDIC.PRF
>   'I caught a bird' (Werner 1993: 67)

b. <u>Midob</u>

> *ə̀y   nèn   àabédd   áar-òwà*
> I   this   bird   catch-1.INDIC.CONT
> 'I catch this bird' (Werner 1993: 67)

Dar Daju Daju shows a similar phenomena to that in the Nubian languages above, but here the markers are transparently related to each other.

(836)   LV-SUBJ:TA   < ?*LV SUBJ:TA   < ?*LV SUBJ-AV_{<TA>}

(837) a. <u>Dar Daju Daju</u>

> *kona   or-cina   bor-ne*
> 1PL.INCL see-1PL.INCL.PROG hyena-CLS.SG.1
> 'we see/are looking at a hyena' (Aviles 2008: 60)

b. <u>Dar Daju Daju</u>

> *ur-tina*
> drink-PST.ITER.1PL.INCL
> 'we drank repeatedly' (Aviles 2008: 58)

That this process has been active in the region is suggested by the presence of such forms in Later Egyptian sources, as in the following light verb example:

(838) LightVerb-SUBJ.TA LV   < ?*LightVerb AV_{<TA>}:SUBJ   LV

(839) <u>Later Egyptian</u>

> *irj-i   smtj*
> do-1SG.PRF   examine
> 'I examined (the documents) (Cohen et al. 2002: 239)

13.5 Summary.   The languages of the 'Sahara' region show a significant tendecy towards complex verb forms derived from the fusing of various types of constructions. Rather than auxiliary verbs, the default complex predicate structure in the languages of

the 'Sahara' region is a light verb formation using a light verb meaning 'say' or 'do' (or both as in Tama). Fused formations incorporating light verbs are a family-wide feature of the Saharan family (Kanuri, Zaghawa). In addition to the overall relative frequency of fused formations in languages of this region, there is also a higher than typical incidence of LEX-headed formations among them. Synchronically bi-partite AVCs with either a doubled inflectional pattern or a split one are not attested in the languages of my corpus from this region, and even AUX-headed formations are rather uncommon, but perhaps surprisingly split/doubled AVCs are well attested.

AH	Aiki (Runga), Maba; Beria/Zaghawa
light verbs	Tama; Fur; Aiki; Later Egyptian
S/2	Egyptian Arabic; Masalit; Kanuri
LH	Dar Daju Daju; Ancient Egyptian; Berber; Tamashek
fAH	Coptic
f-light	Zaghawa; Kanuri; Tama (=2x)
f2x	Coptic
f-split	Egyptian
fS/2	Masalit
f/fS/TAM/P	Midob; Dar Daju Daju; Later Egyptian

Table 17: AVC Inflection in selected languages of the 'Sahara' region

14 Nuba Hills residual zone

One area of extreme linguistic diversity in Africa is the Nuba Hills residual or fragmentation zone. A modest number of languages are found in this region which belong to a large number of different genetic units. I have data on nineteen languages of the area, belonging to ten genetic units. This set includes Daju (Shatt), Heiban (Heiban-Ebang, Tira, Otoro, Moro), Kado (Krongo, Katcha), Katla (Katla, Tima), Lafofa, Nyimang (Nyimang and Dinik), Rashad (Orig, Tumale, Tagoi, Rashad), Talodi (Masakin/Ngile, Talodi), Temein, and of course Nubian (Dilling and Ghulfan (Uncunwee)).

This diverse array of languages possess a staggeringly large set of inflectional patterns of AVCs and variation within and across their grammars. In terms of the relative linear

order or phrasal syntax of auxiliary verbs and lexical verbs in AVCs, a small number of language groups in the Nuba Hills area show V AUX dominant order (Nubian, Rashad), and others show AUX V (e.g., Heiban, Talodi, Temein, or Shatt Daju). Fused structures or certain constructions that reflect the opposite order in a given language or genetic unit are also not infrequently found in Nuba Hills languages, e.g. V-AUX fused structure in the otherwise dominant AUX V Katla language (cf. Hadza in the discussion of Tanzanian Rift Valley (section 10 above) for another example of such a phemomenon).

14.1 AUX-headed formations in Nuba Hills languages. The familiar AUX-headed pattern of inflection of AVCs is widely attested in the languages of this region. Infinitive- (here locative-) marked lexical verbs in AUX-headed AVCs are found in the Kado language Krongo.

(840) SUBJ-AV INF:LOC-LV

(841) <u>Krongo</u>

     m-ákká   k-áadìyà
     3F-FUT.AUX INF:LOC-come
     'she will come' (Reh 1985: 188)

Note that the prohibitive formation in Krongo also represents an AVC of this structural type.

(842) AV$_{<[PL:]PHB>}$ INF:LOC-LV

(843) <u>Krongo</u>

     òolú   k-áafàrà
     PL:PHB   INF.LOC-cry
     'don't cry! (Reh 1985: 197)

Similar AUX-headed formations are attested in its sister language Katcha. Here the subject-marking is more complex appearing in a circumfix form, the suffix of which specifies the person of the subject.

(844) SUBJ$_i$-AV-SUBJ$_j$ INF-LV

(845) <u>Katcha</u>

    n-ar-aa   <u>*t*</u>*-ɔɛ*
    1/2-FUT-1   INF-drink
    'I shall drink' (Tucker and Bryan 1966: 309)

Heiban Kordofanian languages also show AUX-headed formations, although the auxiliary verb may encode either the person/number (1st/2nd person forms) or class/number features (3rd person forms) of a subject in Heiban Kordfonanian languages like Otoro or Tira.

(846)   SUBJ.CLS-AV PREP INF:LV

(847) <u>Otoro</u>

    ŋi gw-ujɔ   *gi*   *ðidhira*
    1 CLSFR.SG-AUX.PST PREP INF:sleep:II
    'I was sleeping' (Stevenson 2009: 267)

(848)   SUBJ-AV   INF-LV

(849) <u>Tira</u>

    e-ve   *dhə-ndra*
    1-AUX.DEF   INF-sleep:DEF
    'I was/have been sleeping' (Stevenson 2009: 71)

Unmarked lexical verbs (or Ø-marked lexical verbs) are found in AUX-headed structures like the following AVC in Lafofa.

(850) SUBJ-AV LV

(851) <u>Lafofa</u> ('Kordofanian')

> *i-<u>de</u>   <u>t</u>ia(i) ko*
> 1-AUX   field   hoe
> 'I hoe the field'   (Tucker and Bryan 1966: 284)

In Nyimang, lexical verbs appear in one of two different construction-determined forms in quasi-AUX-headed AVCs marking progressive and future:[44]

(852) AV   LV:DEP

(853) a. <u>Nyimang</u>

> *kɛr   a   kwonɔ   ka   tam*
> woman   VB.PRTCL meat   AUX   eat.INDEF
> 'woman is eating meat' (Tucker and Bryan 1966: 251)

b. <u>Nyimang</u>

> *kɛr   a   ka   kwonɔ   <u>t</u>al*
> woman   VB.PRTCL AUX   meat   eat.DEF
> 'woman will eat meat (Tucker and Bryan 1966: 251)

14.2 Doubled inflection in AVCs in languages of the Nuba Hills. Doubled subject inflection is common in the languages of the Nuba Hills region. Moro of the Heiban Kordofanian family shows the simplest system of doubled subject inflection in the negative past:

(854) SUBJ-AV SUBJ-LV

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[44] In these examples the auxiliaries appear to be uninflected[-looking]; note that the exact nature of inflection in Nyimang remains relatively little investigated and the overall structure of the Nyimang verbal system is still obscure and poorly understood.

(855) <u>Moro</u>

> *i-gero   i-gaberta*
> 1-NEG.PST   1-have
> 'I didn't have' (Dryer 2009: 309; Black and Black 1971: 20)

Other members of the Heiban family may show only class marking, rather than person/number of the subject on both the lexical verb and the auxiliary verb. Such kinds of AVCs are found across the family, e.g. in Heiban or Otoro:

(856) SUBJ.CLS-AV   SUBJ.CLS-LV

(857) <u>Heiban</u>

> *nyi   gwa   gwithi*
> 1   CLSFR.SG:AUX   CLSFR.SG:go/come
> 'I am going' or 'I am coming' (Stevenson 2009: 77)

(858) <u>Otoro</u>

> *ŋi gwɔ   gwu-dhirɔ*
> 1   CLSFR.SG-AUX   CLSFR.SG-sleep.I
> 'I am sleeping' (Stevenson 2009: 232)

(859)   SUBJ.CLS-AV_{<NEG>} SUBJ.CLS-LV CONEG

(860) <u>Otoro</u>

> *ŋi gw-atɛ   gwu-dhirɔ   nɔ*
> 1   CLSFR.SG-NEG.AUX CLSFR.SG-sleep CONEG
> 'I do/did not sleep' (Stevenson 2009: 239)

Compare the following Otoro and Tira forms. Both reflect doubled inflectional patterns. In Otoro, class-marking is doubled in the negative auxiliary formation, while in the present progressive formation in its sister language Tira, both the class marker and the subject (pronoun) are doubly encoded.

(861) Subj.ProN SUBJ.CLS-AV   SUBJ.CLS-LV

(862) <u>Otoro</u>

> *anaŋa*   *l-atɛ*   *li-dhirɔ*   *nɔ*
> we   CLSFR.PL-NEG.AUX   CLSFR.PL-sleep   CONEG
> 'we do/did not sleep' (Stevenson 2009: 239)

(863)   Subj[ProN] SUBJ.CLS-AV   Subj.[ProN] SUBJ.CLS-LV

(864) <u>Tira</u>

> *nya*   *l-ou*   *nya*   *l-ɛthɔ*
> 1PL   CLSFR.PL-AUX   1PL   CLSFR.PL-come:INDEF
> 'we are coming' (Stevenson 2009: 69)

Doubled subject marking with a dependent marked lexical verb is found in Temein:

(865) SUBJ-AV-FIN SUBJ-LV:DEP

(866) a. <u>Temein</u>

> *ŋa-m-a*   *ŋa-lam*   *ntɛt̪*   *isaatın*
> 1-AUX-FIN   1-eat.DEP   meat   tomorrow
> 'I am going to eat meat tomorrow' (Tucker and Bryan 1966: 259)

b. <u>Temein</u>

> *kit̪a-m-a* *kit̪a-r-ɛ*   *kit̪a-lam*
> 2PL-AUX-FIN 2PL-AUX-FIN   2PL-eat.DEP
> 'you (PL) will eat' (Tucker and Bryan 1966: 259)

The system of doubled subject inflection is quite complex in Shatt Daju. Two different series of markers (*ka-* vs. *a-* for first singular, respectively), predictably labelled definite and indefinite by Tucker and Bryan (1966), are used. All four logical combinations are attested, e.g. the AVC *–nj-+-e*, 2x <*a-, a-*> marks present progressive in Shatt Daju, the

AVC *–nj-+-e,* 2x *<ka-, a->* encodes past progressive, the AVC *–wuŋ,* 2x *<a- ka->* marks future perfect the AVC *–wuŋ,* 2x *<ka- ka->* encodes irrealis:

(867) SUBJ$_a$-AV$_{<nj>}$ SUBJ$_a$-LV-*e*$_{<DEP>}$

(868) <u>Shatt Daju</u>

     agönaŋ a-nj-u   a-si-e   iya
     I   1.INDEF-AUX-*u* 1.INDEF-eat-*e*   meat
     'I am eating meat' (Tucker and Bryan 1966: 240)

(869) SUBJ$_b$-AV$_{<nj>}$ SUBJ$_a$-LV-*e*$_{<DEP>}$

(870) <u>Shatt Daju</u>

     agönaŋ ka-nj-u   a-si-e   iya
     I   1.DEF-AUX-*u* 1.INDEF-eat-*e*   meat
     'I was eating meat' (Tucker and Bryan 1966: 240)

(871) SUBJ$_a$-AV$_{<wuŋ>}$ SUBJ$_b$-LV

(872) <u>Shatt Daju</u>

     agönaŋ a-wuŋ   ka-si
     I   1.INDEF-AUX 1.DEF-eat
     'I shall have eaten meat' (Tucker and Bryan 1966: 240)

(873) SUBJ$_b$-AV$_{<wuŋ>}$ SUBJ$_b$-LV

(874) <u>Shatt Daju</u>

     Agönaŋ ka-wuŋ   ka-si
     I   1.DEF-AUX   1.DEF-eat
     'I should have eaten meat' (Tucker and Bryan 1966: 240)

14.3 Split inflectional patterns in AVCs in Nuba Hills languages. Split inflection is also not uncommon in languages of the Nuba Hills. Thus, in Lafofa, subject may appear on the auxiliary and aspect on the lexical verb in the following form:

(875)   SUBJ-AV   LV-ASP

(876) <u>Lafofa</u> ('Kordofanian')

    ṭia(i) i-<u>d</u>e   kwo-ṭan
    field   1-AUX hoe-ASP
    'I hoed the field' (Tucker and Bryan 1966: 284)

The following Katcha formation reflects a similar type of split inflectional construction but with a dependent marked lexical verb. Subject is marked by the characteristic circumfix of Katcha, with perfective aspect encoded on the infinitive-marked lexical verb.

(877) SUBJ$_i$-AV-SUBJ$_j$ INF-ASP-LV

(878) <u>Katcha</u>

    n-as-aa   <u>t</u>-ag-ɔɛ
    1/2-COMPL-1   INF-ASP-drink
    'I had drunk' (Tucker and Bryan 1966: 309)

A characteristic feature of Rashad Kordofanian languages that set them apart from other languages of the Nuba Hills area is the presence of not only V AUX word order, but also the use of split inflection in the negative form of most AVCs. As mentioned above, such split-inflected forms are found in negative AVCs in Orig, Rashad, Tagoi and Tumale. This thus can be reconstructed as a feature of proto-Rashad.

(879)   NEG-LV   SUBJ-AV$_{<TA>}$

(880) a. <u>Orig</u>   b. <u>Orig</u>

    tùgə́n k-àyá   *ŋ-ɛn*   *nègə́n k-àyá*   *d-írìn*
    he   NEG-drink 3-AUX.PRS   they   NEG-drink 3PL-AUX.PST
    'he does not drink'   'they did not drink'
    (Schadeberg and Elias 1979: 52)

(881) <u>Rashad</u>

    ŋi fas   *k-eyɛ*   *y-ɛn*
    I   meat   NEG-eat 1-AUX
    'I am not eating meat' (Tucker and Bryan 1966: 297)

(882) <u>Tagoi</u>

    yigɪn ŋifi   *k-eyak*   *y-ɛn*
    I   meat NEG-eat 1-AUX
    'I am not eating meat' (Tucker and Bryan 1966: 297)

(883) <u>Tumale</u>

    ŋgi   *k-alma*   *y-en*
    I   NEG-gather 1-AUX
    'I am not eating meat' (Tucker and Bryan 1966: 297)

14.4 Split/Doubled inflection in AVCs in languages of the Nuba Hills. Split/doubled inflection is uncommonly found in AVCs among the languages of the Nuba Hills. One such formation can however be found in Ebang. In Ebang (Heiban Kordofanian), the class of the subject is doubly-marked, but object appears on the lexical verb alone in the future AVC:

(884)   SUBJ.CLS-AV SUBJ.CLS-OBJ-LV

(885) Ebang

> *ŋi-bupo kw.eleny abi   ŋ-aji   ŋ-aji-l-wurejo*
> CNC-seek Lord   but   CNC-FUT CNC-2PL.OBJ-PL-return
> 'the Lord needs it and will return it to you'
> (Schadeberg and Kossmann 2010: 95)

14.5 LEX-headed formations in languages of the Nuba Hills. LEX-headed formations are found in such languages of the Nuba Hills region as Temein of the Temein family:

(886) AV SUBJ-TA-LV-FIN

(887) Temein

> *nan   kɛnɛ   ŋɛ-tɪ-tɪp-ɛ*
> I   PROG/HAB   1-PST-put-FIN
> 'I was going to put'   'I would have put'
> (Tucker and Bryan 1966: 259)

Another example of a LEX-headed AVC can be seen in the future formation in Katla of the Katla family.

(888)   AV SUBJ-LV

(889) Katla

> *nyɔŋ kari   ny-a-bʊk*
> I   FUT   1-TV-drink
> 'I shall drink' (Tucker and Bryan 1966: 268)

14.6 Fused subject/auxiliary forms. Fused subject auxiliary forms are very marked among the languages of the Nuba Hills. In my database, only Dinik of the Nyimang genetic unit shows a formation with what appears to be a resumptive/agreement element, here found within something akin to an AUX-headed formation with a dependent marked lexical verb.

(890) SUBJ:AV$_{<TAM>}$ LV:DEP

(891) a. <u>Dinik</u>   b. <u>Dinik</u>

   ói kwòn kɪ ʈəmɛ̀n   *ói kwòn ká tɜ̀lɔ̀*
   I meat 1:IPFV eat:INDEF:DEP I   meat 1:PFV eat:DEP
   'I am eating/eat meat'   'I ate meat'
   (Stevenson et al. 1992: 9)

14.7 Complex verb derived from fused AVCs in Nuba Hills languages. Fused AUX-headed formations are also found in the languages of the Nuba Hills. In Dilling of the Nubian family, a fused AUX-headed structure deriving from a V-AUX construction is found in the future formation:

(892) LV-TA-SUBJ ＜?*LV AV-SUBJ

(893) <u>Dilling Hill Nubian</u>

   hur-ʃe-re
   kill-FUT-1
   'I shall kill' (Tucker and Bryan 1966: 324)

In combination with a co-negative element, a negative fused auxiliary structure is attested in Tima of the Katla family.

(894) NEG-SUBJ-LV ... =CONEG ＜?* AV_{<NEG>}-SUBJLV... =CONEG

(895) a. <u>Tima</u>

   kí-ŋ̀-kʌ́[↓]lúk kɨ́dʌ̀ kábɜ̀h-ʌ́ʌ̀ŋ
   NEG-1-eat   1SG   meat-CONEG
   'I don't eat meat' (Dimmendaal 2009b: 343)

b. <u>Tima</u>

> *kí-hìʌ́-↓dʌ́ tàmáá ɗumùrík-ʌ́ʌ̀ŋ*
> NEG-speak-1 language Tima-CONEG
> 'I don't speak Tima' (Dimmendaal 2009b: 346)

Fused double subject formations are also found in Tima. Such is the case in the progressive present and the negative past forms.

(896) TA-SUBJ-LV-SUBJ_{<DEP>}   < ?*AV-SUBJ LV-SUBJ_{<DEP>}

(897) <u>Tima</u>

> *ǹcʌ́-ŋ̀-kéél-↓dʌ́ ímmɔ̀ŋ*
> PROG-1-buy-1 fish
> 'I am buying fish' (Dimmendaal 2009b: 339)

(898) NEG-SUBJ-LV-SUBJ_{<DEP>} ... =CONEG
   < ?*AV_{<NEG.PST>}-SUBJ LV-SUBJ_{<DEP>}...=CONEG

(899) <u>Tima</u>

> *kí-ŋ̀-kéél-↓dʌ́ ímmɔ̀ŋ-ɔ́ɔ̀ŋ*
> NEG-1-buy-1 fish-NEG
> 'I did not buy fish' (Dimmendaal 2009b: 345)

Complex verb forms derived from fused split/doubled constructions are attested in Tima and Otoro. In Tima, the object marker is encoded on the lexical verb as expected in split/doubled patterns of this sort.

(900) TA-SUBJ-LV-SUBJ_{<DEP>}-OBJ < ?*AV-SUBJ   LV-SUBJ_{<DEP>}-OBJ

(901) <u>Tima</u>

    ǹcʌ́-ɲ̀-cán-dʌ́-ŋàŋ   *ŋ̀-kìɽììɽí*
    PROG-1-hit-1-2   PREP-firewood
    'I will hit you with a piece of brushy firewood'
    (Dimmendaal 2009b: 342)

In Otoro on the other hand, it appears to be the object (or perhaps it is the absolutive argument) that is doubly encoded in the following complex perfect form (903). This form appears to be highly anomalous within the areal typology of languages of the Nuba Hills

(902) ABS/OBJ-TA-ERG/SUBJ-ABS/OBJ-LV
    <?* ABS/OBJ-AV   ERG/SUBJ-ABS/OBJ-LV

(903) <u>Otoro</u>

    ŋa   *li-m-a-l-pi*
    2   3PL-PRF-2-3PL-hit
    'you have hit them' (Stevenson 2009: 185)

The Rashad Kordofanian language Tumale has a complex verb form that appears to derive from a fused LEX-headed structure:

(904) SUBJ[:TA]-LV-TA   <?*SUBJ[:TA]-LV AV

(905) <u>Tumale</u>

    ya-lmak-ruŋen
    1.PRS-gather-FUT
    'I shall gather' (Tucker and Bryan 1966: 296)

Fused formations in which fused subject/auxiliary forms have been incorporated are also attested in the languages of the region. Deriving from a V-AUX structure one finds complex verb forms of this type in Ghulfan/Uncunwee Nubian:

(906)   LV-SUBJ:TA < ?LV AV_{<TA>}:SUBJ

(907) a. <u>Ghulfan </u>(Uncunwee)

     yĕ gīrjūlú-gí   *bīg-έέrē*
     I money:PL-ACC   lose-PST:1SG
     'I lost the money' (Dimmendaal 2010: 28)

   b. <u>Ghulfan</u> (Uncunwee)

     yĕ ànàbnáŋ   *bíjὲ*   *kɔ̀tá-ní-έbέ*
     I my.grandparent beer   bring-APPL-PST.II:1SG
     'I brought beer to [one of] my grandparents'
     (Dimmendaal 2010: 28)

   c. <u>Ghulfan</u> (Uncunwee)

     yĕ à   ↘*ók-kὲrὲ*
     I you:ACC beat-FUT.1SG
     'I will beat you' (Dimmendaal 2010: 28)

In Rashad on the other hand, these forms reflect the fusing of a construction with an original AUX-V order:

(908) SUBJ:TA-LV <?*SUBJ:-V$_{<TA>}$ LV

(909) a. <u>Rashad</u>   b. <u>Rashad</u>   c. <u>Rashad</u>   d. <u>Rashad</u>

     |*ya-tkan*   *yε-*|*tkan*   *yɪ-kɔr*|ᵃ*k*   *yɔ- kɔr*|ᵃ*k*
     1.PRS-cook   1.PST-cook   1.PRS-steal   1.PST-steal
     'I cook'   'I cooked'   'I steal'   'I stole'
     (Tucker and Bryan 1966: 290-291)

The Talodi Kordofanian language Masakin (Ngile) has several other instantiations of this pattern, two deriving from a fusing of an original AUX-V structure (911a-911b) and one from a putative original V-AUX order (913).

(910) SUBJ:TA-LV <?*SUBJ:AV$_{<TA>}$ LV

(911) a. <u>Masakin</u>   b. <u>Masakin</u>

      ŋ-ome   *ŋa-yu*   *ŋir*   *ŋ-ome ka-yu*   *ŋir*
      CLS-boy 3M.PROG-drink water   CLS-boy 3M.PRS-drink water
      'the boy is drinking water'   'the boy drinks water'
      (Tucker and Bryan 1966: 287)

(912)   LV-SUBJ:TA   < ?* LV SUBJ:AV$_{<TA>}$

(913) <u>Masakin</u>

    yu-<u>no</u>   *ŋ-ome*   *ŋir*
    drink-3M.PST CLS-boy water
    'the boy drank water' (Tucker and Bryan 1966: 287)

14.8 Summary. The heterogeneous group of languages of the residual or fragmentation zone of central Sudan known as the Nuba Hills show a wide variety of inflectional patterns in their auxiliary structures. Unlike languages of the 'Sahara', Nuba Hills languages show a considerable range of AUX-headed, doubled and split inflectional patterns in AVCs. However, like a number of other areas in northeastern Africa, complex verb forms deriving from fused AVCs are common, in particular those in which the auxiliary components themselves consisted of forms deriving from the fusing of subject marking and original auxiliaries in what I call fused/fused formations. Note that this is particularly common in the languages of the Nuba Hills that show V Aux order, e.g. Nubian or Rashad Kordofanian, although they are not limited to languages of this type *per se*, as they are found in Masakin (Talodi Kordofanian) as well (though complex fused forms may be found in Masakin that appear to derive from a fused V-Aux structure of this type).

AH	Krongo; Katcha; Otoro; Tira; Lafofa; ?Nyimang
2x	Moro; Heiban; Otoro; Tira; Temein; Shatt Daju
split	Orig; Rashad; Tagoi; Tumale; Lafofa
S/2	Ebang
LH	Temein; Katla
fAH	Dilling; Tima
f2x	Tima
fS/2	Tima; Otoro
f/fS/TAM/P	Tumale; Ghulfan (Uncunwee); Rashad; Masakin (Ngile)

Table 18: Patterns of inflection in languages of the Nuba Hills region

15 Summary

The use of two verbal elements in conventionalized functional matrices called here auxiliary verb constructions is widespread among the languages of Africa. In this presentation, I have discussed how the wide variety of complex predicate phenomena argue for careful distinctions among their syntactic, semantic, and morphosyntactic properties. While such constructions vary relatively minor ways syntactically and semantically across languages, there is considerable variation with respect to the formal patterns of encoding morphosyntactic or functional properties in AVCs. Such variation falls into five large macro-patterns. All patterns are attested within the structures of not only synchronically bipartite auxiliary formations, but also in fused complex synthetic verb forms that derive from each of these patterns when viewing the languages of Africa as a whole.

Why is there such great variation morphosyntactically in AVCs? The answer in part has to do with the heterogeneous constructional source pool that feeds the development of such formations. In particular, it is clear that not only do three broad constructional source types need to be reckoned as input for AVCs, viz., embedded structures, serialized structures, and clause-chained formations, but also sub-types within these broad categories. Each of these subtypes yields a fairly restricted set of target AVC structures. Thus, depending on its degree of finiteness (from fully non-finite to partially or largely finite) and the original valence features of its source verbal elements, an embedded structure may yield AUX-headed, doubled, or even split/doubled AVC structures, while

nuclear serialized structures tend to yield LEX-headed or split inflectional systems, and core-serialized forms tend to develop into doubled and split-doubled formations.

Both split and split/doubled systems, at least when dealing with splits in encoding of argument properties, generally show a correlation with the valency of the original source elements, regardless of the construction type that they originate in: when transitive complements or V_2 verbs are used with intransitive V_1, split or split/doubled systems are often the result, while correspondence in valence between the two original verbs entering into the AVC more frequently yield AUX-headed or doubled inflectional structures.

Lastly, although there is considerable variation within and across recognized taxonomic or geographic groups of African languages, the languages of certain genetic units and linguistic areas show propensity to a sub-set of these patterns. Such examples include the relative frequency of split/doubled inflection in Bantu vs. other genetic units, a pattern with doubled-subject inflection with a modal dependent lexical verb in Nilotic, the predominance of fused AUX-headed formations in Khoe, LEX-headed formations and light verb constructions in languages of the 'Sahara' region or the fused subject-cum-auxiliary forms functioning as tense-marked pronouns in languages of the Macro-Sudan Belt.

Abbreviations Used:

1	1st person	15	Class 15
1PL	1st person plural	1S	1st person singular
2	2nd person	2PL	2nd person plural
2X	Doubled Pattern	3	3rd person
3M	3rd person masculine	3PL	3rd person plural
ACC	Accusative	ACCOMPLI	Accomplished
ADV	Adverbial	AFFRM	Affirmative
AH	AUX-headed Pattern	ANAPH	Anaphoric
ANIM	Animate	ANT	Anterior
AOR	Aorist	APPL	Applicative
ART	Article	ASP	Aspect
ASSC	Associative	ASSRTV	Assertive
ATTR	Attributive	AUGM	Augment
AUX	Auxiliary	BEN	Benefactive
CAP	Capabilitive	CAUS	Causative
CENTRIF	Centrifugal	CLS	Class
CLSFR	Classifier	COMPL	Completive
CNC	Concord	CNNCTV	Connective
COMP	Complementizer	COMPL	Completive
COND	Conditional	CONEG	Conegative
CONJ	Conjunctive	CONSEC	Consecutive
CONSTR	Construct	CONT	Continuous
COP	Copula	CV	Converb
DAT	Dative	DECL	Declarative
DEF	Definite	DEM	Demonstrative
DEONT	Deontic	DEP	Dependent
DER	Derivation[al]	DES	Desiderative
DESCR	Descriptive	DISTR	Distributive
DL	Dual	DO	Direct Object
DUR	Durative	EMPH	Emphatic
EPIPAT	Epipatetic	EPN	Epenthetic
ERG	Ergative	EXCL	Exclusive
EXPL	Expletive	EXT	Extension
F[EM]	Feminine	FACT	Fact[it]ive
FIN	Finite	FOC	Focus
FUT	Future	FV	Final Vowel

GEN	Genitive	GER	Gerund
HAB	Habitual	HOD	Hodiernal
HORT	Hortative	I	Class-I active non-past
I	Active non-past (Khwe)	II	Active past marker
II	Class-II	ICP	Intransitive Copy Pronoun
IMM	Immediate	IMP	Inactive
INCH	Inchoative	INCL	Inclusive
INCOMPL	Incompletive	INDIC	Indicative
INDEF	Indefinite	INDEP	Independent
INF	Infinitive	INJ	Injunctive
INT	Intentional	IO	Indirect Object
IPFV	Imperfective	IRR	Irrealis
ITER	Iterative	JNCT	Junctural
LIGHT	Light Verb	LNGTH	Length
LOC	Locative	LOG	Logophoric Pronoun
M	Masculine	MOD	Modal
NPST	Non-Past	NAR	Narrative
NEC	Necessative	NEG	Negative
NFUT	Non-Future	NOM	Nominative
NR	Near	OBJ	Object
OBLQ	Oblique	OM	Object Marker
OPT	Optative	OVS	Open Vowel Suffix
P	Passive	PFX	Prefix
PGN	Person Gender Number	PHB	Prohibitive
PL	Plural	PLUP	Pluperfect
PM	Predicate Marker	PNL	Positional
POSS	Possessive	POT	Potential
PP	Postposition	PREP	Preposition
PREPRO	Prepronominal	PRF	Perfect
PRFV	Perfective	PROG	Progressive
PRON	Pronominal	PROSP	Prospective
PROX	Proximate	PRS	Present
PRSTV	Persistive	PRTCL	Particle
PRTCPL	Participle	PST	Past
PV	Preverb	Q	Question
REC	Recent	REDPL	Reduplication

REL	Relative	REM	Remote
RLS	Realis	RSLT	Resultative
SAY	'Say' as light verb	SBJNCTV	Subjunctive
SEQ	Sequential	SFX	Suffix
SG	Singular	SIM	Simultaneity
SIT	Situative	SM	Subject Marker
SS	Same Subject	STAT	Stative
SUBJ	Subject	SV	Serial Verb
TA	Tense/Aspect	TNS	Tense
TOP	Topic	TR	Transitive
TV	Thematic Vowel	VB	Verb
VENT	Ven[ti]tive	VI	Class-VI
VN	Verbal Noun		
AV	Auxiliary Verb		
AVC	Auxiliary Verb Construction		
CCC	Clause Chained Construction		
f/fS/TAM/P	Fused/fused Subject/TAM/Polarity morph formation		
LH	LEX-headed Pattern		
LV	Lexical Verb		
MSB	Macro-Sudan Belt		
(f)S/TAM/P	Fused Subject/TAM/Polarity morph		
SVC	Serial Verb Construction		
VCC	Verb Complement Construct		

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Appendices

Appendix-1a: List of languages with sources consulted

Language	*Sources*
!Ora	Vossen 1997
!Xõo Lone Tree	Güldemann 2005/2010a, Dickens/Traill 1977, Collins 1998
!Xun	König & Heine 2001, König 2009a
//Ani	Heine 1986, 1999, Güldemann & Vossen 2000
ǂHoan	Gruber 1978, Collins 1998, Collins 2001, 2002
ǂUngkue	Güldemann 2005
|Xam	Bleek 1928-30
Aari	Hayward 1990
Acholi	Bavin 1983, Heine & Reh 1984, Heine 1993
Adamawa Fulani	Stennes 1967
Ader Hausa	Caron 1989
Afar	Bliese 1976, Cohen et al. 2002
Afuzare, see Izere	
Aghem	Hyman 1985, 2010
Aiki [Runga]	Nougayrol 1989
Aka	Bender 1993
Akan	Osam 2004, Bodomo 1998
Akoose	Hedinger 1985, 2008
Akwa	Aksenova 1997
Alaaba	Schneider-Blum 2007, 2009
Alagwa	Kießling 2007
Amharic	Leyew 2003
Amo	Di Luzio 1972
Anexo-Ewe	Heine & Reh 1984
Angas	Burquest 1973/1980
Anyi	Pyne 1972/1980
Anywa	Reh 1996
(A)Teso	Hilders & Lawrance 1956, Heine & Reh 1984
Avatime	Westermann and Bryan 1952
Awak	Jungraithmayr 1968/1969
Ayu	Gerhardt 2008

Baale	Yigezu & Dimmendaal 1998
Babungo	Schaub 1985
Bafia	Aroga Bessong & Mel'chuk 1983
Bagirmi	Tucker & Bryan 1966, Stevenson 1969
Baka	Killian-Hatz 1995
Baka	Tucker & Bryan 1966
Balondo	Kuperus 1982
Bambara	Tröbs 2009, Koné 1984, Kastenholz 1998, Idiatov 2000
Bamileke see Yemba (Dschang)	
Banda Nchumuru	Cleal 1973d/1980; Price 1975/1980
Baŋgi Me	Blench 2007; Hantgan 2008-ms
Banka (Samogo)	Kastenholz 2003
Barambu	Tucker & Bryan 1966
Bari	Spagnolo 1933, Tucker & Bryan 1966, Heine & Reh 1984
Basaa	Nurse 2008
Bassa	Marchese 1986
Baule	Kouadio N'Guessan 2000, Timyan 1975/1980
Beja	Hudson 1976b, Vanhove 2004, 2007, Tucker & Bryan 1966
Bejamso-Grubi Nchumuru	Cleal 1973d/1980; Price 1975/1980
Bekwarra	Stanford 1973/1980
Bemba	Nurse 2008
'Berber'	Mettouchi 2009, McClelland 2000
Berom/Birom	Bouquiaux 1970; Blench 2006c
Berta	Tiulzi et al. 1976, Cerulli 1947
Bété	Marchese 1986
Beya Lega	Botne 2003a
Bijogo	Segerer 2002
Bilin	Böhm 1993
Bobo-Fing	Heine & Reh 1984
Boko/Busa	Jones 1998
Bokobaru	Jones 1998
Bolanci	Lukas 1970, 1971
Bongo	Santandrea 1963, Tucker & Bryan 1966
Borobo	Claudi 1988
'Bozom	Moñino 1995
Buamu	Manessy 1960, 1983

Buduma	Lukas 1939, Pawlak 2001
Buem/Lelemi	Allan 1973/1980
Buga-/Anda	Vossen 1997
Bukusu	Aksenova 1997, Nurse 2008
Bulu	Alexandre 1966
Bungu	Nurse 2008
Burak	Jungraithmayr 1968/1969
Burji	Hudson 1976a
Burrum (Boghom)	Jungraithmayr 1965
Bushoong	Nurse 2008
ɓʊmɔ Ijo	Williamson 1991
C. B. K	de Rop 1963
C. B. L	de Rop 1963
Cara	Vossen 1997
Chaha Gurage	Ford 1991
Chichewa	Bentley and Kulemeka 2001
Chip	Jungraithmayr 1965
Ciyao	Whiteley 1966, Botne 1986
Coptic[†]	Cohen et al. 2002
Daba	Lienhard 1980
Dabarro Somali	Heine & Reh 1984
Dadiya	Jungraithmayr 1968/1969
Daffo Ron	Schuh 1976
Dagaare	Bodomo 1997, 1998
Dahalo	Tosco 1991
Dangme	Kropp-Dakubu 1988
Dan Blowo	Vydrine 2009, Èrman 2002
Dan-Gweeta	Vydrine 2009, Cherndytseva 2002
Dar Daju Daju	Aviles 2008
Dasenech	Sasse 1976
Datooga	Kießling et al. 2008
Defaka	Jenewari 1983
Degema	Kari 1997
Dera-Kanakuru	Zaborskij 1975
Dewoin	Marchese 1982, Marchese 1986

Dho-Alur	Knappert 1963
Dholuo	Okombo 1991
Didinga	Bryan 1955, Tucker & Bryan 1966, Driberg 1931
Dilling	Tucker & Bryan 1966
Dime (Dim-Af)	Fleming 1990, Seyoum 2007
Dinik (Afitti)	Stevenson et al. 1992
Dinka	Nebel 1948, Hieda 1991
Diola	Sapir 1973/1980
Diola-Fogny	Heine 1993
Dizi (Maji)	Allen 1976b
'Dogon'	Plungian 1995
Dɔgɔ́ sɔ̀	Calame-Griaule 1974/1980
Dongolese	Armbruster 1960, Cohen et al. 2002
Donno Sɔ	Prost 1969(a)
Dott/Zoɗi	Caron 2002
Doyayo	Wiering & Wiering 1994
Duala	Ittmann 1939; Heine & Reh 1984
Duka	Bendor-Samuel et al. 1973
Duma	Nurse 2008
Dyola	Givón 1973, Marchese 1986
Dzalamo	Meinhof 1948
'Dongo	Tucker & Bryan 1966
Ebang/Heiban	Schadeberg & Kossmann 2010
Ebira/Igbirra	Scholz 1973/1980
Echie	Ndimele 2003
Edo	Agheyisi 1991, 1987
Ega	Bole-Richard nd, Bole-Richard 1983
Eggon	Sibomana 1985
Egyptian Arabic	Jelinek 1983
Egyptian[†]	Oréal 2008, Kammerzell & Peust 2002
Ejagham	Watters 1981, Watters 2000
EkeGusii	Aksenova 1997, Nurse 2008
Ekpeye	Clark nd/1980
Eleme	Bond 2006, 2010; field notes; Bond & Anderson 2003, 2005
Eloyi	Mackay 1968/1980
Emai	Schaefer & Egbokhare 2007, 2008
Engenni	Thomas 1978, Lord 1993

Eton	van de Velde 2008
Eunda	Baucom 1972
Evale	Baucom 1972
Ewe	Schadeberg 1985, Allen 1993, Pasch 1995, Ameka 2006a, Ameka 2006b,Westermann 1907, 1911, Heine & Reh 1984
Ewondo	Aksenova 1997, Nurse 2008, Güldemann 2007, Redden 1979
Fadicca (Nobiin)	Tucker & Bryan 1966
Fali	Ennulat 1973/1980
Fer	Boyeldieu 1987
Fongbe	Manfredi 2005-ms
Frafra	Schaefer & Asakiyah 1975/1980
Fula	Arnott 1968/1980
Fur	Tucker & Bryan 1966, Jakobi 1989, Dimmendaal 2010
Fyem	Nettle 1998a, 1998b
Ga	Kropp-Dakubu 1988
Gaam	Bender 1989
Gade	Sterk 1994
Gawwada Dullay	Tosco 2010
Gbaeson Krahn	Marchese 1986
Gbaya 'Buli	Moñino 1995
Gbaya Kaka	Tucker & Bryan 1966
Gehode	Cleal 1973a
Genyanga	Cleal 1973b
Gerka (Yiwom)	Jungraithmayr 1965
Ghulfan	Dimmendaal 2010
Gidar	Frajzyngier 2008
Gidole	Zaborskij 1975
Gik[u]yu	Nurse 2008
Gimira (Benchnon)	Breeze 1990
Giryama	Nurse 2008
Godie	Marchese and Gratrix 1974/1980, Marchese 1986
Goemai	Hellwig 2006
Gogo	Nurse 2008
Gokana	Wagner 1985, Roberts 1985, Dryer 2009
Gonga (Kefa/Kafa)	Fleming 1976

Grebo	Marchese 1986
Gula Méré	Nougayrol 1999
Gula Sara	Nougayrol 1999
Gula Zura	Nougayrol 1999
Gumuz	Bender 1979, Ahland 2010
Gùrdùŋ	Haruna 2003
Guro	Vydrine 2009
Guus/Sigidi	Caron 2001
Gwama	Leyew no date
Gworok/Kagoro	Adwiraah 1989
Haddiya	Hudson 1976a
Hadza	Sands to appear-a, Sands to appear-b
Hamer	Lydall 1976
Harar Oromo	Owens 1985
Haro	Woldemariam 2009
Hausa	Newman 2000, Heine & Reh 1984, Schachter 1985
Haya	Salone 1979, Nurse 2008
Hdi	Frajzyngier & Shay 2002
Heiban	Stevenson 2009, Schadeberg 1981a
Hemba	Aksenova 1997, Nurse 2008
Herero	Meinhof 1948
Holoholo	Nurse 2008
Hʊne	Storch 2009a, Storch 1999a 1999b
Hung'an	Nurse 2008
Hungu	Nurse 2008
Ibibio	Essien 1987, 1991
Idũ	Blench 2010
Igbo	Ndimele 2009, Green & Igwe 1963, Emenanjo 1991, 1985
Ik	Heine 1976a, 1976b, König 2002, König 2009b
Ila	Nurse 2008
Inor	Suter 2007
Iraqw	Mous 1993
Izere	Lukas & Willms 1961, Wolff & Meyer-Bahlburg 1979, Gerhardt 1984
Izi	Bendor-Samuel 1968
Jalonke	Lüpke 2009
Jamsay	Heath 2008
Jibə	Storch 1999a, 1999b

Jiddu Somali	Heine & Reh 1984
Jo[wulu]	Kim 2002?
Ju/'hoan	Dickens 2005, Güldemann and Vossen 2000, Collins 2001
Kabba	Moser 2005
Kafima	Baucom 1972
Kaguru	Torrend 1891
Kahugu	Westermann and Bryan 1952
Kako	Ernst 1995
Kalabari Ijo	Jenewari 1983
Kamba	Nurse 2008
Kambaata	Hudson 1976a
Kana	Ikoro 1996
Kanuri	Cyffer 1978, Hutchison 1981, Jarrett 1981
Kara	Santandrea 1970
Karang	Ngang David 1999
Karekare	Lukas 1970-71, Schuh 1976
Karimojong	Novelli 1985, Dryer 2009
Katcha	Tucker & Bryan 1966, Stevenson 1957a, 1957b, 1957c
Katla	Tucker & Bryan 1966; Dryer 2009
Kelo	Bender 1993
Kemantney	Leyew 2003
KenyanPidgin Swahili	Heine and Reh 1984
Kenyang	Mbuagbaw 2008
Kerewe	Kießling et al. 2008
Khoe/Khwe/Kxoe	Köhler 1962, 1981, Vossen 1997, Heine & Reh 1984, Killian-Hatz 2006, 2008, 2009
Kikongo	Heine & Reh 1984, Nurse 2008
Kilba	Grieve 1973/1980
(Ki)Matumbi	Nurse 2008, Odden 1996
Kimbu	Nurse 2003
Kinyarwanda	Kimenyi 1979, Kimenyi 1980, Hurel 1911, Botne 1986, Aksenova 1997, Nurse 2008, Cadiou 1985
Kirma	Prost 1964; Heine & Reh 1984
Kirundi	Botne 1986
Kisi	Childs 1995
Kituba	Heine & Reh 1984

Klao	Marchese 1982, Marchese 1986
Koegu	Hieda 1998, 1992
Kohumono	Cook 1972/1980
Kolokuma Ijo/Izon	Williamson 1965, Timitimi 1973/1980, Williamson 1991
Kolonkadhi	Baucom 1972
Kom	Schultz 1997
Koma	Tucker & Bryan 1966, Dryer 2009
Konde	Meinhof 1948
Kondjara Fur	Zylharz 1926
Konkomba	Adouna 2009
Koyo	Marchese 1982, Marchese 1986
Koyra Chiini	Heath 1999
Kpelle	Welmers 1973, Heine & Reh 1984
Krachi	Cleal 1973c
Krahn	Marchese 1986
Kresh	Tucker & Bryan 1966, Brown 1991
Krongo	Reh 1985
Kua	Heine 1986
Kulango	Elders 2007
Kunama	Tucker & Bryan 1966, Thompson 1976b, Bender 1996
Kuri(y)a	Aksenova 1997
Kuteb	Koops and Bendor-Samuel 1974, Storch 2009b
Kuwaa	Marchese 1986
Kwama	Leyew no date
Kwambi	Baucom 1972
Kwami	Leger 1994
Laadi	Aksenova 1997
Laal	Boyeldieu 1982
Lafofa	Tucker & Bryan 1966
Lamba	Doke 1938, Botne 1986
Langi	Nurse 2008
Lango	Bavin 1983, Heine & Reh 1984, Noonan 1992
Later Egyptian[†]	Cohen et al. 2002
Lele	Frajzyngier 2001
Lese	Tucker & Bryan 1966
Likpe	Allan 1974/1980, Ameka 2005, 2009
Limbum	Fiore and Peck 1973/1980

Linda	Claorec-Heiss 1986, Watters 2000
Lingala	Mufwene 1978, Heine 1991, Brisard and Meeuwis 2009
Lobedu	Kotzé 2004
Lokaa	Iwara 1991
Lorhon	Person 1973/1980
Lotuko	Muratori 1938, Heine & Reh 1984
Lua/Niellim	Boyeldieu 1985
Luba	Nurse 2008
Lucazi	Fleisch 2000, Nurse 2008
Luganda	Botne 1986, Aksenova 1997
Lugbara	Tucker & Bryan 1966, Crazzolara 1960
Luguru	Nurse 1979b, Botne 1990
Lunda	Kawasha 2006
Lungu	Nurse 2008
Luvale	Horton 1949
Lyaa	Aksenova 1997, Nurse 2008
Ma	Tucker & Bryan 1966, Dryer 2009
Maale	Amha 2001
Maasai	Tucker & Mpaayei 1955, Dimmendaal 1983, Hamaya 1993
Maba	Dimmendaal 2010, Lukas 1933, 1952
Mabiha	Harries 1940, Botne 1999
Mada	Blench 2006a, 2006b
Ma'di	Tucker & Bryan 1966, Blackings & Fabb 2003
Majang	Unseth 1989, 1991
Makonde	Meinhof 1948
Makua-Maverone	Kröger 2010
Malgwa	Löhr 2002, Dryer 2009
Mambila	Perrin 1973/1980, Heine & Reh 1984
Mamvu	Tucker & Bryan 1966, Vorbichler 1971, Heine & Reh 1984
Manding	Tröbs 2009, Dumestre 2003, Kastenholz 1998
Mangbetu	Larochette 1958, Tucker & Bryan 1966
Maninka	Heine & Reh 1984
Mankon	Leroy 2007
Mano	Vydrine 2009
Masakin (Ngile)	Tucker & Bryan 1966
Masalit	Edgar 1989

Mayogo	Tucker & Bryan 1966
Mba	Tucker & Bryan 1966
Mbalanhu	Fourie 1993
Mbandja	Baucom 1972
Mbay	Keegan 1997
Mbe	Pohlig 1981
Mbembe	Barnwell nd/1980
Mbodomo	Boyd 1997, Boyd 2003
Mbugwe	Mous 2004
Mbuko	Gravina 2001
Mbum	Hagège 1970
Me'en	Will 1998
Meeka	Beyer 2009, Kastenholz 2002
Meje	Larochette 1958, Mckee 1991
Mende	Migeod 1908, Innes 1969, Heine & Reh 1984
Merey	Gravina 2007
Midob	Werner 1993
Mínà	Houngues & Hutchison 1999
Minagbe	Manfredi 2005-ms
Mödö	Persson and Persson 1991
Mofu-Gudur	Pohlig 1992
Molo	Bender 1993
Moloko	Friesen and Mamalis 2004
Montol	Jungraithmayr 1965
Moro	Black & Black 1971; Dryer 2009
Morokodo	Tucker & Bryan 1966
Moru	Tucker & Bryan 1966
Mpoto	Nurse 2008
Mubi	Jungraithmayr 1987
Mudung Somali	Heine & Reh 1984
Muher	Meyer 2007
Mundabli	Good and Lovegren 2009
Mundu	Tucker & Bryan 1966
Murle	Tucker & Bryan 1966, Lyth 1971, Arensen 1979, 1982
Mursi	Turton & Bender 1976
Musgu	Meyer-Bahlburg 1972
Muyang	Smith 2002/2006, 2010

Mwera	Nurse 2008
N Tonga	Torrend 1891, Lombard 1978
N. Sotho	Lombard 1978, Lepota 2002, Kotzé 2004, Pretorius 2006, Nurse 2008
N|uu	Collins 2004, Güldemann 2010
Nafaara	Jordan and Jordan 1975/1980
Nama	Vossen 1997
Nande	Nurse 2008
Nandi	Creider 1989, Creider & Tapsubei Creider 1989
Naro	Heine 1986
Nawuri	Casali 1995
Ndamba	Nurse 2008
Ndebele	Ziervogel 1959, Moosally 1998
Ndemli	Ngoran 1999
Ndendeule	Güldemann 2003
Ndogo	Santandrea 1961
Ndut-Falor	Pichl 1973a/1980
Nera	Thompson 1976a
Neyo	Marchese 1982, Marchese 1986
Ngambay-Moundou	Vandame 1963, Heine & Reh 1984
Ngandjera	Baucom 1972
Ngbandi	Tucker & Bryan 1966
Ngiti	Kutsch Lojenga 1994
Ngizim	Schuh 1976
Nkonya	Reineke 1972
Nkore-Kiga	Taylor 1985
Nomaande	Wilkendorff 2001
Non	Pichl 1973b/1980
Noni	Hyman 1981
North Ibie	Schaefer and Masagbor 1984
Ntandu	Aksenova 1997
Nupe	Smith 1967/1980
Nyakyusa	Aksenova 1997
Nyimang	Stevenson et al. 1992, Tucker & Bryan 1966, Stevenson 1957a, 1957b, 1957c
Nymawezi	Nurse 2008
Nyo	Marchese 1986

Obolo (Andoni)	Aaron 1999, Rowland-Oke 2003
Ogbronuagom (Bukuma)	Kari 2000
Òkó /Ogori	Akerejola 2008, HH Ologori of Ogori/Elugbe nd/1980a
Okpamberi	HH Ologori of Ogori/Elugbe nd/1980b
-heri	
Old Nubian[†]	Browne 2002
Ongota	Fleming et al. 1992-93, Fleming 2006, Savà & Tosco 2000, 2003
Onicha Igbo	Ndimele 2009
Orig	Schadeberg & Elias 1979
Oromo of Wellega	Gragg 1976
Oshikwanyama	Zimmermann & Hesheela 1998
Otoro	Stevenson 2009, Stevenson 1957a, 1957b, 1957c
Pajade (Badiaranke)	Ducos 1974/1980
Pambia	Tucker & Bryan 1966
Pare	Nurse 1979a, Botne 1990
Pero	Frajzyngier 1989
Pimbwe	Nurse 2008
Pokomo	Nurse 2008
Polci	Caron 2008
pre-Swahili	Heine & Reh 1984
Proto-Kru	Marchese 1986
Punu	Hadermann 1996
Rashad	Tucker & Bryan 1966
(I)Rigwe	Blench and Gya Daniel 2009
Ruri	Nurse 2008
S Tonga	Lombard 1978
S'aamakko Dullay	Hayward 1989, Savà 2005
Sai Gumuz	Bender 1979
Samba Leko	Fabre 2003, 2009
	Eaton 2010a, 2010b, Eaton 2003, Kießling 2002, Elderkin 1986, van de
Sandawe	Kamenade 1954, Dempwolff 1916
Sango	Samarin 1967, Heine & Reh 1984
Sapo	Marchese 1986
Sara	Tucker & Bryan 1966
Sayanci	Schneeberg 1971
Sele	Allen 1973/1980
Sena	Nurse 2008

Sese Gumuz	Uzar 1989, Bender 1979
Sesotho	Guma 1971, Paroz 1946, Malete 2003
Setswana	*Sharpe 1980, Cole 1955, Setshedi 1974, Matseke 1968, Chaphole 1988, Creissels 1998a, 1998b, 2000, 2002, 2003*
Shabo	Teferra 1991
Shambaa	Nurse 2008
Shambala	Aksenova 1997, Mfwumba Beshe 1989
Shatt	Tucker & Bryan 1966
Shona	Fortune 1955, Dale 1972, Güldemann 2002, Nurse 2008, O'Neil 1935
Sidamo	Hudson 1976a, Gebre-Tsadik 1985
Sil'te	Meyer 2007, Gutt 1997
Siluyana	Givón 1971
Siswati	Ziervogel and Mabuza 1976, Botne 1986, Kiyomi & Davis 1992
Siwu	Komra Iddah 1975/1980
So	Carlin 1993, Heine 1974/1975, Heine 1976b, Heine & Reh 1984
Somali	Orwin 1995, Heine & Reh 1984, Lamberti 1986
Songye	Nurse 2008, Stappers 1964
Sonjo	Nurse and Rottland 1994
Strandberg |Xam	Güldemann 2010a
Sukuma(-Kiiya)	Nurse 2008; Kiesling et al. 2008
Sumbwa	Nurse 2008
Supyire	Carlson 1994
Swahili	Givón 1971, Aksenova 1997, field notes
Swazi (see Siswati)	Ziervogel 1952
Tagoi	Tucker & Bryan 1966
Talodi	Tucker & Bryan 1966, Schadeberg 1981b
Tama	Bryan 1955, Dimmendaal 2009a
Tamashek	Heath 2005b
Tamazight	Abdel-Massih 1968
Tarok	Sibomana 1981
Tasawaq	Wolff and Alidou 2001
Tchien Krahn	Marchese 1986
Temein	Tucker & Bryan 1966
Tennet	Dimmendaal 1998, Randal 1998
Tepo	Marchese 1986

Tigrinya	Leslau 1968, Blansitt 1975, Heine & Reh 1984
Tikar	Stanley 1991
Tima	Dimmendaal 2009b
Tira	Stevenson 2009
Tiv	Arnott 1958, 1967/1980
Togbo	Tucker & Bryan 1966
Tondi Songway Kiini	Heath 2005a
Tonga	Torrend 1891, Nurse 2008
Tsongo	Nurse 2008
Tsotso	Hardemann 1996
Tubu (Tedaga)	Lukas 1953
Tumale	Tucker & Bryan 1966
Tumbuka	Nurse 2008, Botne 1993
Turkana	Dimmendaal 1983
Twi	Lord 1993, Christaller 1875/1881
Tyurama	Prost 1964; Heine & Reh 1984
Uduk	Tucker & Bryan 1966
Ukaan	Sallfner 2009, 2010, Jungraithmayr 1973
Umbundu	Valente 1964; Heine & Reh 1984, Schadeberg 1990
ut-Ma'in	Smith 2007
Vamé	Kinnaird 2006
Vata	Marchese 1986
Venda	Heine 1993, Nurse 2008, Ziervogel & Dau 1961, Musehane 2007
Vute	Guarisma 1978, Thwing 2006 Güldemann 2007, Thwing & Watters 1987
W. !Xoon	Güldemann 2010a
Wannu	Storch 1999
Wapan/Wukari	Storch 1999, Storch 2009b
Wapʰa̱	Storch 1999
Wobé	Hofer and Link 1973/1980, Marchese 1986
Wolaitta	Amha & Dimmendaal 2006b, Amha 2009, Lamberti & Sottile 1997
Wolane	Meyer 2006
Wolof	Pichl 1973/1980c, Comrie 1985
Xhosa	Torrend 1891, Meinhof 1948, Heine 1993, Bennie 1953
Yakoma	Boyeldieu 1995
Yambasa	Nurse 2008

Yao ?=Ciyao?	Torrend 1891
Yasa	Bot 1998
Yemba (Dschang)	Harro and Haynes 1991
Yoruba	Obidale 1977, Lord 1993
Yulu	Santandrea 1970, Boyeldieu 1987
Zaghawa/Beria	Cyffer 1991, Jakobi and Crass 2004, Dimmendaal 2010
Zande	Boyd 1995, Tucker 1959, Heine & Reh 1984, Tucker & Bryan 1966
Zarek, see Izere	
Zarma	Creissels et al. 2008, Oumarou Yaro 1993
Zay	Meyer 2005
Zing Mumuye	Shimizu 1983
Zulu	Meinhof 1948, Slattery 1981, Beuchat 1966, Doke 1947, Mkatshwa 1991, Louw 1963, Louw et al. 1967

Appendix-1b: List of languages by country

Language	**Country/Countries Primarily Spoken**
!Ora	South Africa
!Xõo Lone Tree	[Botswana, Namibia]
!Xun	Angola, Namibia, Botswana
//Ani	South Africa, Botswana
ǂHoan	Namibia, Botswana, Angola
ǂUngkue	South Africa
|Xam	South Africa
Aari	Ethiopia
Acholi	Uganda, South Sudan
Adamawa Fulani	Cameroon, Chad, Nigeria, Sudan
Ader Hausa	Nigeria
Afar	Eritrea, Ethiopia, Djibouti
Afuzare, see Izere	Nigeria
Aghem	Cameroon
Aiki [Runga]	Chad, Central African Republic
Aka	Sudan
Akan	Ghana

Akoose	Cameroon
Akwa	Congo
Alaaba	Ethiopia
Alagwa	Tanzania
Amharic	Ethiopia
Amo	Nigeria
Anexo-Ewe	Ghana, (Togo)
Angas	Nigeria
Anyi	Ghana, Côte d'Ivoire
Anywa	Sudan, Ethiopia
(A)Teso	Uganda, Kenya
Avatime	Ghana
Awak	Nigeria
Ayu	Nigeria
Baale	Ethiopia
Babungo	Cameroon
Bafia	Cameroon
Bagirmi	Chad
Baka	Cameroon, Gabon
Baka	South Sudan, Democratic Republic of Congo
Balondo	Cameroon
Bambara	Mali, Burkina Faso, Gambia, Guinea, Mauritania, Senegal
Bamileke see Yemba (Dschang)	Nigeria
Banda Nchumuru	Ghana
Baŋgi Me	Mali
Banka (Samogo)	Mali
Barambu	Democratic Republic of Congo
Bari	South Sudan, Uganda, Democratic Republic of Congo
Basaa	Cameroon
Bassa	Liberia, Sierra Leone
Baule	Côte d'Ivoire
Beja	Sudan, Eritrea
Bejamso-Grubi Nchumuru	Ghana
Bekwarra	Nigeria
Bemba	Zambia, Democratic Republic of Congo
'Berber'	Northern Africa

Berom/Birom	Nigeria
Berta	Ethiopia, Sudan
Bété	Cote d'Ivoire
Beya Lega	Democratic Republic of Congo
Bijogo	Guinea-Bissau
Bilin	Eritrea
Bobo-Fing	Burkina Faso, Mali
Boko/Busa	Nigeria, Benin
Bokobaru	Nigeria, Benin
Bolanci	Nigeria
Bongo	South Sudan
Borobo	Liberia, Cote d'Ivoire
'Bozom	Central African Republic
Buamu	Burkina Faso, Mali
Buduma	Chad, Cameroon, Nigeria
Buem/Lelemi	Ghana
Buga-/Anda	Botswana, Angola
Bukusu	Kenya
Bulu	Cameroon
Bungu	Tanzania
Burak	Nigeria
Burji	Ethiopia, Kenya
Burrum (Boghom)	Nigeria
Bushoong	Democratic Republic of Congo
ɓʊmɔ Ijo	Nigeria
C. B. K	Congo
C. B. L	Congo
Cara	Botswana
Chaha Gurage	Ethiopia
Chichewa	Malawi, Mozambique
Chip	Nigeria
Ciyao	Tanzania, Malawi, Mozambique
Coptic[†]	Egypt
Daba	Cameroon, Nigeria
Dabarro Somali	Somalia

Dadiya	Nigeria
Daffo Ron	Nigeria
Dagaare	Ghana, Burkina Faso
Dahalo	Kenya
Dangme	Ghana
Dan Blowo	Côte d'Ivoire
Dan-Gweeta	Côte d'Ivoire, Liberia, Guinea
Dar Daju Daju	Chad
Dasenech	Kenya
Datooga	Tanzania
Defaka	Nigeria
Degema	Nigeria
Dera-Kanakuru	Nigeria
Dewoin	Liberia
Dho-Alur	Uganda, Democratic Republic of Congo
Dholuo	Kenya
Didinga	Sudan
Dilling	South Sudan
Dime (Dim-Af)	Ethiopia
Dinik (Afitti)	Sudan
Dinka	South Sudan
Diola	Gambia, Guinea-Bissau
Diola-Fogny	Gambia, Senegal
Dizi (Maji)	Ethiopia
'Dogon'	Mali
Dɔgɔ́ sɔ̀	Mali, Burkina Faso
Dongolese	Sudan, Egypt
Donno Sɔ	Mali
Dott/Zoɗi	Nigeria
Doyayo	Cameroon
Duala	Cameroon
Duka	Nigeria
Duma	Gabon
Dyola	Senegal, Gambia
Dzalamo	Tanzania
'Dongo	Democratic Republic of Congo
Ebang/Heiban	Sudan

Ebira/Igbirra	Nigeria
Echie	Nigeria
Edo	Nigeria
Ega	Côte d'Ivoire
Eggon	Nigeria
Egyptian Arabic	Egypt
Egyptian[†]	Egypt
Ejagham	Nigeria, Cameroon
EkeGusii	Kenya
Ekpeye	Nigeria
Eleme	Nigeria
Eloyi	Nigeria
Emai	Nigeria
Engenni	Nigeria
Eton	Cameroon
Eunda	Namibia
Evale	Angola
Ewe	Ghana, Togo
Ewondo	Cameroon
Fadicca (Nobiin)	Sudan
Fali	Nigeria
Fer	Central African Republic
Fongbe	Benin, Togo
Frafra	Burkina Faso, Ghana
Fula	West/Central Africa
Fur	Sudan, Chad
Fyem	Nigeria
Ga	Ghana
Gaam	Sudan, Ethiopia
Gade	Nigeria
Gawwada Dullay	Ethiopia
Gbaeson Krahn	Liberia
Gbaya 'Buli	Central African Republic
Gbaya Kaka	Cameroon, Central African Republic, Congo
Gehode	Ghana

Genyanga	Ghana, Togo
Gerka (Yiwom)	Nigeria
Ghulfan	Sudan
Gidar	Cameroon, Chad
Gidole	Ethiopia
Gik[u]yu	Kenya
Gimira (Benchnon)	Ethiopia
Giryama	Kenya
Godie	Côte d'Ivoire
Goemai	Nigeria
Gogo	Tanzania
Gokana	Nigeria
Gonga (Kefa/Kafa)	Ethiopia
Grebo	Liberia, Cote d'Ivoire
Gula Méré	Central African Republic
Gula Sara	Central African Republic
Gula Zura	Central African Republic
Gumuz	Ethiopia, Sudan
Gùrdùŋ	Nigeria
Guro	Côte d'Ivoire
Guus/Sigidi	Nigeria
Gwama	Ethiopia, Sudan
Gworok/Kagoro	Nigeria
Haddiya	Ethiopia
Hadza	Tanzania
Hamer	Ethiopia
Harar Oromo	Ethiopia
Haro	Ethiopia
Hausa	Nigeria, Niger
Haya	Tanzania
Hdi	Nigeria, Cameroon
Heiban	Sudan
Hemba	Democratic Republic of Congo
Herero	Namibia
Holoholo	Democratic Republic of Congo
Hõne	Nigeria
Hung'an	Democratic Republic of Congo

Hungu	Democratic Republic of Congo
Ibibio	Nigeria
Idũ	Nigeria
Igbo	Nigeria
Ik	Uganda
Ila	Zambia
Inor	Ethiopia
Iraqw	Tanzania
Izere	Nigeria
Izi	Nigeria
Jalonke	Guinea, Mali, Senegal, Sierra Leone
Jamsay	Mali
Jibə	Nigeria
Jiddu Somali	Somalia
Jo[wulu]	Mali
Ju/ʼhoan	Botswana, Namibia, Angola
Kabba	Central African Republic, Chad
Kafima	Angola
Kaguru	Tanzania
Kahugu	Nigeria
Kako	Cameroon
Kalabari Ijo	Nigeria
Kamba	Kenya
Kambaata	Ethiopia
Kana	Nigeria
Kanuri	Nigeria, Niger, Chad, Cameroon, Sudan
Kara	Central African Republic, Sudan
Karang	Cameroon
Karekare	Nigeria
Karimojong	Uganda
Katcha	Sudan
Katla	Sudan
Kelo	Sudan
Kemantney	Ethiopia
Kenyan Pidgin Swahili	Kenya

Kenyang	Cameroon
Kerewe	Tanzania
Khoe/Khwe/Kxoe	Namibia, Botswana, Angola
Kikongo	Congo, Democratic Republic of Congo, Angola
Kilba	Nigeria
(Ki)Matumbi	Tanzania
Kimbu	Tanzania
Kinyarwanda	Rwanda
Kirma	Burkina Faso, Cote d'Ivoire
Kirundi	Burundi
Kisi	Sierra Leone, Liberia
Kituba	Congo, Democratic Republic of Congo
Klao	Liberia, Sierra Leone
Koegu	Ethiopia
Kohumono	Nigeria
Kolokuma Ijo/Izon	Nigeria
Kolonkadhi	Namibia
Kom	Cameroon
Koma	Sudan, Ethiopia
Konde	Tanzania, Mozambique
Kondjara Fur	Sudan
Konkomba	Ghana, Togo
Koyo	Cote d'Ivoire
Koyra Chiini	Mali
Kpelle	Liberia
Krachi	Ghana
Krahn	Liberia, Cote d'Ivoire
Kresh	South Sudan
Krongo	Sudan
Kua	Botswana, Zimbabwe
Kulango	Côte d'Ivoire, Ghana
Kunama	Eritrea, Sudan
Kuri(y)a	Tanzania, Kenya
Kuteb	Nigeria, Cameroon
Kuwaa	Liberia
Kwama	Ethiopia
Kwambi	Namibia

Kwami	Nigeria
Laadi	Democratic Republic of Congo, Congo
Laal	Chad
Lafofa	Sudan
Lamba	Zambia, Democratic Republic of Congo
Langi	Tanzania
Lango	Uganda, South Sudan
Later Egyptian[†]	Egypt
Lele	Chad
Lese	Democratic Republic of Congo
Likpe	Ghana
Limbum	Cameroon, Nigeria
Linda	Central African Republic
Lingala	Democratic Republic of Congo, Congo
Lobedu	South Africa
Lokaa	Nigeria
Lorhon	Cote d'Ivoire, Burkina Faso
Lotuko	South Sudan
Lua/Niellim	Chad
Luba	Democratic Republic of Congo
Lucazi	Angola, Zambia
Luganda	Uganda, Tanzania
Lugbara	Uganda, Democratic Republic of Congo
Luguru	Tanzania
Lunda	Zambia, Angola, Democratic Republic of Congo
Lungu	Tanzania
Luvale	Angola, Zambia
Lyaa	?Congo, Gabon?
Ma	Democratic Republic of Congo
Maale	Ethiopia
Maasai	Kenya, Tanzania
Maba	Chad
Mabiha	Mozambique, Tanzania
Mada	Nigeria
Ma'di	Uganda, South Sudan
Majang	Ethiopia

Makonde	Mozambique
Makua-Maverone	Mozambique
Malgwa	Cameroon
Mambila	Cameroon, Nigeria,
Mamvu	Democratic Republic of Congo (+Uganda?)
Manding	Senegal, Gambia, Guinea-Bissau
Mangbetu	Democratic Republic of Congo
Maninka	Guinea, Mali, Sierra Leone
Mankon	Cameroon
Mano	Liberia, Guinea
Masakin (Ngile)	Sudan
Masalit	Sudan, Chad
Mayogo	Democratic Republic of Congo
Mba	Democratic Republic of Congo
Mbalanhu	Namibia
Mbandja	Angola, Namibia
Mbay	Chad
Mbe	Nigeria
Mbembe	Nigeria
Mbodomo	Cameroon
Mbugwe	Tanzania
Mbuko	Cameroon
Mbum	Cameroon, Central African Republic
Me'en	Ethiopia
Meeka	Burkina Faso
Meje	Democratic Republic of Congo, Uganda
Mende	Sierra Leone, Liberia
Merey	Cameroon
Midob	Sudan
Mínà	Cameroon
Minagbe	Benin, Togo
Mödö	South Sudan
Mofu-Gudur	Cameroon
Molo	Sudan
Moloko	Cameroon
Montol	Nigeria
Moro	Sudan

Morokodo	South Sudan
Moru	South Sudan
Mpoto	Tanzania
Mubi	Chad, Sudan?
Mudung Somali	Somalia
Muher	Ethiopia
Mundabli	Cameroon
Mundu	South Sudan
Murle	South Sudan, Ethiopia
Mursi	South Sudan, Ethiopia
Musgu	Cameroon, Chad
Muyang	Cameroon
Mwera	Tanzania
N Tonga	Zambia, Malawi
N. Sotho	South Africa
N|uu	South Africa
Nafaara	Ghana, Côte d'Ivoire
Nama	Namibia, S. Africa, Botswana
Nande	Democratic Republic of Congo
Nandi	Kenya
Naro	Botswana
Nawuri	Ghana
Ndamba	Tanzania
Ndebele	Zimbabwe/South Africa
Ndemli	Cameroon
Ndendeule	Tanzania
Ndogo	South Sudan
Ndut-Falor	Senegal
Nera	Eritrea
Neyo	Cote d'Ivoire
Ngambay-Moundou	Chad
Ngandjera	Namibia, Angola
Ngbandi	Democratic Republic of Congo, Central African Republic
Ngiti	Democratic Republic of Congo
Ngizim	Nigeria

Nkonya	Ghana
Nkore-Kiga	Uganda
Nomaande	Cameroon
Non	Senegal
Noni	Cameroon
North Ibie	Nigeria
Ntandu	Democratic Republic of Congo
Nupe	Nigeria
Nyakyusa	Tanzania, Malawi
Nyimang	Sudan
Nymawezi	Tanzania
Nyo	Cote d'Ivoire
Obolo (Andoni)	Nigeria
Ogbronuagom (Bukuma)	Nigeria
Òkó /Ogori	Nigeria
Okpamberi -heri	Nigeria
Old Nubian[†]	Ancient Nubia[†]
Ongota	Ethiopia
Onicha Igbo	Nigeria
Orig	Sudan
Oromo of Wellega	Ethiopia
Oshikwanyama	Namibia, Angola
Otoro	Sudan
Pajade (Badiaranke)	Guinea, Guinea-Bissau, Senegal
Pambia	Democratic Republic of Congo
Pare	Tanzania
Pero	Nigeria
Pimbwe	Tanzania
Pokomo	Kenya
Polci	Nigeria
pre-Swahili	N/A
Proto-Kru	N/A
Punu	Congo
Rashad	Sudan
(I)Rigwe	Nigeria
Ruri	Tanzania

S Tonga	Zambia
S'aamakko Dullay	Ethiopia
Sai Gumuz	Ethiopia
Samba Leko	Cameroon, Nigeria
Sandawe	Tanzania
Sango	Central African Republic
Sapo	Liberia
Sara	Chad
Sayanci	Nigeria
Sele	Ghana
Sena	Mozambique
Sese Gumuz	Ethiopia, Sudan
Sesotho	Lesotho, South Africa
Setswana	Botswana. South Africa,
Shabo	Ethiopia
Shambaa	Tanzania
Shambala	Tanzania
Shatt	Sudan
Shona	Zimbabwe
Sidamo	Ethiopia
Sil'te	Ethiopia
Siluyana	Angola
Siswati	Swaziland, South Africa
Siwu	Ghana
So	Kenya, Uganda
Somali	Somalia+
Songye	Democratic Republic of Congo
Sonjo	Tanzania
Strandberg |Xam	South Africa
Sukuma(-Kiiya)	Tanzania
Sumbwa	Tanzania
Supyire	Mali, Cote d'Ivoire
Swahili	Kenya, Tanzania +
Swazi (see also Siswati)	Swaziland
Tagoi	Sudan

Talodi	Sudan
Tama	Chad
Tamashek	Mali
Tamazight	Morocco
Tarok	Nigeria
Tasawaq	Niger
Tchien Krahn	Liberia
Temein	Sudan
Tennet	South Sudan
Tepo	Cote d'Ivoire
Tigrinya	Eritrea
Tikar	Cameroon
Tima	Sudan
Tira	Sudan
Tiv	Cameroon, Nigeria
Togbo	Democratic Republic of Congo
Tondi Songway Kiini	Mali
Tonga	S. Africa, Mozambique
Tsongo	S. Africa, Mozambique, Zimbabwe
Tsotso	Kenya
Tubu (Tedaga)	Chad, Nigeria
Tumale	Sudan
Tumbuka	Zambia, Malawi
Turkana	Kenya
Twi	Ghana
Tyurama	Burkina Faso, Cote d'Ivoire
Uduk	Ethiopia, Sudan
Ukaan	Nigeria
Umbundu	Angola
ut-Ma'in	Nigeria
Vamé	Cameroon
Vata	Cote d'Ivoire
Venda	South Africa, Zimbabwe
Vute	Cameroon, Nigeria
W. !Xoon	[Namibia, Botswana]
Wannu	Nigeria
Wapan/Wukari	Nigeria

Wapʰa̱	Nigeria
Wobé	Côte d'Ivoire
Wolaitta	Ethiopia
Wolane	Ethiopia
Wolof	Senegal, Gambia, Mauritania, Mali
Xhosa	South Africa
Yakoma	Central African Republic
Yambasa	Cameroon
Yao ?=Ciyao?	Tanzania, Malawi, Mozambique
Yasa	Cameroon, Equatorial Guinea, Gabon
Yemba (Dschang)	Cameroon
Yoruba	Nigeria, Benin, Togo
Yulu	Central African Republic, South Sudan
Zaghawa/Beria	Sudan, Chad, Libya
Zande	Democratic Republic of Congo, South Sudan, Cameroon
Zarek, see Izere	Nigeria
Zarma	Niger
Zay	Ethiopia
Zing Mumuye	Nigeria
Zulu	South Africa

Appendix-2: List of languages sorted by genetic unit with linear syntactic order and ISO 639-3 codes

Language	**code**	**Order**	**Genetic Unit**
Ayu	ayu	AUX V	Ayu Plateau
Diola-Fogny	dyo	AUX V	Bak
Dyola	dyu	AUX V	Bak
Diola	?jol	AUX[-]V; V-AUX	Bak
Linda	liy	XV, AUX V	Banda Ubangi
Togbo	tor/tbm	AUX V	Banda Ubangi (tor)/Sere Ubangi (tbm)
C. B. K	?	AUX V	Bantu

C. B. L	?	AUX V	Bantu
Balondo	bqz	AUX V	Bantu > A10
Akoose	bss	AUX V	Bantu > A15
Duala	dua	AUX V	Bantu > A20
Basaa	bas	"AUX" V	Bantu > A43
Bafia	ksf	AUX V	Bantu > A50
Yambasa	yas	AUX V	Bantu > A62
Eton	eto	AUX(-)V	Bantu > A71
Ewondo	ewo	AUX V'	Bantu > A72
Bulu	bum	AUX V	Bantu > A74
Punu	puu	AUX V	Bantu > B40
Duma	dma	AUX V	Bantu > B51
Lyaa	iyx	AUX-V	Bantu > B73c
Akwa	akw	AUX V	Bantu > C30
Lingala	lin	AUX V	Bantu > C40
Bushoong	buf	AUX-V	Bantu > C83
Beya Lega	lea/lgm	AUX V	Bantu > D25
Holoholo	hoo	AUX-V	Bantu > D28
Nande	nnb	AUX-V	Bantu > D42
Kuri(y)a	kuj	AUX V	Bantu > E10
Sonjo	soz	AUX V	Bantu > E10
EkeGusii	guz	AUX V	Bantu > E10 or E42
Nkore-Kiga	nyn	AUX V	Bantu > E13/J10
Ruri	kya	AUX V	Bantu > E25[3]
Gik[u]yu	kik	AUX-V	Bantu > E51
Kamba	kam	AUX-V	Bantu > E55
Pokomo	poj or pkb	AUX V	Bantu > E71
Giryama	nyf	AUX V	Bantu > E72
Sukuma(-Kiiya)	suk	AUX V	Bantu > F21
Nymawezi	nym	AUX-V	Bantu > F22
Sumbwa	suw	AUX-V	Bantu > F23
Kimbu	kiv	AUX V	Bantu > F24
Langi	lag	AUX-V	Bantu > F33
Mbugwe	mgz	V AUX	Bantu > F34
Kaguru	kki	AUX V	Bantu > G10

Gogo	gog	AUX-V	Bantu > G11
Shambala	ksb	AUX V	Bantu > G20
Pare	asa	AUX V	Bantu > G20 > G22
Shambaa	ksb	AUX V	Bantu > G23
Dzalamo	zaj	AUX V	Bantu > G30
Luguru	ruf	AUX V	Bantu > G30 > G35
Swahili	swh	AUX V	Bantu > G42
Ndamba	ndj	AUX V	Bantu > G52
Kikongo	kng, kon	AUX V	Bantu > H10
Laadi	ldi	AUX V	Bantu > H10 > H16f
Ntandu	kon	AUX V	Bantu > H10 > H16g
Hung'an	hum	AUX V	Bantu > H42
Hungu	hum	AUX-V	Bantu > H42
Luganda	lug	AUX V	Bantu > J10
Haya	hay	AUX V	Bantu > J20 or E22
Bukusu	bxk	AUX V	Bantu > J30/JE31c
Bukusu	bxk	AUX-V	Bantu > J30/JE31c
Tsotso	luy	V AUX	Bantu > J30/JE32b
Kirundi	run	AUX V	Bantu > J60
Kinyarwanda	kin	AUX V	Bantu > J60 or D61
Lucazi	lch	AUX-V	Bantu > K13
Luvale	lue	AUX V	Bantu > K20
Lunda	lun	AUX V	Bantu > K30
Siluyana	lyn	AUX V	Bantu > K40
Songye	sop	AUX V	Bantu > L23
Hemba	hem	AUX V	Bantu > L30
Luba	lua, lub	AUX V	Bantu > L33
Pimbwe	piw	AUX V	Bantu > M11
Lungu	mgr	AUX V	Bantu > M14
Bungu	wun	AUX V	Bantu > M25
Nyakyusa	nyy	AUX V	Bantu > M30
Bemba	bem	AUX V	Bantu > M42
Lamba	lam	AUX V	Bantu > M50
N Tonga	toy	AUX V	Bantu > M60

S Tonga	toi	AUX V	Bantu > M60
Ila	ilb	AUX-V	Bantu > M63
Mpoto	mpa	AUX V	Bantu > N14 [N12]
Tumbuka	tum	AUX V	Bantu > N21
Chichewa	nya	AUX V	Bantu > N30
Sena	seh	AUX V	Bantu > N44
Ndendeule	dne	AUX V	Bantu > P10
Kimatumbi	mgw	AUX V	Bantu > P13
Ciyao	yao	AUX V	Bantu > P20
Konde	kde	AUX V	Bantu > P20
Yao ?=Ciyao?	yao	AUX V	Bantu > P20
Mwera	mwe	AUX(-)V	Bantu > P22
Makonde	kde	AUX-V	Bantu > P23
Mabiha	kde	AUX V	Bantu > P25
Makua-Maverone	xme	AUX V	Bantu > P30
Umbundu	umb	AUX V	Bantu > R10
Kwambi	kwm	AUX V	Bantu > R20
Mbalanhu	lnb	AUX V	Bantu > R20
Ngandjera	nne	AUX V	Bantu > R20
Oshikwanyama	kua	AUX V	Bantu > R20
Kafima	kua	AUX V	Bantu > R211
Evale	kua	AUX V	Bantu > R212
Mbandja	kua	AUX V	Bantu > R213
Eunda	ndo, nne	AUX V	Bantu > R242
Kolonkadhi	ndo, nne	AUX V	Bantu > R242
Herero	her	AUX V	Bantu > R30
Shona	sna	AUX V	Bantu > S10
Venda	ven	AUX V	Bantu > S21
Setswana	tsn	AUX V	Bantu > S31a
N. Sotho	nso	AUX V	Bantu > S32
Lobedu	nso	AUX V	Bantu > S32b
Sesotho	sot	AUX V	Bantu > S33
Siswati	ssw	AUX V	Bantu > S40
Xhosa	xho	AUX V (V AUX?)	Bantu > S40

Zulu	zul	AUX V	Bantu > S42
Ndebele	nde/nbl	AUX V	Bantu > S44
Tsongo	tso	AUX-V	Bantu > S53
Tonga	toh	AUX V	Bantu > S62
Kako	kkj	AUX V	Bantu A43/ALCAM 440
Kerewe	ked	AUX V	Bantu G60/J20
Mundabli	boe	AUX V	Beboid, Western
Noni	nhu	AUX V	Beboid, Eastern
Bekwarra	bkv	AUX V	Bendi
'Berber'	ber	AUX V	Berber
Tamashek	taq	AUX V	Berber
Tamazight	tmz	AUX V	Berber
Berom/Birom	bom	AUX V	Beromic Plateau
	wti	AUX-V	
		"AUX" V	
Berta		V-AUX	Berta
Bijogo	bjg	AUX V	Bijago
Daba	dbq	AUX V	Biu-Mandara Chadic
Gidar	gid	AUX V	Biu-Mandara Chadic
		V-AUX	
Hdi	xed	AUX V	Biu-Mandara Chadic
Kilba	hbb	AUX V	Biu-Mandara Chadic
		V-AUX	
Mbuko	mqb	AUX V	Biu-Mandara Chadic
Merey	meq	AUX V	Biu-Mandara Chadic
Mínà	hna	AUX V	Biu-Mandara Chadic
Mofu-Gudur	mif	AUX V	Biu-Mandara Chadic
Moloko	mlw	AUX V	Biu-Mandara Chadic
Musgu	mug	AUX V	Biu-Mandara Chadic
Muyang	muy	AUX V	Biu-Mandara Chadic
Vamé	mlr	AUX V	Biu-Mandara Chadic
Malgwa	mfi	V-AUX	Biu-Mandara Chadic
Bagirmi	bmi	AUX V	Bongo-Bagirmi
Bongo	bot	AUX V	Bongo-Bagirmi

		V AUX	
Fer	kah	AUX V	Bongo-Bagirmi
Gula Méré	kcm	AUX V	Bongo-Bagirmi
Gula Sara	kcm	AUX V	Bongo-Bagirmi
Gula Zura	kcm	AUX V	Bongo-Bagirmi
Kabba	ksp	AUX V	Bongo-Bagirmi
Kara	kcm	AUX V	Bongo-Bagirmi
Mbay	myb	AUX V	Bongo-Bagirmi
Mödö	bex	AUX V	Bongo-Bagirmi
Morokodo	mgc	AUX V	Bongo-Bagirmi
Ngambay-Moundou	sba	AUX V	Bongo-Bagirmi
Sara	mwm	AUX V	Bongo-Bagirmi
Yulu	yul	AUX V	Bongo-Bagirmi
Baka	bdh	AUX V	Bongo-Bagirmi
Ndut-Falor	ndv/fap	AUX V	Cangin
Non	snf	AUX V	Cangin
Izere/Afuzare/Zarek	fiz	AUX V	Central (South) Plateau
Kemantney	ahg	V AUX	Central Cushitic
Bilin	byn	V-AUX	Central Cushitic
(I)Rigwe	iri	AUX V	Central Plateau
Kituba*	mkw	AUX V	Creole
Sango*	sag	V AUX	Creole
Eleme	elm	AUX V	Cross River
Ibibio	ibb	AUX V	Cross River
Kohumono	bcs	AUX V	Cross River
Lokaa	yaz	AUX V	Cross River
Obolo (Andoni)	ann	AUX V	Cross River
Ogbronuagom (Bukuma)	ogu	AUX V	Cross River
Mbembe	mfn	AUX-V ?V-AUX	Cross River
Gokana	gkn	AUX V	Cross River > Ogonoid
Kana	ogo	AUX V	Cross River > Ogonoid
Alagwa	wbj	AUX V	Cushitic
Dar Daju Daju	djc	AUX V	Daju

		V-AUX	
Shatt	shj	AUX V	Daju
'Dogon'		V AUX	Dogon
Jamsay	djm	V AUX	Dogon
Donno Sɔ	dds	V[-]AUX	Dogon
Gùrdùŋ	grd	AUX V	Eastern Chadic
Polci	plj	AUX V	Eastern? Chadic
Dera-Kanakuru	kna	AUX-V	Eastern Chadic
Mubi	mub	V-AUX	Eastern Chadic
		AUX V	
Dasenech	dsh	AUX V	Eastern Cushitic
S'aamakko Dullay	tsb	AUX V	Eastern Cushitic
Afar	aar	V AUX	Eastern Cushitic
Alaaba	alw	V AUX	Eastern Cushitic
Burji	bji	V AUX	Eastern Cushitic
Dabarro Somali	dbr	V AUX	Eastern Cushitic
Haddiya	hdy	V AUX	Eastern Cushitic
Harar Oromo	hae	V AUX	Eastern Cushitic
Jiddu Somali	jii	V AUX	Eastern Cushitic
Mudung Somali	?som	V AUX	Eastern Cushitic
Oromo Wellega	gaz	V AUX	Eastern Cushitic
Sidamo	sid	V AUX	Eastern Cushitic
Somali	som	V AUX	Eastern Cushitic
Gidole	gdl	V[-]AUX	Eastern Cushitic
Gawwada Dullay	gwd	V-AUX	Eastern Cushitic
Kambaata	ktb	V-AUX	Eastern Cushitic
Amo	amo	AUX V	Eastern Kainji
Bobo-Fing	bbo	AUX V	Eastern Mande
Boko/Busa	bqc	AUX V	Eastern Mande
Bokobaru	bus	AUX V	Eastern Mande
(A)Teso	teo	AUX V	Eastern Nilotic
Bari	bfa	AUX V	Eastern Nilotic
Lotuko	lot	AUX V	Eastern Nilotic
Maasai	mas	AUX V	Eastern Nilotic

Turkana	tuv	AUX V	Eastern Nilotic
Degema	deg	AUX V	Edoid [YEAI]
Emai	ema	AUX V	Edoid [YEAI]
North Ibie	atg	AUX V	Edoid [YEAI]
Okpamberi -heri	opa	AUX V	Edoid [YEAI]
		V AUX	
Edo	bin	AUX V/ V AUX	Edoid [YEAI]
Engenni	enn	V AUX	Edoid [YEAI]
Ega	ega	AUX V	Ega Volta-Congo
Egyptian[†]	egy	AUX V	Egyptian-Coptic
Later Egyptian[†]	egy/egx	AUX V	Egyptian-Coptic
Coptic[†]	cop	AUX-V	Egyptian-Coptic
Ejagham	etu	AUX V	Ekoid S. Bantoid
		AUX-V	
Eloyi	afo	AUX V	Eloyi ?Plateau
Fali	fli	AUX V	Fali
Fali	fur/?fvr	AUX V	Fali
		V AUX	
		V-AUX	
Fur	fvr	V LIGHT	Fur
Kondjara		AUX V	Fur
Dangme	ada	AUX V	Ga-[A]Dangme
Ga	gaa	AUX V	Ga-[A]Dangme
'Bozom	gbq	AUX V	Gbaya Ubangi
Gbaya Kaka	kkj	AUX V	Gbaya Ubangi
Mbodomo	mdo/ gmm	V AUX	Gbaya Ubangi
Gbaya 'Buli	gso	AUX V	Gbaya Ubangi
Anexo-Ewe	ewe	AUX V	Gbe
Fongbe	fon	AUX V	Gbe
Minagbe	gej	V AUX, AUX V	Gbe
Ewe	ewe	AUX V	Gbe
Aghem	agq	AUX V	Grassfields S. Bantoid
Babungo	bav	AUX V	Grassfields S. Bantoid
Mankon	nge	AUX V	Grassfields S. Bantoid
Yemba	ybb	AUX V	Grassfield S. Bantoid

Kom	bkm	AUX-V	Grassfields S. Bantoid > C. Ring
Gumuz	guk	AUX-V	Gumuz
Kokit Gumuz	guk	AUX-V	Gumuz
Sai Gumuz	guk	V AUX	Gumuz
		AUX V	
Sese Gumuz	guk	AUX V	Gumuz
Ebang/Heiban	hbn	AUX V	Heiban Kordofanian
Moro	mor	AUX V	Heiban Kordofanian
Otoro	otr	AUX V	Heiban Kordofanian
Tira	tic	AUX V	Heiban Kordofanian
Ekpeye	ekp	AUX V	Igboid
Echie	ibo	AUX V	Igboid [YEAI]
Igbo	ibo	AUX V	Igboid [YEAI]
Izi	izi	AUX-V	Igboid [YEAI]
Onicha Igbo	ibo	V AUX	Igboid [YEAI]
Ɓʊmɔ Ijo	ijc	V AUX	Ijoid
Kalabari Ijo	ijn	V[-]AUX	Ijoid
		AUX V	
Kolokuma Ijo/Izon	ijc	V-AUX	Ijoid
Defaka	afn	AUX V	Ijoid
		V-AUX	
Hadza	hts	?AUX$_{<NEG>}$ V	Isolate
		V-T/A	
Baŋgi Me	dba	AUX V	Isolate
Aka	soh	AUX V	Jebel
Gaam	tbi	AUX V	Jebel
Kelo	xel	AUX V	Jebel
Molo	zmo	AUX V	Jebel
Burak	bys	AUX V	Jen [Waja-Jen]
Ju/'hoan	ktz	AUX-V	Ju
		AUX V	
!Xun	knw	AUX V PRF	Ju
		V AUX PROG	
ǂHoan	ktz	AUX V	Ju or Unclassified

Hone	juh	AUX V	Jukunoid
		AUX-V	
Wapan/Wukari	juk	AUX[-]V	Jukunoid
Hʉne	juh	AUX-V	Jukunoid
Jibə	jib/juo	AUX-V	Jukunoid
Wannu	jub	AUX-V	Jukunoid
Wapʰa̱	juw	V AUX	Jukunoid
Kuteb	kub	AUX V	Jukunoid
Krongo	kgo	AUX V	Kado
Katcha	xtc	AUX V	Kado or Unclassified NS
Duka	dud	AUX V	Kainji
Kahugu	grh	AUX-V	Kainji > Eastern
Avatime	avn	AUX V	Ka-Togo Ghana-Togo Mountain
//Ani	hnh/xuu	V AUX	Khoe
!Ora	kqz	V AUX	Khoe
Buga-/Anda	hnh/xuu	V AUX	Khoe
Cara	shg	V AUX	Khoe
Khoe	xuu	V-AUX;	Khoe
		AUX V	
Khwe	xuu	AUX V	Khoe
Kua	tyu	AUX V	Khoe
Nama	naq	V AUX	Khoe
Naro	nhr	AUX V	Khoe
Koma	xom	AUX V	Koman
Uduk	udu	AUX-V	Koman
Kwama	kmq	AUX V	Koman
Kresh	krs	AUX V	Kresh-Aja
Dewoin	dee	AUX V	Kru
Vata	dic	AUX V	Kru
Wobé	wob	AUX V	Kru
Bété	bev, btg, bet	AUX V	Kru > E
Godie	god	AUX V	Kru > E
		V-AUX?	
Koyo	god	AUX V	Kru > E
Neyo	ney	AUX V	Kru > E

Nyo	?ney	AUX V	Kru > Eastern
Kuwaa	blh	AUX V	Kru > Kuwaa
Bassa	bza	AUX V	Kru > W
Klao	klu	AUX V	Kru > W
Krahn	krw	AUX V	Kru > W
Tchien Krahn	kqo	V AUX	Kru > W
Grebo	?gry; grv; gec; gbo; grj?	AUX V	Kru > W
Gbaeson Krahn	krw	AUX V	Kru > West
Borobo	grv	AUX V	Kru > Western
Sapo	krn	AUX V	Kru > Western
Tepo	ted	AUX V	Kru > Western
Kulango	kzc/nku	AUX V ?V-AUX	Kulango-Lorhon
Lorhon	lor	AUX V	Kulango-Lorhon
So	teu	V AUX, AUX V	Kuliak
Ik	ikx	V AUX	Kuliak
Kunama	kun	AUX V	Kunama
Lafofa	laf	AUX V	Lafofa
Samba Leko	ndi	AUX V	Leko-Nimbari
Zing Mumuye	mzm	AUX V	Leko-Nimbari
Ngiti	niy	V AUX	Lendu Central Sudanic
Aiki [Runga]	rou	V AUX	Maban
Maba	mde	V AUX	Maban
Masalit	mls	AUX V	Maban
Mambila	mzk; mcu	AUX V	Mambiloid N. Bantoid
Vute	vut	AUX V	Mambiloid N. Bantoid
Kenyang	ken	V-AUX	Mamfe/Nyang S. Bantoid
Bambara	bam	AUX V	Mande > [C]W
Mangbetu	mdj	AUX V	Mangbetu
Meje	mdj	AUX V	Mangbetu
Lese	les	V AUX/ AUX V	Mangbutu-Efe

Mamvu	mdi	AUX V	Mangbutu-Efe
Ma	msj	AUX V	Mba Ubangi
Mba	mfc	AUX[-]V	Mba Ubangi
'Dongo	doo	AUX V	Mba Ubangi
Nomaande	lem	AUX V	Mbam S. Bantoid
Limbum	lmp	AUX V	Mbam-Nkam S. Bantoid
Mbe	mfo	AUX V	Mbe S. Bantoid
Doyayo	dow	AUX V	Mbum-Day
Karang	kzr	AUX V	Mbum-Day
Lua/Niellim	nie	AUX V	Mbum-Day
Mbum	mdd	AUX V	Mbum-Day
Kisi	kss	AUX[-]V	Mel
Lugbara	lgg	AUX[-]V	Moru-Madi
Moru	mgd	V AUX	Moru-Madi
Moru	mhi/snm	AUX[-]V	Moru-Madi
Ma'di	mhi/snm	AUX V	Moru-Madi
Buem/Lelemi	lef	AUX V	Na-Togo Ghana-Togo Mountain
Siwu	akp	AUX-V AUX V	Na-Togo Ghana-Togo Mountain
Sele	snw	AUX V	Na-Togo Ghana-Togo Mountain
Likpe	lip	AUX V	Na-Togo Ghana-Togo Mountain or Potou-Tano Kwa
Ndemli	nml	V AUX	Ndemli S. Bantoid
Nera	nrb	AUX V	Nera
Baka	bkc	AUX V	Ngbaka Ubangi
Mayogo	mdm	AUX V	Ngbaka Ubangi
Mundu	muh	AUX V	Ngbaka Ubangi
Ngbandi	ngb/nbw	AUX V	Ngbandi Ubangi
Yakoma	yky	V AUX	Ngbandi Ubangi
Beja	bej	AUX V	North Cushitic
Buamu	box	AUX V	Northern Gur
Dagaare	dgi	AUX V	Northern Gur
Frafra	gur	AUX V	Northern Gur
Konkomba	xon	V AUX	Northern Gur
Dizi (Maji)	mdx	V AUX	Northern Omotic

Gimira (Benchnon)	bcq	V AUX	Northern Omotic
Gonga (Kefa/Kafa)	kbr	V AUX	Northern Omotic
Haro	kqy	V AUX	Northern Omotic
Maale	mdy	V AUX	Northern Omotic
Wolaitta	wal	AUX V	Northern Omotic
Idũ	ldb	V AUX	NorthWestern Plateau
Fadicca (Nobiin)	fia	V(-)AUX	Nubian
		AUX V	
Midob	mei	V-AUX	Nubian
Dilling	dil	V-AUX	Nubian
Dongolese	kzh	V-AUX	Nubian
Ghulfan	ghl	V-AUX	Nubian
Old Nubian[†]	onw	AUX V	Nubian
Ebira/Igbirra	igb	AUX V	Nupoid
Gade	ged	AUX V	Nupoid
Nupe	nup	AUX V	Nupoid
		V-AUX	
Nyimang	nyi	AUX V	Nyimang
		(but OV)!	
Dinik (Afitti)	aft	AUX[-]V	Nyimang
		AUX V	
		V AUX	
Òkó/Ogori	oks	AUX V	Okoid [NOI]
Kenyan Pidgin Swahili		AUX V	'Pidgin'
Baule	bci	AUX V	Potou-Tano Kwa
Bejamso-Grubi Nchumuru	ncu	AUX V	Potou-Tano Kwa
Gehode	acd	AUX V	Potou-Tano Kwa
Genyanga	ayg	AUX V	Potou-Tano Kwa
Krachi	kye	AUX V	Potou-Tano Kwa
Nawuri	naw	AUX V	Potou-Tano Kwa
Nkonya	nko	AUX(-)V	Potou-Tano Kwa
Akan	aka	AUX[-]V	Potou-Tano Kwa

Anyi	any	AUX-V	Potou-Tano Kwa
Banda Nchumuru	ncu	V AUX AUX V	Potou-Tano Kwa
Twi	aka	V AUX	Potou-Tano Kwa
		AUX V	
Orig	tag	V AUX	Rashad Kordofanian
		AUX-V	
Rashad	ras	V AUX	Rashad Kordofanian
Tagoi	tag	V AUX	Rashad Kordofanian
		AUX-V	
Tumale	tag	AUX V	Rashad Kordofanian
		V-AUX	
Kanuri	knc	V(-)AUX	Saharan
Zaghawa/Beria	zag	V AUX	Saharan
		AUX V	
Sandawe	sad	AUX V	Sandawe
Fula	ful	AUX V	Senegambian
Adamawa Fulani	fub	V AUX	Senegambian
Pajade (Badiaranke)	pbp	AUX-V	Senegambian
Pajade (Badiaranke)	pbp	AUX V	Senegambian
Nafaara	nfr	AUX V	Senufic
Supyire	spp	AUX V	Senufic
Ndogo	ndz	AUX V	Sere Ubangi
Koyra Chiini	khq	AUX V	Songhay
Tasawaq	twq	AUX V	Songhay
Tondi Songway Kiini	son?	AUX V	Songhay
Zarma	dje	V AUX	Songhay
Amharic	amh	V AUX	South Semitic
Chaha Gurage	sgw	V AUX	South Semitic
Inor	ior	V AUX	South Semitic
Muher	sgw	V AUX	South Semitic
Sil'te	stv	V AUX	South Semitic
Tigrinya	tir	V AUX	South Semitic
Wolane	wle	V AUX	South Semitic
Zay	zwa	AUX V	South Semitic
Gworok/Kagoro	kcg	AUX V	South-Central Plateau

Fyem	pym	AUX V	Southeast Plateau
Eggon	ego	AUX V	Southern [Eggonic] Plateau
Dahalo	dal	V AUX	Southern Cushitic
Iraqw	irk	AUX V	Southern Cushitic
Kirma	cme	AUX V	Southern Gur
Tyurama	tuz	V-AUX	Southern Gur
Dɔgɔ́ sɔ̀	dts/dgs	AUX V	Southern Gur
Dan-Blowo	daf	AUX V	Southern Mande
Dan-Gweeta	daf	AUX V	Southern Mande
Guro	goa	AUX V	Southern Mande
Mano	mev	AUX V	Southern Mande
Datooga	tcc	AUX V	Southern Nilotic
Nandi	kln	V AUX	Southern Nilotic > (Kalenjin)
Aari	aiw	V[-]AUX	Southern Omotic
Dime (Dim-Af)	dim	AUX V	Southern Omotic
Hamer	amf	AUX V	Southern Omotic
Kpelle	xpe	AUX V	Southwestern Mande
Mende	men	AUX V	Southwestern Mande
Mada	mda	AUX V	Southwestern Plateau
Baale	koe	AUX V	Surmic
Didinga	did	AUX V	Surmic
Majang	mpe	AUX V	Surmic
Murle	mur	AUX V	Surmic
Mursi	muz	AUX V	Surmic
Tennet	tex	V AUX	Surmic
Koegu	xwg	V AUX	Surmic
Me'en	mym	AUX V	Surmic
		AUX-V	
Masakin (Ngile)	jle	AUX V	Talodi Kordofanian
Talodi	tlo	X Light.vb	Talodi Kordofanian
		AUX V	
Tama	tma	AUX V	Taman
Tarok	yer	AUX V	Tarokoid Plateau
Temein	teq	AUX V	Temein East Sudanic

Tikar	tik	AUX V	Tikar S. Bantoid
		V-AUX	
Katla	kcr	AUX V	Tima-Katla ('Kordofanian')
Tima	tms	AUX V	Tima-Katla ('Kordofanian')
Tiv	tiv	"AUX" V	Tivoid S. Bantoid
ǂUngkue	?xeg/xam	AUX V	Tuu (!Ui-Taa)
|Xam	xam	AUX V	Tuu (!Ui-Taa)
N|uu	ngh	AUX V	Tuu (!Ui-Taa)
Strandberg |Xam	xam	AUX V	Tuu (!Ui-Taa)
W. !Xoon	nmn	V AUX	Tuu (!Ui-Taa)
!Xõo Lone Tree	nmn	AUX V	Tuu (!Ui-Taa)
Ukaan	kcf	AUX V	Ukaan Benue-Congo
Laal	gdm	V AUX	Unclassified
	bxe		
Ongota		AUX V!	Unclassified Afroasiatic
		SOV	
Shabo	sbf	AUX V	Unclassified Nilo-Saharan
Awak	awo	AUX V	Waja [Waja-Jen]
Dadiya	dbd	AUX V	Waja [Waja-Jen]
Ader Hausa	hau	AUX V	West Chadic
Angas	anc	AUX V	West Chadic
Burrum (Boghom)	bux	AUX V	West Chadic
Chip	mjs	AUX V	West Chadic
Daffo Ron	cla	AUX V	West Chadic
Dott/Zodi	dot	AUX V	West Chadic
Gerka (Yiwom)	gek	AUX V	West Chadic
Goemai	ank	AUX V	West Chadic
Guus/Sigidi	say	AUX V	West Chadic
Hausa	hau	AUX V	West Chadic
Kwami	ksq	AUX V	West Chadic
Lele	lln	AUX V	West Chadic
Montol	mtl	AUX V	West Chadic
Ngizim	ngi	AUX V	West Chadic
Pero	pip	AUX V	West Chadic
Sayanci	say	AUX V,	West Chadic

		AUX-V	
Karekare	kai	V-AUX	West Chadic
		AUX/Lght V	
Bolanci	bol	AUX V	West Chadic
Egyptian Arabic	arz	AUX V	West Semitic
ut-Ma'in	gel	AUX V	Western Kainji
Jalonke	yal	AUX V	Western Mande
Manding	mnk	AUX V	Western Mande
Maninka	mku/msc	AUX V	Western Mande
Meeka	rkm	AUX V	Western Mande
'Dinka'	dip, diw,	AUX V	Western Nilotic
	dib, dks, dik		
Acholi	ach	AUX V	Western Nilotic
Anywa	anu	AUX V	Western Nilotic
Dho-Alur	alz	AUX V	Western Nilotic
Dholuo	luo	AUX V	Western Nilotic
Lango	laj	AUX-V	Western Nilotic
Karimojong	kdj	AUX V	Western Nilotic
Banka (Samogo)	bxw	AUX V	Western or Samogo Mande
Jo[wulu]	jow	AUX V	Western or Samogo Mande
		V-AUX	
Wolof	wol, wof	V AUX	Wolof
Yoruba	yor	AUX V	Yoruboid [YEAI]
Barambu	brm	AUX V	Zande Ubangi
		AUX-V	
Zande	zne	AUX-V	Zande Ubangi
Pambia	pmb		Zande Ubangi

Key to Appendices 3 through 7:

AH	AUX-Headed pattern
"AH"	possibly analytic, possibly synthetic structure in AUX-headed configuration
AUX	Auxiliary Verb
CO	Cognate Object
CONEG	Conegative
DEP	Dependent
f	Fused pattern
f/f S/TAM/P	Complex verb forms derived from fusing of fused subject/TAM/Polarity
FOC	Focus
LH	LEX-Headed pattern
"LH"	possibly analytic, possibly synthetic structure in LEX-headed configuration
LV	Lexical Verb
NEG	Negative
n. o. p.	Nominal origin of progressive
O	Object
pas	Reinforcing element like French (quasi-conegative) *pas* that may become sole index of functional category
PHON	Phonologically (dependent)
pseudo-	pattern that mimics another pattern, e.g. due to behavior of clitics or mismatch between phonological/morphological words
S	Subject
S/TAM/P	Fused subject/TAM/Polarity forms
SVC	Serial Verb Construction
S/2	Split/Doubled inflectional pattern
(S/)2	Split/Doubled [OBJ/SUBJ] pattern with transitive verbs, doubled inflectional pattern with intransitives
V	Verb
V2	Second Verb in a sequence of verbs (e.g., in a serial verb construction)
~	Alternates with
+	Pattern in addition to/in combination with another configuration
<	derives historically from

>	develops into
1SG	First person singular
2x	Doubled Inflectional pattern
"2x"	possibly analytic, possibly synthetic structure in doubled configuration
Ø	zero-morph (bare stem) of lexical verb or zero form of auxiliary

Appendix-3: Languages w/AUX-Headed AVCs and derived complex verbs

Language	ISO 639-3 Code	Pattern
ǂHoan	Ktz	"AH"
Berta	Wti	?+DEP; fused AH (+S/TAM/P)
Meeka	Rkm	[AH] S/TAM/P [NEG]
Dar Daju Daju	Djc	{2x/AH/split?}
!Xun	Knw	"AH"
Bari	Bfa	"AH"
Bejamso-Grubi Nchumuru	Ncu	"AH"
Dangme	Ada	"AH"
Emai	Ema	"AH"
Fongbe	Fon	"AH"
Gbaeson Krahn	Krw	"AH"
Genyanga	Ayg	"AH"
Ju/'hoan	Ktz	"AH"
Minagbe	Gej	"AH"
Oko/Ogori	Oks	"AH"
Strandberg ǀXam	Xam	"AH"
Tchien Krahn	Kqo	"AH"
Vute	Vut	"AH"
Wapan/Wukari	Juk	"AH"
Baka	bkc	"AH" + DEP
Kuwaa	blh	"AH" +DEP
Mambila	mzk; mcu	"AH" +DEP

Mbum	mdd	"AH" +DEP
Ndogo	ndz	"AH" +DEP
Samba Leko	ndi	"AH" +DEP
!Xõo Lone Tree	nmn	"AH" < SVC V_2
Tondi Songway Kiini	son?	"AH" ±DEP
Bobo-Fing	bbo	"AH" n.o.p.
Banka (Samogo)	bxw	"AH" or split
Konkomba	xon	"AH"/"LH"
Maninka	mku/msc	"AH"; n.o.p.
Tikar	tik	"AH"?
Lorhon	lor	"AH"+DEP
Lua/Niellim	nie	"AH"+DEP
Yemba	ybb	"AH"+DEP
ǂHoan	ktz	+fused V-AUX AH
Kua	tyu	2x ~ AH
Gula Méré	kcm	2x ~ AH+DEP
Ik	ikx	2x/AH
!Ora	kqz	AH
Zande	zne	AH
'Dinka'	dip, diw, dib, dks, dik	AH
'Dongo	doo	AH
Ɓʋmɔ Ijo	ijc	AH
Adamawa Fulani	fub	AH
Afar	aar	AH
Aiki [Runga]	rou	AH
Akwa	akw	AH
Anywa	anu	AH
Babungo	bav	AH
Bari	bfa	AH
Basaa	bas	AH
Bassa	bza	AH
Bijogo	bjg	AH
Bolanci	bol	AH
Bukusu	bxk	AH
C. B. K	?	AH

Dabarro Somali	dbr	AH
Dadiya	dbd	AH
Dahalo	dal	AH
Dholuo	luo	AH
Dime (Dim-Af)	dim	AH
Donno Sɔ	dds	AH
Doyayo	dow	AH
Duala	dua	AH
Duka	dud	AH
Duma	dma	AH
Dzalamo	zaj	AH
Echie	ibo	AH
EkeGusii	guz	AH
Eleme	elm	AH
Eton	eto	AH
Evale	kua	AH
Ewe	ewe	AH
Ewondo	ewo	AH
Fur	fur/?fvr	AH
Godie	god	AH
Godie	god	AH
Gokana	gkn	AH
Haddiya	hdy	AH
Hadza	hts	AH
Harar Oromo	hae	AH
Hausa	hau	AH
Herero	her	AH
Hung'an	hum	AH
Igbo	ibo	AH
Ik	ikx	AH
Izi	izi	AH
Ju/'hoan	ktz	AH
Kabba	ksp	AH
Kaguru	kki	AH

Kako	kkj	AH
Kalabari Ijo	ijn	AH
Kana	ogo	AH
Kara	kcm	AH
Kenyan Pidgin Swahili		AH
Kenyang	ken	AH
Kerewe	ked	AH
Khwe/Khoe	xuu	AH
Kikongo	kng, kon	AH
Kinyarwanda	kin	AH
Kituba	mkw	AH
Kolokuma Ijo	ijc	AH
Kom	bkm	AH
Konde	kde	AH
Kwami	ksq	AH
Laadi	ldi	AH
Lango	laj	AH
Later Egyptian[†]	egy or egx	AH
Lingala	lin	AH
Lotuko	lot	AH
Maba	mde	AH
Mamvu	mdi	AH
Manding	mnk	AH
Mba	mfc	AH
Mbe	mfo	AH
Mbodomo	mdo	AH
Mbodomo	gmm	AH
Mende	men	AH
Mödö	bex	AH
Mpoto	mpa	AH
Mudung Somali	?som	AH
Mursi	muz	AH
Naro	nhr	AH
Ndendeule	dne	AH
Ndut-Falor	ndv/fap	AH

Nkonya	nko	AH
Noni	nhu	AH
North Ibie	atg	AH
Nyakyusa	nyy	AH
Òkó	oks	AH
Oromo of Wellega	gaz	AH
Pero	pip	AH
S'aamakko Dullay	tsb	AH
Sayanci	say	AH
	guk	AH
Sese Gumuz		AH
Shambala	ksb	AH
Sidamo	sid	AH
So	teu	AH
Somali	som	AH
Swahili	swh	AH
Tama	tma	AH
Tepo	ted	AH
Tigrinya	tir	AH
Tira	tic	AH
Tsotso	luy	AH
Turkana	tuv	AH
ut-Ma'in	gel	AH
Vata	dic	AH
Vute	vut	AH
Vute	vut	AH
Wolof	wol, wof	AH
Xhosa	xho	AH
Gbaya Kaka	kkj	AH (+DEP)
Egyptian[†]	egy	AH (+DEP?)
Koegu	xwg	AH (+DEP?)
Gbaya Kaka	kkj	AH (+Ø)
Kpelle	xpe	AH; n.o.p.
Jamsay	djm	AH (+V+complement)

Ma'di	mhi/snm	AH (fused/fused) S/TAM/P
Masakin (Ngile)	jle	AH (NEG AUX)
Talodi	tlo	AH (NEG AUX)
Mbalanhu	lnb	AH (pseudo-unfused)
Likpe	lip	AH (S/TAM/P?)
Maasai	mas	AH ?LV =DEP
Nkore-Kiga	nyn	AH [Aux = DEP (LOC)!]
Didinga	did	AH ~ 2x
Diola-Fogny	dyo	AH ~ 2x
Gimira (Benchnon)	bcq	AH ~ 2X
Murle	mur	AH ~ 2x
Tonga	toh	AH ~ fused 2x
Akoose	bss	AH ~ V-Complement
Konde	kde	AH + CONEG + S/TAM/P
Ma	msj	AH + DEP
Maale	mdy	AH + DEP
Togbo	tor	AH + DEP
Ngizim	ngi	AH + S/TAM/P
Bagirmi	bmi	AH +DEP
Baka	bdh	AH +DEP
Beja	bej	AH +DEP
Fadicca (Nobiin)	fia	AH +dEP
Gula Zura	kcm	AH +DEP
Haro	kqy	AH +DEP
Hone	juh	AH +DEP
Katcha	xtc	AH +DEP
Mayogo	mdm	AH +DEP
Moloko	mlw	AH +DEP
Morokodo	mgc	AH +DEP
Mundu	muh	AH +DEP
Sapo	krn	AH +DEP
Sara	mwm	AH +DEP
Sena	seh	AH +dep
Uduk	udu	AH +DEP
Yulu	yul	AH +DEP

Barambu	brm	AH +DEP [f/f S/TAM/P]
Sara	mwm	AH +DEP f/f S/TAM/P
Uduk	udu	AH +Ø
Lafofa	laf	AH ±DEP
Kelo	xel	AH fused S/TAM/P
Umbundu	umb	AH n. o. p.
Ngambay-Moundou	sba	AH n.o.p.
Ntandu	kon	AH n.o.p.
'Dogon'		AH or split
Mankon	nge	AH or split
Ongota	bxe	AH or split
Boko/Busa	bqc	AH phonological DEP
Bokobaru	bus	AH phonological DEP
Burji	bji	AH S/TAM/P
Daffo Ron	cla	AH S/TAM/P
Nera	nrb	AH S/TAM/P
Eunda	ndo, nne	AH
Lese	les	AH S/TAM/P +DEP
Ngandjera	nne	AH; pseudo-unfused
Mabiha	kde	AH, LV = DEP
Beja	bej	AH/Split
Bongo	bot	AH/split
N Tonga	toy	AH; NB: S Tonga = fused AH
Oshikwanyama	kua	AH; pseudo-unfused
Punu	puu	AH
Kuteb	kub	AH; SVC > AVC
Karekare	kai	AH?
Borobo	grv	AH?, Ø?
Ejagham	etu	AH+DEP
Pajade (Badiaranke)	pbp	AH+DEP
Fula	ful	AH+DEP or Split
Koma	xom	AH+Ø
Midob	mei	AHa
Midob	mei	AHb

Ewondo	ewo	AH-like SVC
Banka (Samogo)	bxw	AUX on first word, LV DEP
Uduk	udu	CO
Solongo	?kng	CO AH-like
Kikongo	kng, kon	CO AH-like V.FOC
Masakin (Ngile)	jle	f/f S/TAM/P AH
Ga	gaa	fused "AH"
Mambila	mzk; mcu	fused "AH" +DEP
!Xun	knw	fused AH
//Ani	hnh/xuu	fused AH
'Dongo	doo	fused AH
Aari	aiw	fused AH
Acholi	ach	fused AH
Afar	aar	fused AH
Akan	aka	fused AH
Akwa	akw	fused AH
Anexo-Ewe	ewe	fused AH
Anyi	any	fused AH
Avatime	avn	fused AH
Beja	bej	fused AH
Berom/Birom	bom	fused AH
Bilin	byn	fused AH
Buga-/Anda	hnh/xuu	fused AH
Burak	bys	fused AH
Cara	shg	fused AH
Chichewa	nya	fused AH
Coptic[†]	cop	fused AH
Dar Daju Daju	djc	fused AH
Dɔgɔ́ sɔ̀	dts/dgs	fused AH
Defaka	afn	fused AH
Dilling	dil	fused AH
Dime (Dim-Af)	dim	fused AH
Donno Sɔ	dds	fused AH
Echie	ibo	fused AH
Eton	eto	fused AH

Gik[u]yu	kik	fused AH
Gimira (Benchnon)	bcq	fused AH
Gogo	gog	fused AH
Gokana	gkn	fused AH
Hʉne	juh	fused AH
Holoholo	hoo	fused AH
Hungu	hum	fused AH
Jibə	jib/juo	fused AH
Jiddu Somali	jii	fused AH
Kamba	kam	fused AH
Kanuri	knc	fused AH
Kenyang	ken	fused AH
Kilba	hbb	fused AH
Kinyarwanda	kin	fused AH
Kolokuma Ijo	ijc	fused AH
Kolokuma Izon	ijc	fused AH
Kom	bkm	fused AH
Kua	tyu	fused AH
Lucazi	lch	fused AH
Luguru	ruf	fused AH
Lyaa	iyx	fused AH
Makonde	kde	fused AH
Mwera	mwe	fused AH
Naro	nhr	fused AH
Nawuri	naw	fused AH
Ngiti	niy	fused AH
Nkonya	nko	fused AH
Nymawezi	nym	fused AH
Obolo (Andoni)	ann	fused AH
Ogbronuagom (Bukuma)	ogu	fused AH
Òkó	oks	fused AH
Onicha Igbo	ibo	fused AH
Otoro	otr	fused AH
Ruri	kya	fused AH

Sena	seh	fused AH
Somali	som	fused AH
Sumbwa	suw	fused AH
Swahili	swh	fused AH
Tennet	tex	fused AH
Wannu	jub	fused AH
Wapan	juk	fused AH
Wapʰa̱	juw	fused AH
Wolaitta	wal	fused AH
Wolof	wol, wof	fused AH
Yao ?=Ciyao?	yao	fused AH
Zulu	zul	fused AH
Zaghawa/Beria	zag	fused AH (or split)
Kolokuma Izon	ijc	fused AH ~fused–psuedo-split
Vamé	mlr	fused AH +DEP
Pambia	pmb	fused AH +DEP [f/f S/TAM/P]
Kwama	kmq	fused AH or LH
Ila	ilb	fused AH or split
Klao	klu	fused AH S/TAM/P
Nera	nrb	fused AH
Kisi	kss	fused AH w/pas
Dizi (Maji)	mdx	fused AH, LV =DEP /Ø-AUX
S Tonga	toi	fused AH; NB: N Tonga = AH
Pare	asa	fused AH?
Bukusu	bxk	fused AH+DEP
Khwe/Khoe	xuu	fused AH+DEP
Midob	mei	fused AHa, fused AHb
Bushoong	buf	fused CO AH-like
Tsongo	tso	fused LH/AH
Kolonkadhi	ndo, nne	fused split or AH
Mbandja	kua	fused split or AH
Kafima	kua	fused split/AH; LV =DEP
Doyayo	dow	Fused? AH
Tonga	toh	LH ~ AH
Shambaa	ksb	LH/fused AH

Kanuri	knc	Light verb
Fur	fur/?fvr	Light vb construction AH-like
Koma	xom	NEG.AUX AH
Tumbuka	tum	new AH
Majang	mpe	pseudo-2x AH w/pas
Kolokuma Izon	ijc	pseudo-f/fS/TAM/P
Gùrdù̀ŋ	grd	S/TAM/P + AH
Fer	kah	S/TAM/P AH + DEP
Kresh	krs	S/TAM/P AH +DEP

Appendix-4: Languages w/ Doubled Inflection AVCs and complex verbs derived therefrom

Language	**ISO 639-3 code**	**Pattern**
Jalonke	yal	(S/)2
Masalit	mls	(S/)2 +DEP
Kanuri	knc	(S/)2 CAP
Tira	tic	(S/)2, 2x CLS[FR] + "SUBJ"
Muher	sgw	(S/)2x
N|uu	ngh	"2X NEG"
Kirma	cme	"2x"
Tyurama	tuz	"2x"
ǂUngkue	xam	"2x"
Wapan/Wukari	juk	"2x"
Xhosa	xho	"2x"
Nomaande	lem	"2x" [+DEP]
Zande	zne	"2x" +DEP SUBJ
Nawuri	naw	"2x"~ fused
Alagwa	wbj	2x
Babungo	bav	2x
Bagirmi	bmi	2x
Beja	bej	2x

C. B. L	?	2x
Chaha Gurage	sgw	2x
Chichewa	nya	2x
Dahalo	dal	2x
Dyola	dyu	2x
Ejagham	etu	2x
Gehode	acd	2x
Gidar	gid	2x
Harar Oromo	hae	2x
Hųne	juh	2x
Herero	her	2x
Jamsay	djm	2x
Kabba	ksp	2x
Kinyarwanda	kin	2x
Kunama	kun	2x
Kuri(y)a	kuj	2x
Lokaa	yaz	2x
Lungu	mgr	2x
Ma'di	mhi/snm	2x
Mbe	mfo	2x
Muyang	muy	2x
Mwera	mwe	2x
Ngbandi	ngb/nbw	2x
Ogbronuagom (Bukuma)	ogu	2x
Òkó	oks	2x
Ruri	kya	2x
Sese Gumuz	guk	2x
Setswana	tsn	2x
Siluyana	lyn	2x
Siswati	ssw	2x
Tigrinya	tir	2x
Vute	vut	2x
Yambasa	yas	2x
Zing Mumuye	mzm	2x
Noni	nhu	2x [1sg only?]

Fur	fur/ʔfvr	2x (not yet)
(I)Rigwe	iri	2x (+origin)
Mangbetu	mdj	2x (±DEP) S/TAM/P
Shona	sna	2x (SUBJ +DEP?)
Kua	tyu	2x ~ AH
Dar Daju Daju	djc	{2x/AH/split?}
Gula Méré	kcm	2x ~ AH+DEP
Sukuma(-Kiiya)	suk	2x ~ LH
Gula Sara	kcm	2x ~ LH +DEP
Temein	teq	2x + DEP
Tumbuka	tum	2x + DEP < say
Meje	mdj	2x + S/TAM/P
Ngiti	niy	2x AUX = DEP
Sonjo	soz	2x AUX= DEP!
Ebang	hbn	2x CLS[FR]
Otoro	otr	2x CLS[FR]
Heiban	hbn	2x CLSFR
Gworok/Kagoro	kcg	2x for 1SG w/some Vs
Tumale	tag	2x fused/LH
Aka	soh	2x LV = DEP
Gade	ged	2x LV = DEP
Oromo of Wellega	gaz	2x LV = DEP
Turkana	tuv	2x LV = DEP
Bukusu	bxk	2x LV =DEP
Duala	dua	2x LV =DEP
Hemba	hem	2x LV =DEP
Kana	ogo	2x LV =DEP
Maasai	mas	2x LV =DEP
Akan	aka	2x NEG
Bongo	bot	2x NEG
Twi	aka	2x NEG
Gùrdùŋ	grd	2x NEG Ø-AUX?
Linda	liy	2x or pseudo-2x with pas
Gaam	tbi	2x S/TAM/P

Shatt	shj	2x SUBJ (±DEP)
Berta	wti	2x SUBJ +DEP
Moro	mor	2x SUBJ! (NOT CLS[FR])
Songye	sop	2X SVC
Ngambay-Moundou	sba	2x vs. AH n.o.p.
Venda	ven	2x, LV = DEP
Ateso	teo	2x, LV =DEP
Degema	deg	2x?
Egyptian[†]	egy	2x?
Akoose	bss	2x-SUBJ
Mursi	muz	AH ~ ?2x?
Didinga	did	AH ~ 2x
Diola-Fogny	dyo	AH ~ 2x
Gimira (Benchnon)	bcq	AH ~ 2x
Murle	mur	AH ~ 2x
Tonga	toh	AH ~ fused 2x
Ik	ikx	2x/AH
Tima	tms	fused (S/)2
Krongo	kgo	fused + 2x?
Amharic	amh	fused 2x
Coptic[†]	cop	fused 2x
Hamer	amf	fused 2x
Kemantney	ahg	fused 2x
Kunama	kun	fused 2x
Ogbronuagom (Bukuma)	ogu	fused 2x
Tama	tma	fused 2x
Tennet	tex	fused 2x
Tonga	toh	fused 2x
Lango	laj	fused 2x
Molo	zmo	fused 2x
Khoe	xuu	fused 2x 'DEP'
Aiki [Runga]	rou	fused 2x FUT of come/go?
Koegu	xwg	fused 2x LV =DEP
Tira	tic	fused 2x OBJ
Majang	mpe	fused/pseudo-2x AH w/pas

Nera	nrb	fused 2x S/TAM/P
Gonga (Kefa/Kafa)	kbr	fused LH/2x
Mbay	myb	2x ~ LH
Kuteb	kub	Pseudo-2x w/ICP
Afar	aar	SVC > AVC 2x LV = DEP
Gidar	gid	fused 2x [V-AUX]

Appendix-5: Languages with LEX-Headed AVCs and complex verbs derived therefrom

Language	ISO 639-3 Code	Pattern
Sango	sag	"LH"
Gbaya 'Buli	gso	"LH" +DEP.AUX!
Sukuma(-Kiiya)	suk	2x ~ LH
Gula Sara	kcm	2x ~ LH +DEP
Kwama	kmq	fused AH or LH
Aari	aiw	fused LH
Beja	bej	fused LH
Diola	?jol	fused LH
Evale	kua	fused LH
Ewe	ewe	fused LH
Hamer	amf	fused LH
Hdi	xed	fused LH
Karimojong	kdj	fused LH
Katla	kcr	fused LH
Kemantney	ahg	fused LH
Kunama	kun	fused LH
Langi	lag	fused LH
Mbembe	mfn	fused LH
Nyimang	nyi	fused LH
Vamé	mlr	fused LH
Berta	wti	fused LH (FUT)
Mamvu	mdi	fused LH = V AUX

Nandi	kln	fused LH, LV =DEP ~ -Ø
Gonga (Kefa/Kafa)	kbr	fused LH/2x
Tumale	tag	fused LH/2x
Tsongo	tso	fused LH/AH
Koegu	xwg	fused LH?
Ndamba	ndj	fused LH?
Mwera	mwe	fused LH+DEP
Gidar	gid	fused split/LH
!Ora	kqz	LH
'Berber'	ber	LH
Acholi	ach	LH
Baale	koe	LH
Bongo	bot	LH
Burak	bys	LH
Doyayo	dow	LH
Ejagham	etu	LH
Evale	kua	LH
Ewe	ewe	LH
Gidar	gid	LH
Grebo	?gry; grv; gec; gbo; grj?	LH
Hamer	amf	LH
Harar Oromo	hae	LH
Ik	ikx	LH
Ju/'hoan	ktz	LH
Katla	kcr	LH
Kerewe	ked	LH
Kolokuma Ijo	ijc	LH
Kunama	kun	LH
Laal	gdm	LH
Lele	lln	LH
Mödö	?bex	LH
Nama	naq	LH
Noni	nhu	LH
Obolo (Andoni)	ann	LH

Orig	tag	LH
Sele	snw	LH
Supyire	spp	LH
Turkana	tuv	LH
ut-Ma'in	gel	LH
Vamé	mlr	LH
Kabba	ksp	LH (in 2PL)
Sandawe	sad	LH (or split?)
Mbay	myb	LH ~ 2x
Tonga	toh	LH ~ AH
Gidar	gid	LH + ICP
Tennet	tex	LH +DEP
Ik	ikx	LH = V AUX
Dar Daju Daju	djc	LH IRR
Mada	mda	LH or "S/TAM/P"
Otoro	otr	LH source
Tamashek	taq	LH/(?pseudo)split clitic
Shambaa	ksb	LH/fused AH
Koyo	god	LH?
Nyimang	nyi	LH?
Twi	aka	pseudo-{LH ~ AH}
Inor	ior	split > LH
Maasai	mas	split > LH
N. Sotho	nso	split, LV =DEP or LH
Tasawaq	twq	SVC > AVC LH

Appendix-6: Languages with Split and Split/Doubled Inflectional AVCs and complex verbs derived therefrom

Language	ISO 639-3 Code	Pattern
Jalonke	yal	(S/)2
Tira	tic	(S/)2
Masalit	mls	(S/)2 +DEP
Kanuri	knc	(S/)2 CAP
Muher	sgw	(S/)2x
Tama	tma	(S/)2x
W. !Xoon	nmn	?split
Yakoma	yky	"S/2"
Zing Mumuye	mzm	"split"
Dar Daju Daju	djc	2x/AH/split?
'Dogon'		AH or split
Mankon	nge	AH or split
Ongota	bxe	AH or split
Beja	bej	AH/Split
Bongo	bot	AH/split
Tima	tms	fused (S/)2
Pero	pip	fused 2x +split
Zaghawa/Beria	zag	fused AH (or split)
Ila	ilb	fused AH or split
Gidar	gid	fused ICP
Gawwada Dullay	gwd	fused S/2
Mbalanhu	lnb	fused S/2
Otoro	otr	fused S/2
Pero	pip	fused S/2
Berta	wti	fused split
Bolanci	bol	fused split
Dho-Alur	alz	fused split
Gawwada Dullay	gwd	fused split
Karekare	kai	fused split
Kemantney	ahg	fused split
Pero	pip	fused split

Ebang/Heiban	hbn	fused split + S/2
Egyptian[†]	egy	fused split +DEP
Sese Gumuz	guk	fused split?
Langi	lag	fused split+DEP
Sandawe	sad	LH (split?)
Tamashek	taq	LH/(?pseudo)split clitic
Rashad	ras	NEG split
Tagoi	tag	NEG split
Tumale	tag	NEG split
(Ki)Matumbi	mgw	S/2
'Dogon'		S/2
Beja	bej	S/2
Bemba	bem	S/2
Bolanci	bol	S/2
Bungu	wun	S/2
Ciyao	yao	S/2
Doyayo	dow	S/2
Egyptian Arabic	arz	S/2
Ejagham	etu	S/2
Eleme	elm	S/2
Giryama	nyf	S/2
Harar Oromo	hae	S/2
Haya	hay	S/2
Ibibio	ibb	S/2
Karekare	kai	S/2
Kemantney	ahg	S/2
Kinyarwanda	kin	S/2
Kirundi	run	S/2
Kuri(y)a	kuj	S/2
Lamba	lam	S/2
Lango	laj	S/2
Luba	lua, lub	S/2
Luganda	lug	S/2
Mbalanhu	lnb	S/2

Mbay	myb	S/2
Nkore-Kiga	nyn	S/2
Oromo of Wellega	gaz	S/2
Pero	pip	S/2
Pimbwe	piw	S/2
Pokomo	poj or pkb	S/2
Ruri	kya	S/2
Setswana	tsn	S/2
Shambala	ksb	S/2
Siswati	ssw	S/2
Songye	sop	S/2
Sukuma(-Kiiya)	suk	S/2
Swahili	swh	S/2
Vamé	mlr	S/2
Xhosa	xho	S/2
Yao ?=Ciyao?	yao	S/2
Lango	laj	S/2
Sena	seh	S/2 +DEP
Lungu	mgr	S/2 ±DEP
Akoose	bss	S/2 NEG
Baule	bci	S/2 origin
Gehode	acd	S/2 origin
Echie	ibo	S/2 PHB
Oshikwanyama	kua	S/2, pseudo-unfused
Ogbronuagom (Bukuma)	ogu	S/2; split
Makua-Maverone	xme	S/2x
Polci	plj	S/TAM/P +split
Afuzare/Zarek/Izere	fiz	split
Akwa	akw	split
Anexo-Ewe	ewe	split
Bolanci	bol	split
Dagaare	dgi	split
Dho-Alur	alz	split
Eleme	elm	split
Ewe	ewe	split

Gidar	gid	split
Gimira (Benchnon)	bcq	split
Harar Oromo	hae	split
Katcha	xtc	split
Laal	gdm	split
Ma'di	mhi/snm	split
Mbe	mfo	split
Òkó	oks	split
Orig	tag	split
Oromo of Wellega	gaz	split
Pero	pip	split
Shabo	sbf	split
Sil'te	stv	split
Supyire	spp	split
Swahili	swh	split
Tiv	tiv	split
Turkana	tuv	split
Vute	vut	split
Hadza	hts	split (+ DEP)
Tennet	tex	split +DEP
Inor	ior	split > LH
Maasai	mas	split > LH
Kolokuma Ijo	ijc	split NEG.LV
Dasenech	dsh	split [+S/TAM/P?]
N. Sotho	nso	split, LV =DEP; or LH
Kana	ogo	split, pseudo-split
Gidar	gid	split/LH,
Kana	ogo	split/pseudo-split
Anywa	anu	split?
Ju/ʼhoan	ktz	split?
Kanuri	knc	split?
Obolo (Andoni)	ann	split?
Yoruba	yor	split?
Fur	fur/?fvr	split? *k-*

Bijogo	bjg	SVC > split origin

Appendix-7: Languages with fused Subject/TAM/Polarity AVCs and complex fused/fused verbs derived therefrom

Language	ISO 639-3 Code	Pattern
(I)Rigwe	iri	S/TAM/P
Ader Hausa	hau	S/TAM/P
Angas	anc	S/TAM/P
Bagirmi	bmi	S/TAM/P
Baka	bdh	S/TAM/P
Baule	bci	S/TAM/P
Bejamso-Grubi Nchumuru	ncu	S/TAM/P
Boko/Busa	bqc	S/TAM/P
Bokobaru	bus	S/TAM/P
Bongo	bot	S/TAM/P
Buem/Lelemi	lef	S/TAM/P
Daba	dbq	S/TAM/P
Dangme	ada	S/TAM/P
Dewoin	dee	S/TAM/P
Ebira/Igbirra	igb	S/TAM/P
Ega	ega	S/TAM/P
Eggon	ego	S/TAM/P
Ewe	ewe	S/TAM/P
Frafra	gur	S/TAM/P
Fyem	pym	S/TAM/P
Ga	gaa	S/TAM/P
Gehode	acd	S/TAM/P
Genyanga	ayg	S/TAM/P
Gidar	gid	S/TAM/P
Guus/Sigidi	say	S/TAM/P
Hausa	hau	S/TAM/P
Idu(n)	ldb	S/TAM/P

Ikaan	kcf	S/TAM/P
Jo[wulu]	jow	S/TAM/P
Karang	kzr	S/TAM/P
Karekare	kai	S/TAM/P
Kom	bkm	S/TAM/P
Kulango	kzc/nku	S/TAM/P
Limbum	lmp	S/TAM/P
Ma'di	mhi/snm	S/TAM/P
Mbay	myb	S/TAM/P
Mbuko	mqb	S/TAM/P
Mende	men	S/TAM/P
Mundabli	boe	S/TAM/P
Nafaara	nfr	S/TAM/P
Ndemli	nml	S/TAM/P
Neyo	ney	S/TAM/P
Nyo	?ney	S/TAM/P
Oko/Ogori	oks	S/TAM/P
Sara	mwm	S/TAM/P
Shabo	sbf	S/TAM/P
Supyire	spp	S/TAM/P
Tira	tic	S/TAM/P
Tiv	tiv	S/TAM/P
Vata	dic	S/TAM/P
Wobé	wob	S/TAM/P
Wolof	wol, wof	S/TAM/P
Yemba	ybb	S/TAM/P
Yulu	yul	S/TAM/P
Dan-Gweeta	daf	S/TAM/P [NEG]
Gokana	gkn	S/TAM/P [NEG]
Mano	mev	S/TAM/P [NEG]
Nupe	nup	S/TAM/P [NEG]
Meeka	rkm	S/TAM/P [NEG] [AH]
Neyo	ney	S/TAM/P [NEG]; Tone = TNS
Guro	goa	S/TAM/P [NEG]+

Ngizim	ngi	S/TAM/P + AH
Likpe	lip	S/TAM/P + DEP
'Bozom	gbq	S/TAM/P +DEP
Polci	plj	S/TAM/P +split
Gaam	tbi	S/TAM/P 2x
Meje	mdj	S/TAM/P 2x
Daffo Ron	cla	S/TAM/P AH
Kelo	xel	S/TAM/P AH
Klao	klu	S/TAM/P AH
Fer	kah	S/TAM/P AH + DEP
Kresh	krs	S/TAM/P AH +DEP
Okpamberi	opa	S/TAM/P PRF
Duka	dud	S/TAM/P some
Dasenech	dsh	S/TAM/P split
Hadza	hts	S/TAM/P?
Kpelle	xpe	S/TAM/P? + AH
Ukaan	kcf	S/TAM/P(+DEP, split)
Fyem	pym	S/TAM/P+ 2x
Afuzare/Zarek	fiz	S/TAM/P+ AH
Gerka (Yiwom)	gek	S/TAM/P+ AH
Gùrdùŋ	grd	S/TAM/P+ AH
Montol	mtl	S/TAM/P+ AH
Burrum (Boghom)	bux	S/TAM/P+ split
Krachi	kye	S/TAM/P+ split
Siwu	akp	S/TAM/P+ split
Yakoma	yky	S/TAM/P+ split
Montol	mtl	S/TAM/P+2x
Tarok	yer	S/TAM/P+AH
Tarok	yer	S/TAM/P+AH +DEP
Dott/Zoɗi	dot	S/TAM/P+AH+DEP
Burak	bys	S/TAM/P+DEP
Dinik (Afitti)	aft	S/TAM/P+DEP
Kilba	hbb	S/TAM/P+DEP
Nomaande	lem	S/TAM/P+DEP
Wobé	wob	S/TAM/P+DEP

Dott/Zoɗi	dot	S/TAM/P+ICP
Idũ	ldb	S/TAM/P+ICP
Kohumono	bcs	S/TAM/P+OBJ
Dadiya	dbd	S/TAM/P+REDPL
Merey	meq	S/TAM/P+S/2
Awak	awo	S/TAM/P+split
Baule	bci	S/TAM/P+split
Fali	fli	S/TAM/P+split
Mofu-Gudur	mif	S/TAM/P+split
Ndut-Falor	ndv/fap	S/TAM/P+split
Non	snf	S/TAM/P+split
Zing Mumuye	mzm	S/TAM/P+split
Chip	mjs	S/TAM/P+split/DEP
Dadiya	dbd	S/TAM/P±DEP
Dera-Kanakuru	kna	fused/fused S/TAM/P
Malgwa	mfi	fused/fused S/TAM/P
Anyi	any	fused/fused S/TAM/P
Bagirmi	bmi	fused/fused S/TAM/P
Baka	mgc	fused/fused S/TAM/P
Banda Nchumuru	ncu	fused/fused S/TAM/P
Barambu	brm	fused/fused S/TAM/P
Baule	bci	fused/fused S/TAM/P
Bekwarra	bkv	fused/fused S/TAM/P
Berom/Birom	bom	fused/fused S/TAM/P
Bongo	bot	fused/fused S/TAM/P
Buem/Lelemi	lef	fused/fused S/TAM/P
Coptic[†]	cop	fused/fused S/TAM/P
Egyptian, Ancient	egy	fused/fused S/TAM/P
Egyptian, Later	egy/egx	fused/fused S/TAM/P
Ejagham	etu	fused/fused S/TAM/P
Ekpeye	ekp	fused/fused S/TAM/P
Eloyi	afo	fused/fused S/TAM/P
Karekare	kai	fused/fused S/TAM/P
Kresh	krs	fused/fused S/TAM/P

Ma	msj	fused/fused S/TAM/P
Ma'di	mhi/snm	fused/fused S/TAM/P
Mamvu	mdi	fused/fused S/TAM/P
Masakin (Ngile)	jle	fused/fused S/TAM/P
Mayogo	mdm	fused/fused S/TAM/P
Mba	mfc	fused/fused S/TAM/P
Mbembe	mfn	fused/fused S/TAM/P
Mbuko	mqb	fused/fused S/TAM/P
Merey	meq	fused/fused S/TAM/P
Moloko	mlw	fused/fused S/TAM/P
Morokodo	mgc	fused/fused S/TAM/P
Mundu	muh	fused/fused S/TAM/P
Ndemli	nml	fused/fused S/TAM/P
Ngbandi	ngb/nbw	fused/fused S/TAM/P
Pajade (Badiaranke)	pbp	fused/fused S/TAM/P
Pambia	pmb	fused/fused S/TAM/P
Rashad	ras	fused/fused S/TAM/P
Sele	snw	fused/fused S/TAM/P
Togbo	tor	fused/fused S/TAM/P
Tumale	tag	fused/fused S/TAM/P
Moru	mgd	fused/fused S/TAM/P+DEP
Lugbara	lgg	fused/fused S/TAM/P±DEP
Sara	mwm	fused/fused S/TAM/P AH +DEP
Likpe	lip	fused/fused S/TAM/P+ AH +DEP
Lese	les	fused/fused S/TAM/P AH+DEP
Mangbetu	mdj	fused/fused S/TAM/P 2x (±DEP)

Appendix 8 Index of Constructions Cited in Text

Language	Example	Construction/What is exemplified
!Ora	(459)	LV NEG-SUBJ AV or LV-NEG SUBJ AV
!Xun	(127)	'go' > FUT
'Bozom	(756)	SUBJ:PRON$_{TAM}$ LV:ASP[:DEP]
'Dongo	(660)	SUBJ-AV LV
'Dongo	(661)	SUBJ-*a*-AV-LV
(I)Rigwe	(727)	SUBJ:PRON$_{TAM}$ LV
[A]Teso	(489)-(490)	SUBJ-AV SUBJ$_{SBJNCTV}$-LV
[A]Teso	(f)	INF complement
≠Hoan	(151)	'be'.LOC > PRG
‖Ani	(171)	'do'/'make' > PROSP
‖Ani	(175)	'want' > PROSP
‖Ani	(453)	LV-INTAV-I/II-TA
‖Ani	(462)	LV-JNCT-TA < ?*LV-JNCT AV
Aari	(623)	LV:TA:SUBJ-AV < ?* LV:TA:SUBJ AV
Aari	(625)	LV:NEG:TA:SUBJ-AV
		< ?* LV:NEG:TA:SUBJ AV
Acholi	(208)	LH < VCC
Acholi	(510)	AV$_{*3\text{-}AV\text{-}TA}$ SUBJ-LV
Acholi	(518)	SUBJ-TA-LV[:INF] <*SUBJ-AV LV:INF
Adamawa Fulani	(645)	SUBJ-AV:TA LV-INF
Ader Hausa	(431)	SUBJ:AV$_{TAM}$ LV
Afar	(17)	AH+PRTCPL V AUX
Afar	(105)	SUBJ-LV-MOD.DEP AV-SUBJ-TAM
Afar	(611)	LV-INF-TA:SUBJ
		< LV-INF AV-TA:SUBJ
Aiki	(174)	'do'/'make' > light verb stem
Aiki	(786)	LV SUBJ-AV-TAM-ASSRTV
Aiki	(793)	LV OBJ-SUBJ-LightVerb-ASSRTV
Akan	(194)	SVC
Akan	(673)	NEG-AV NEG-LV
Akan	(773)	SUBJ-TA-LV < *?SUBJ-AV LV
Akoose	(248)	SUBJ-'AV' INF-LV-Ø
Akoose	(270)	SUBJ-AV SUBJ-LV-Ø

Alaaba	(150)	'be' > PRF
Alaaba	(581)	LV:VN_{<ABS>} AV-SUBJ:TA
Alaaba	(635)	LV-SUBJ:TAM < ?* LV[-CV_{<SUBJ>}] AV:SUBJ
Alagwa	(528)	AV-SUBJ LV-SUBJ
Amharic	(613)	LV-SUBJ-AV-SUBJ < ?*LV-SUBJ AV-SUBJ
Amo	(706)	SUBJ-AV SUBJ-LV-OBJ
Amo	(776)	SUBJ.TA-LV < SUBJ-AV LV
Amo	(778)	SUBJ-TA-SUBJ-LV < ?*SUBJ-AV SUBJ-LV
Amo	(780)	SUBJ-TA-LV-OBJ < ?*SUBJ-AV LV-OBJ
Ancient Egyptian	(815)	AV LV:TA SUBJ
Angas	(432)	SUBJ:AV_{<TAM>} LV
Anywa	(483)	AV-SUBJ LV-INF
Anywa	(485)	AV-SUBJ LV<VN>
Ateso	(202)-(203)	2x < VCC modal subordination
Ateso	(481)-(482)	SUBJ-AV SUBJ_{<SBJNCTV>}-LV
Ateso	(51)	2x +modal subordination
Ateso	(123)	'come' > PRF/PST
Babungo	(682)	SUBJ AV SUBJ LV
Bagirmi	(760)	SUBJ:PRON:TA INF-LV SUBJ-AV_{<TA>} INF-LV
Bagirmi	(762)	SUBJ.PRON.TA SUBJ-LV ASP
		< ?*SUBJ-AV_{<TA>} SUBJ-LV ASP
Bambara	(124)	'come' > PRF
Baŋ[er]i Me	(643)	SUBJ-AV *n*-LV
Barambu	(638)	SUBJ-AV DEP-LV
Bari	(467)	SUBJ:TA-AV LV
Basaa	(253)	SUBJ-TAM-AV LV-*a*
Beja	(216)	fused AH <*V AUX
Beja	(573)	LV-GER SUBJ-MOD-AV
Berber	(817)	AV SUBJ-LV:TA
Beria/Zaghawa	(785)	LV OBJ-AV-SUBJ-DECL/AFFRM/ASSRTV
Berta	(629)	LV-SUBJ:TA < ?*LV AV:SUBJ
Bijogo	(649)	SUBJ-AV ŋɔ-LV[:ACCOMPLI]
Bijogo	(651)	SUBJ-AV *n*-LV
Bijogo	(653)	SUBJ-AV *ta n*-LV
Bijogo	(693)	SVC:SUBJ-V$_1$ [sv]-OBJ-V$_2$
		>> V$_1$ > AV V$_2$ > LV in AVC
Bilin	(186)	'say' > light verb stem

Bilin	(633)	LV-SUBJ:TA < ?* LV /say/:SUBJ:TA
Birom	(2)	FUT
Bolanci	(73)	SUBJ-AV LV-OBJ
Bongo	(714)	AV INF:LV-/=SUBJ
Buduma	(155)	'be'.LOC > PRG
Buga-/ʌnda	(463)	LV-JNCT-TA < ?*LV-JNCT AV
Bukusu	(9)	'see' not 'be'
Bukusu	(257)	SUBJ-TAM-AV INF-LV-*a*
Bukusu	(373)	?*SUBJ-AV SUBJ-LV:*e* > SUBJ-TAM-LEX:*e*
Bungu	(322)	SUBJ-AV-ASP-*a* SUBJ-LV-*a*
Burji	(577)	LV-CONJ AV:TA:SUBJ
Burunge	(548)	SUBJ-OBJ LV:PL-SUBJ
Burushaski	(234)	fused S/2 OBJ/SUBJ
Chichewa	(54)	2x + INF
Chichewa	(367)	*SUBJ-TAM-AV INF-LV:*a* > SUBJ-TAM-TAM-INF-LV:*a*
Ciyao	(101)	SUBJ-AV SUBJ-TAM-LV
Coptic	(821)	TA-SUBJ-LV:INF < AV-SUBJ LV:INF
Coptic	(827)	TA-SUBJ-LV:INF-SUBJ < ?* AV-SUBJ LV:INF-SUBJ
Dabarro Somali	(13)	AH+INF V AUX
Dadiya	(751)	SUBJ:PRON<TAM> LV
Dadiya	(753)	SUBJ:PRON<TAM> LV:ASP
Dar Daju Daju	(797)	'AV'-TA REDPL:LV-INF
Dar Daju Daju	(813)	AV LV-TA
Dar Daju Daju	(837)	LV-SUBJ:TA < ?*LV SUBJ:TA < ?*LV SUBJ-AV<TA>
Dasenech	(241)	S/TAM/P + split
Dasenech	(593)	AV:SUBJ NEG-LV:TA
Datooga	(530)	(SUBJ)-AV-SUBJ SUBJ<SBJNCTV>-LV
Datooga	(554)	TA-SUBJ<SBJNCTV>-LV< ?* AV SUBJ<SBJNCTV>-LV < ??* SUBJ-AV SUBJ<SBJNCTV>-LV
Datooga	(557)	TA-SUBJ-LV-SUBJ < ?*AV-SUBJ LV-SUBJ
Dho-Alúr̀	(494)	SUBJ-AV LV-NEG
Dho-Alúr̀	(521)	SUBJ-TA-LV-INDEP < *SUBJ-AV LV-INDEP
Dho-Alúr̀	(522)	SUBJ-TA-SUBJ-LV-INDEP < *SUBJ-AV SUBJ-LV-INDEP

Dholuo	(472)	SUBJ-AV LV:INF
Dilling Hill Nubian	(893)	LV-TA-SUBJ < ?*LV AV-SUBJ
Dinik	(891)	SUBJ:AV$_{<TAM>}$ LV:DEP
Dinka	(514)	AV:SUBJ/OBJ LV
Diola Fogny	(58)	AH ~ 2x
Dizi/Maji	(211)	AH CCC ss
Dizi/Maji	(597)	AV-SUBJ LV-TA-DEP$_{<CONEG>}$
Dongolese Nubian	(187)	'say' > light verb stem
Donno So	(140)-(141)	'be' > PROG
Dott	(442)	SUBJ:AV$_{<TAM>}$ LV[-PL]
Doyayo	(198)-(199)	S/2 orig < SVC
Doyayo	(83)	AV-SUBJ-OBJ LV-TAM
Doyayo	(85)	"SUBJ" AV "SUBJ" LV-OBJ
Doyayo	(132)	'go' > PRF
Doyayo	(695)	AV-OBJ[-SUBJ] LV-TA
Doyayo	(710)	SUBJ AV SUBJ LV-OBJ
Duala	(250)	SUBJ-TAM-AV LV-*a*
Duala	(681)	SUBJ AV SUBJ LV
Duka	(764)	SUBJ.PRON.TA LV < *SUBJ-AV$_{<TA>}$LV
Duka	(766)	SUBJ.PRON.TA DEP-LV
		< *SUBJ-AV$_{<TA>}$ DEP-LV
Duma	(264)	SUBJ-TAM-AV LOC[:INF]-LV-*a*
Dyola	(671)	SUBJ-AV SUBJ-LV
Ebang	(885)	SUBJ.CLS-AV SUBJ.CLS-OBJ-LV
Echie	(147)	'be' > dummy AUX
Echie	(657)	SUBJ-AV LV$_{<PHON.DEP>}$
Egyptian	(831)	TA-SUBJ-LV:INF-OBJ
		< ?*AV:SUBJ LV:INF:OBJ
Egyptian Arabic	(799)	AV:TA:SUBJ LV:TA:SUBJ
Egyptian Arabic	(801)	AV:TA:SUBJ ASP:TA-LV:TA:SUBJ
Egyptian Arabic	(803)	NEG-AV:TA:SUBJ-NEG LV:TA:SUBJ
Ejagham	(99)	fused/fused S/TAM/P+(S)/2: S/T-AV S/T-LV-ASP
Ejagham	(206)	S/2 < VCC NEG split
EkeGusii	(259)	SUBJ-TAM-AV INF-LV-*a*
Eleme	(107)-(108)	2PL SUBJ-AV-SUBJ-APPL DEP-LV-SUBJ
		2PL SUBJ.P-AV LV-ASP-SUBJ.PN
		3PL SUBJ.P-AV-SUBJ.PN LV-ASP

Eleme	(200)-(201)	Split origin < SVC
Eleme	(8)	'very'
Eleme	(19)	AH+DEP AUX V
Eleme	(72)	SUBJ-AV LV-OBJ
Eleme	(701)	2-AV LV-HAB-2PL
Eleme	(703)	3-AV-3PL LV-HAB
English	(26)	AH+DEP$_{i/ii}$
Eton	(341)	SUBJ:AV [INF:]LV
Eunda	(342)	SUBJ:AV LV//NEG.SUBJ.PRON:AV LV
Evale	(351)	SUBJ:AV AV-LV:*a*
Ewe	(118)	'come' > FUT
Ewe	(154)	'be'.LOC > PRG
Ewe	(195)	SVC
Ewe	(655)	SUBJ-TA-AV LV
Ewe	(667)	SUBJ-AV REDPL-LV
Ewe	(685)	SUBJ-AV LV-OBJ
Fali	(754)	SUBJ:PRON$_{<TAM>}$ LV:ASP
Fer (Kara)	(116)	'come' > FUT
Fur	(791)	LV SUBJ.LightVerb-TA <DO>
Fyem	(728)	SUBJ:PRON$_{<TAM>}$ LV
Fyem	(770)	SUBJ.AV/PRON$_{<TAM>}$ SUBJ.AV/PRON$_{<TAM>}$ LV-OBJ
Ga	(758)	SUBJ:PRON$_{<TAM>}$ LV-NEG
Gade	(49)	"2x" phonologically dependent subject
Gade	(679)	a. SUBJ AVSUBJ LV
		b. SUBJ AVSUBJ$_{<PHON.DEP>}$ LV
Gayàr Gurduŋ	(430)	SUBJ:AV$_{<TAM>}$ LV
Georgian	(235)	fused S/2 SUBJ/OBJ
Ghulfan	(907)	LV-SUBJ:TA < ?LV AV$_{<TA>}$:SUBJ
Gidar	(228)	fused split
Gidar	(414)	SUBJ-AV LV$_{<INTRANS>}$-SUBJ vs. SUBJ-AV LV$_{<TRANS>}$-OBJ
Gidar	(416)	SUBJ$_{<FEM.SG>}$-AV INF-LV-SUBJ$_{<FEM.SG>}$
Gidar	(418)	SUBJ$_{<1SG>}$-AV LV-SUBJ$_{<1SG>}$
Gidar	(420)	AV-SUBJ LV-OBJ
Gidar	(422)	SUBJ-LV AV-OBJ-TA

Gidar	(424)	AV SUBJ-LV-SUBJ
Gidar	(426)	AV LV-OBJ-SUBJ
Gidar	(447)	SUBJ-LV-SUBJ-TAM < ?*SUBJ-LV SUBJ-AV or < *SUBJ-LV-SUBJ<ICP> AV
Gidole	(631)	LV-NEG:TA:SUBJ < ?*LV NEG:AV:SUBJ
Gimira/Benchnon	(18)	AH+PRTCPL/GENDER V AUX
Gimira/Benchnon	(79)	LV-NEG AV-SUBJ
Gimira/Benchnon	(583)	LV:PRTCPL:SUBJ<GENDER/NUMBER> AV:TA:SUBJ<PERSON/GENDER/NUMBER>
Gimira/Benchnon	(591)	LV-NEG AV-TA:SUBJ
Giryama	(312)	SUBJ-TAM-AV SUBJ-*ka*-LV:*a ka* CNSCTV
Gisamjanga Datooga	(556)	TA-SUBJ-LV-SUBJ < ?*AV-SUBJ LV-SUBJ
Godie	(5)	IMPRF AUX V/V AUX
Goemai	(161)	'sit' > IRR
Gogo	(364)	*SUBJ-AV INF-LV:*a* > SUBJ-TAM<INF>-LV:*a*
Gula Meré	(157)	'sit' > PRG
Gula Meré	(158)	'sit' > PRG
Gula Meré	(641)	SUBJ-AV INF-LV
Gula Meré	(670)	SUBJ-AV SUBJ-LV
Gula Sara	(33)-(34)	AV INF:LV VS. SUBJ-AV SUBJ-LV
Gula Zura	(131)	'go' > IMM.FUT
Guro	(737)	SUBJ.OBJ.PRON.TA.[NEG] LV:ASP < ??*SUBJ-OBJ-AV<TAM/NEG> LV-ASP
Guus (Sigidi)	(444)	SUBJ:AV<TAM> LV
Guus (Sigidi)	(445)	SUBJ:AV<TAM> LV
Hadza	(526)	AV-SUBJ LV
Hadza	(532)	AV-SUBJ_i LV-SUBJ_j
Hadza	(538)	AV:TA:SUBJ LV-OBJ
Hadza	(561)	LV-SUBJ:TA < ?*LV AV:SUBJ
Hadza	(563)	LV-TAM-SUBJ:TA < ?*LV-TAM AV:SUBJ
Hadza	(565)	LV-OBL/OBJ-SUBJ:TA < ?*LV-OBL/OBJ AV:SUBJ
Hamer	(225)	fused 2x TAM
Hamer	(605)	AV LV-ASP
Hamer	(607)	LV-ASP AV
Harar Oromo	(80)	LV-NEG-TAM AV-SUBJ
Harar Oromo	(587)	LV-SUBJ AV-SUBJ

Harar Oromo	(595)	NEG-LV:TA AV:SUBJ
Harar Oromo	(d)	NEG.AV+DEP.AV
Harar Oromo	(e)	NEG.AV+DEP.AV
Hausa	(406)-(407)	(402) *za-* AV-SUBJ LEX$_{[<PHON.DEP>]}$
Hausa	(242)	S/TAM/P + AH
Hausa	(408)	(404) *–kan* SUBJ-AV LV$_{[<PHON.DEP>]}$
Hausa	(409)	(405) *–na* SUBJ-AV LV-DEP
Hausa	(410)	(403) *ba-* AV-SUBJ LV-DEP
Haya	(70)	2x + DEP.AV
Haya	(327)	SUBJ-TM-AV SUBJ-TA-LV:*a*
Hdi	(427)	AV LV-TAM:OBJ-SUBJ
Heiban	(857)	SUBJ.CLS-AV SUBJ.CLS-LV
Hemba	(52)	2x + *-e*
Hemba	(96)	SUBJ-TAM-AV SUBJ-LV-*a*
Herero	(252)	SUBJ-TAM-AV LV-*a*
Holoholo	(24)	fused AH+CONEG A-V
Holoholo	(369)	*SUBJ-AV LOC-INF-LV:*a*
		> SUBJ-TAM$_{<AUX>}$-LOC-INF-LV:*a*
Hung'an	(7)	NEG
Hungu	(365)	*SUBJ-AV INF-LV:*a*
		> SUBJ-TAM$_{<INF>}$-LV:*a*
Ibibio	(94)	SUBJ-TAM-AV-NEG SUBJ-LV
Ibibio	(697)	SUBJ-AV-[TA]-NEG SUBJ-LV
Idũ	(731)	SUBJ:PRON$_{<TAM>}$ LV
Idũ	(732)	SUBJ:PRON$_{<TAM>}$ LV SUBJ:DEP
Ik	(29)	LH V AUX
Ila	(384)	*SUBJ-TAM-AV LV:*ile*$_{PRF}$ > SUBJ-TAM-TAM-LV-*ile*$_{PRF}$
Inor	(609)	SUBJ-LV-ASP AV < *SUBJ-LV-ASP *AV:TA:3M
Iraqw	(524)	LV-CON AV-SUBJ
Iraqw	(534)	OBJ-AV LV:PL-SUBJ
Izi	(663)	[SUBJ] AV-TA LV
Jalonke	(683)	SUBJ AV SUBJ LV
Jiddu Somali	(218)	fused AH <*V AUX
Kabba	(63)	AH vs. 2x paradigms
Kabba	(64)	AH vs. 2x paradigms
Kabba	(65)	AH vs. 2x paradigms

Kinyarwanda	(258)	SUBJ-TAM-AV INF-LV-*a*
Kinyarwanda	(304)	NEG-SUBJ-AV SUBJ-LV:*a* ~ SUBJ-AV NEG-SUBJ-LV:*a*
Kinyarwanda	(318)	SUBJ-AV SUBJ-TAM-LV:*a*
Kinyarwanda	(375)	*SUBJ-AV [INF-]LV:*a* > SUBJ-TAM-LV:*a*
Kinyarwanda	(378)	SUBJ-AV INF-LV:*a*
Kirma	(133)	'leave' > PROG
Kirma	(675)	SUBJ AV SUBJ LV
Kirundi	(46)	2x SUBJ+TAM
Kisi	(a)	SVOO//S AUX OV
Klao	(723)	SUBJ.PRON:TA LV[-ASP/DEP] < SUBJ-AV<TA> LV[-ASP/DEP]
Koegu	(246)	fused/fused S/TAM/P+2x±DEP
Kohumuno	(738)	SUBJ.OBJ.PRON.TAM
Kokit Gumuz	(620)	TA-LV-SUBJ < ?*AV LV-SUBJ
Kokit Gumuz	(621)	TA:SUBJ-LV-TA < ?*AV-SUBJ LV-TA
Kolokuma Izon	(169)	'stay' > PRG
Kolonkadhi	(357)	NEG:SUBJ:AV-LV:*a*
Kpelle	(734)	SUBJ.PRON.TA LOC-LV < ?* SUBJ-AV<TAM>LOC-LV
Kresh	(152)	'be'.LOC > PRG
Kresh	(153)	'be'.LOC > PRG > PRS?
Krongo	(128)	'go' > FUT
Krongo	(841)	SUBJ-AV INF:LOC-LV
Krongo	(843)	AV<[PL:]PHB> INF:LOC-LV
Kua	(461)	LV-JNCT-TA < ?*LV-JNCT AV
Kulango	(718)	SUBJ:AV<TAM> LV
Kunama	(166)-(167)	'stay' > PRG
Kunama	(236)	fused S/2 SUBJ/ASP
Kunama	(571)	LV-DEP AV-SUBJ-TA
Kunama	(601)	SUBJ-AV SUBJ-LV-TA
Kuri(y)a	(89)	SUBJ-TAM-AV-*e* SUBJ-OBJ-LV-*e*
Kuriya	(319)	SUBJ-AV SUBJ-TAM-LV:*a*
Kùrùkù Gurduŋ	(429)	SUBJ:AV<TAM> LV
Kwambi	(355)	NEG:SUBJ:AV-LV-CONEG
Kwami	(397)	AV:SUBJ:TAM LV:VN
Kwerba	(36)	LH+DEP
Kxoe	(165)	'stay' > DUR/CONT

Laal	(47)	"2x"
Laal	(677)	SUBJ AV SUBJ LV
Laal	(688)	SUBJ AV LV-OBJ
Lafofa	(851)	SUBJ-AV LV
Lafofa	(876)	SUBJ-AV LV-ASP
Lamba	(87)	SUBJ-TAM-AV SUBJ-TAM-OBJ-LV
Lamba	(205)	S/2 < VCC OBJ/SUBJ split
Lango	(176)-(177)	'want' > PROSP
Lango	(6)	NEG
Lango	(111)	'come' > FUT
Lango	(469)	SUBJ-AV LV:INF
Lango	(471)	SUBJ-AV LV-INF
Lango	(492)	SUBJ-AV[:TA] SUBJ-LV:TA
Lango	(496)	SUBJ-AV-TA SUBJ-LV-TA-OBJ
Lango	(498)	SUBJ-AV SUBJ-LV-TA
Lango	(512)	AV$_{<*3-[TA]-AV>}$ SUBJ-LV[-TA-OBJ]
Lango	(517)	SUBJ-AV LV:INF
Later Egyptian	(839)	LightVerb-SUBJ.TA LV
		< ?*LightVerb AV$_{<TA>}$:SUBJ LV
Lotuko	(112)	'come' > FUT
Lotuko	(473)	SUBJ-AV LV:INF
Luba	(324)	SUBJ-TAM-AV SUBJ-ASP-LV:*a*
Luguru	(114)	'come' > FUT
Lungu	(42)	2x + -*a*
Lungu	(274)	SUBJ-TAM-AV SUBJ-LV-*a*
Lungu	(308)	SUBJ-TAM-AV SUBJ-LV:*e*
Lyaa	(371)	*SUBJ-AV LOC-INF-LV:*a*
		> SUBJ-TAM$_{<AUX>}$-LOC-LV:*a*
Ma	(782)	SUBJ.TA-AV INF-LV
		< * SUBJ-AV [SUBJ-]AV INF-LV
Ma'di	(45)	2x NPST
Maale	(569)	LV-INF AV-TA
Maasai	(475)	SUBJ-AV INF-LV
Maasai	(477)	SUBJ-AV INF-LV-INF
Maasai	(479)	3-AV SUBJ-LV
Maasai	(481)	3-AV CONJ-SUBJ-LV
Maba	(787)	LV SUBJ-AV-DECL

Majang	(21)	AH+CONEG AUX V
Makua-Maverone	(325)	SUBJ-TAM-AV SUBJ-ASP-LV:*a*
Mamvu	(139)	'be' > PROG
Mamvu	(783)	AV LV ~ LV AV
Manding	(119)	'come' > FUT
Maninka	(156)	'be'.LOC > PRG
Masakin	(911)	SUBJ:TA-LV < ?*SUBJ:AV_{TA} LV
Masakin	(913)	LV-SUBJ:TA < ?* LV SUBJ:AV_{TA}
Masalit	(130)	'go' > IMM.FUT
Masalit	(146)	'be' > dummy AV
Masalit	(178)	'want' > NEC
Masalit	(805)	SUBJ-LV[-DEP] SUBJ-AV
Masalit	(807)	SUBJ-LV[-DEP] SUBJ-AV-TNS
Masalit	(809)	SUBJ-LV-NEG SUBJ-AV-TNS
Masalit	(833)	SUBJ-LV-DEP-[NEG]-(SUBJ:)TA
		< ?*SUBJ-LV-DEP-[NEG] SUBJ-AV
Mbalanhu	(345)	SUBJ:AV AV LV
Mbalanhu	(347)	NEG.SUBJ:AV AV LV:*a*
Mbandja	(359)	NEG:SUBJ:AV-AV-LV:*a*
Mbay	(32)	LH ~ 2x
Mbay	(67)	LH ~ 2x
Mbay	(204)	S/2 < VCC OBJ/SUBJ split
Mbay	(669)	SUBJ-AV SUBJ-LV
Mbay	(705)	SUBJ-AV SUBJ-LV-OBJ
Mbay	(716)	AV SUBJ-LV < SUBJ-AV SUBJ-LV
Mbe	(686)	SUBJ-AV LV-OBJ
Mbodomo	(665)	[SUBJ] AV-TA LV
Mbugwe	(292)	OBJ-LV:*a* SUBJ-AV
Mbugwe	(536)	OBJ-LV SUBJ-AV
Mbuko	(433)	SUBJ:AV_{TAM} LV
Mbuko	(449)	SUBJ:AV_{TAM} LV:/-TAM
Mbya Guarani	(c)	DEP.AV
Meje	(768)	SUBJ.PRON SUBJ-LV-TA
		< SUBJ-AV SUBJ-LV-TA
Mende	(240)	S/TAM/P +AH
Mende	(735)	SUBJ:TAM.AV LV

Merey	(438)	SUBJ:AV$_{⟨PRS⟩}$ LV-PRS
Merey	(440)	SUBJ:AV$_{⟨PST⟩}$ LV
Midob	(795)	LV:INF 'AV':SUBJ.TA
Midob	(835)	LV-SUBJ:TA < ?*LV SUBJ:TA
		< ?*LV SUBJ:AV$_{⟨TA⟩}$
Modern Khwe	(163)-(164)	'stand' [> PRG] > PRS
Modern Khwe	(455)	LV-CV AV-I/II-TA
Modern Khwe	(457)	LV-DEP AV-I/II-TA
Modern Khwe	(464)	TAM origin from AVCs/SVCs
Mödö	(28)	LH AUX V
Mödö	(712)	AV SUBJ-LV
Mofu-Gudur	(436)	SUBJ:AV$_{⟨TAM⟩}$ LV-OBJ
Mojave	(213)	S/2 CCC ss
Molo	(245)	fused/fused S/TAM/P+2x
Mono	(229)	fused-split
Moro	(855)	SUBJ-AV SUBJ-LV
Morokodo	(640)	SUBJ-AV INF-LV
Mpoto	(262)	SUBJ-TAM-AV LOC-INF-LV-*a*
Mudung Somali	(14)	AH+INF V AUX
Murle	(126)	'go' > FUT
Mursi	(56)	AH ~ 2x(MOD)
Muyang	(39)	?S/2 AUX V
Muyang	(120)	'come' > PROSP
Muyang	(137)	'be' > PROG
Muyang	(412)	SUBJ-AV SUBJ-LV
Mwera	(275)	SUBJ-TAM-AV SUBJ-LV-*a*
Mwera	(392)	TAM-SUBJ-LV-*e*$_{SBJNCTV}$ < ??
Mwera	(393)	SUBJ-TAM-LV:*a*
Mwera	(394)	SUBJ-AV SUBJ-[TAM]-LV:*a*
N. Sotho	(69)	2x + DEP.AV
N. Sotho	(290)	SUBJ-AV OBJ-LV:*a*
N. Tonga	(288)	SUBJ-AV INF-LV:*a*
Nafaara	(747)	SUBJ:PRON$_{⟨TAM⟩}$ LV
Nafaara	(749)	SUBJ:PRON$_{⟨TAM⟩}$ LV:ASP
Nandi	(502)-(504)	TA-SUBJ-LV-(*é*) < *AV SUBJ-LV(-*é*)
Nandi	(179)	'want' > FUT
Nandi	(238)	fused LH

Naro	(20)	AH+JNCT V AUX
Naro	(451)	LV-JNCT SUBJ AV
Ndamba	(389)	TAM-SUBJ-LV-DEP < ??
Ndemli	(720)	SUBJ:AV$_{<TAM>}$ LV
Ndendeule	(256)	SUBJ-TAM-AV INF-LV-*a*
Ndogo	(138)	'be' > PROG
Ndut-Falor	(741)	SUBJ:PRON$_{<RLS>}$ AV LV
Ndut-Falor	(744)	SUBJ:PRON$_{<RLS>}$ LV:PRF
Ndut-Falor	(745)	SUBJ:PRON$_{<FUT>}$ LV:MOD
Nera	(185)	'say' > light verb stem
Nera	(575)	LV-GER AV-TA-SUBJ
Neyo	(722)	SUBJ.PRON:TA LV[-ASP/DEP] < SUBJ-AV<TA> LV[-ASP/DEP]
Ngambay-Moundou	(11)	PREP+NOM/AUX variation
Ngambay-Moundou	(59)	AH ~ 2x
Ngambay-Moundou	(162)	'stand' > PRG
Ngambay-Moundou	(197)	S/2 origin < SVC
Ngandjera	(349)	SUBJ:AV AV-LV:*a*
Ngiti	(38)	2x AUX V
Ngizim	(244)	S/T + AH+dependent
Nkonya	(775)	SUBJ.TA-LV < SUBJ-AV LV
Nkore-Kiga	(98)	SUBJ-TAM-AV PROG-SUBJ-LV-*a*
Nkore-Kiga	(306)	SUBJ-TAM-AV SUBJ-LV:*a*
Noni	(37)	2x AUX V
Noni	(40)	SUBJ-AV SUBJ-AV SUBJ-AV … SUBJ-LV
Nyaturu	(540)	SUBJ-AV SUBJ-ASP-LV:*a*
Nyaturu	(542)	SUBJ-AV SUBJ-NEG-LV
Nyimang	(853)	AV LV:DEP
Ogbronuagom	(3)	CAP
Ogbronuagom	(93)	SUBJ-NEG-AV SUBJ-LV
Ogbronuagom	(647)	SUBJ-TA/NEG-AV INF-LV
Ogbronuagom	(699)	SUBJ-TA/NEG-AV SUBJ-LV
Òkó	(122)	'come' > MODAL <SHOULD>
Òkó	(708)	SUBJ-TA-AV SUBJ-LV
Ongota	(585)	LV-PROG/DEP SUBJ-AV
Orig	(144)	'be' > dummy AV

Orig	(880)	NEG-LV　SUBJ-AV_{TA}

Orig　　　　　　　　　(880)　　　NEG-LV　　SUBJ-AV<TA>

Orig	(880)	NEG-LV SUBJ-AV$_{\text{TA}}$
Oromo of Wellega	(16)	AH+PRTCPL V AUX
Oromo of Wellega	(43)	2x+fused/fused S/TAM/P LV-AV
Oromo of Wellega	(589)	LV-SUBJ:TA AV-SUBJ:TA
Oromo of Wellega	(603)	NEG-LV-SUBJ:TA AV-SUBJ:TA
OshiKwanyama	(353)	SUBJ:AV-LEX-élέ$_{\text{PRF}}$
Otoro	(173)	'do'/'make' > UNACCMPL
Otoro	(181)	'be lacking/absent' > NEG.AV
Otoro	(847)	SUBJ.CLS-AV PREP INF:LV
Otoro	(858)	SUBJ.CLS-AV SUBJ.CLS-LV
Otoro	(860)	SUBJ.CLS-AV$_{\text{NEG}}$ SUBJ.CLS-LV CONEG
Otoro	(862)	Subj.ProN SUBJ.CLS-AV SUBJ.CLS-LV
Otoro	(903)	ABS/OBJ-TA-ERG/SUBJ-ABS/OBJ-LV
		< ?* ABS/OBJ-AV ERG/SUBJ-ABS/OBJ-LV
Pare	(113)	'come' > FUT
Pengo	(233)	fused S/2 OBJ/SUBJ
Pero	(226)-(227)	Pseudo fused 2x+ICP; fused-split
Pero	(401)	SUBJ-AV LV[-STAT]
Pokomo	(320)	SUBJ-AV SUBJ-TAM-LV:*a*
Polci	(435)	SUBJ:AV$_{\text{TAM}}$ LV-OBJ
Rashad	(134)	'be' > PROG
Rashad	(881)	NEG-LV SUBJ-AV$_{\text{TA}}$
Rashad	(909)	SUBJ:TA-LV < ?*SUBJ:-V$_{\text{TA}}$ LV
S. Tonga	(289)	SUBJ-TAM-LV:*a*
Sai Gumuz	(618)	TA-LV-SUBJ < ?*AV LV-SUBJ
Sai Gumuz	(619)	TA:SUBJ-LV-TA < ?*AV-SUBJ LV-TA
Sandawe	(168)	'stay' > PRG
Sandawe	(550)	LV-SUBJ:TA-CNNCTV AV
Sandawe	(552)	AV-CNNCTV LV-SUBJ:TA-NEG
		LV-SUBJ:TA-NEG AV-CNNCTV
Sandawe	(559)	LV(-TA)-SUBJ:TAM LV-SUBJ:TAM <
		?*LV(-TA) AV-SUBJ
Sayanci	(399)	SUBJ-AV LV-VN
Sena	(255)	SUBJ-TAM-AV INF-LV-*a*
Sena	(280)	SUBJ-TAM-AV SUBJ-LV-*e*
Sena	(361)	*SUBJ-AV INF-LV:*a* > SUBJ-TAM-LV:*a*
Sepedi/N. Sotho	(222)	fused AH <* AUX V +INF

Sese Gumuz	(143)	'be' > dummy AUX
Sese Gumuz	(567)	INF-LV AV:SUBJ:TA
Sese Gumuz	(616)	TA-LV-SUBJ < ?*AV LV-SUBJ
Sese Gumuz	(617)	TA:SUBJ-LV-TA < ?*AV-SUBJ LV-TA
Sesotho	(223)	fused AH <* AUX V +INF
Setswana	(196)	2x orig < SVC
Setswana	(209)	2x < CCC
Setswana	(277)	SUBJ-TAM-AV SUBJ-LV-*a*
Setswana	(296)	SUBJ-AV SUBJ-NEG-LV:*e*
Setswana	(298)	SUBJ-TAM-AV SUBJ-NEG-LV:*e*
Setswana	(300)	SUBJ-NEG-AV SUBJ-LV:*a*
Setswana	(302)	NEG-SUBJ-AV SUBJ-LV:*a*
Shabo	(149)	'be' > PST
Shambaa	(339)	AV SUBJ-TA_{<AUX>}-LV:*a* ~ SUBJ-AV-LV:*a*
Shambala	(60)	AH ~ 2x(MOD)
Shambala	(310)	SUBJ-TAM-AV SUBJ-LV:*e*
Shambala	(391)	TAM-SUBJ-LV-*e*_{SBJNCTV} < ??
Shatt Daju	(110)	'come' > FUT
Shatt Daju	(159)	'sit' > PRG
Shatt Daju	(868)	SUBJ$_a$-AV_{<nj>} SUBJ$_a$-LV-*e*_{<DEP>}
Shatt Daju	(870)	SUBJ$_b$-AV_{<nj>} SUBJ$_a$-LV-*e*_{<DEP>}
Shatt Daju	(872)	SUBJ$_a$-AV_{<wuŋ>} SUBJ$_b$-LV
Shatt Daju	(874)	SUBJ$_b$-AV_{<wuŋ>} SUBJ$_b$-LV
Shona	(190)	'say' > TAM
Siluyana	(4)	PROG
Siluyana	(273)	SUBJ-TAM-AV SUBJ-LV-*a*
Siswati	(284)	SUBJ-TAM-AV SUBJ-TAM-LV-*a* =*be* PROSP
Siswati	(286)	SUBJ-FUT-AV SUBJ-LV-*a* =*be* PROG
So	(57)	AH ~ 2x
So	(117)	'come' > FUT
Standard Ewe	(170)	'stay' > HAB
Standard Ewe	(772)	SUBJ-TA-LV < *?SUBJ-AV LV
Standard Somali	(217)	fused AH <*V AUX
Sukuma	(68)	2x + DEP.AV
Sukuma	(314)	SUBJ-TAM-AV SUBJ-DEP-LV:*a*
Sukuma	(330)	AV:*e* SUBJ-LV-*e*

Sukuma	(332)	SUBJ-AV-*e* SUBJ-TAM-LV-*a*
Sukuma	(544)	SUBJ-TA-AV　[SUBJ-TA-AV] SUBJ-DEP-LV:*a*
Sukuma-Kiiya	(30)	LH AV:DEP
Sumbwa	(380)	*SUBJ-AV [INF-]LV:*a* > SUBJ-TAM-LV:*a*
Sumbwa	(382)	*SUBJ-AV LV:*ile*$_{PRF}$ > SUBJ-TAM-LV-*ile*$_{PRF}$
Swahili	(23)	S/2+CONEG
Swahili	(91)	SUBJ-TAM-AV NEG-SUBJ-LV
Swahili	(219)	fused AH <*AUX V
Swahili	(294)	SUBJ-AV NEG-SUBJ-LV-*i*$_{CONEG}$
Swahili	(316)	SUBJ-TAM-AV SUBJ-PRTCPL-LV:*a*
Swahili	(362)	*SUBJ-AV INF-LV:*a* > SUBJ-TAM$_{<AV>}$-LV:*a*
Tagoi	(135)	'be' > PROG
Tagoi	(882)	NEG-LV　SUBJ-AV$_{<TA>}$
Tama	(188)-(189)	'say' > light verb stem
Tama	(789)	LV　SUBJ.LightVerb-TA <SAY>
Tama	(790)	LV　SUBJ.LightVerb-TA <DO>
Tama	(829)	SUBJ-LV-SUBJ:LightVerb-TA
		< ?*SUBJ-LV SUBJ-LightVerb-TA
Tamashek	(819)	AV=OBJ　LV:ASP-SUBJ
		mimics AV-OBJ LV-SUBJ structure
Tarok	(726)	SUBJ:PRON$_{<TAM>}$　LV
Temein	(172)	'do'/'make' > INT.FUT
Temein	(866)	SUBJ-AV-FIN　SUBJ-LV:DEP
Temein	(887)	AV　SUBJ-TA-LV-FIN
Tennet	(35)	NEG$_{<AUX>}$ SUBJ-SBJNCTV-LV
Tigrinya	(579)	CONJ-LV　AV:SUBJ
Tima	(895)	NEG-SUBJ-LV ... =CONEG
		< ?*　AV$_{<NEG>}$-SUBJ　LV... =CONEG
Tima	(897)	TA-SUBJ-LV-SUBJ$_{<DEP>}$
		< ?*AV-SUBJ LV-SUBJ$_{<DEP>}$
Tima	(899)	NEG-SUBJ-LV-SUBJ$_{<DEP>}$ ... =CONEG
		< ?*AV$_{<NEG.PST>}$-SUBJ LV-SUBJ$_{<DEP>}$ ... =CONEG
Tima	(901)	TA-SUBJ-LV-SUBJ$_{<DEP>}$-OBJ
		< ?*AV-SUBJ　LV-SUBJ$_{<DEP>}$-OBJ
Tira	(145)	'be' > dummy AV
Tira	(849)	SUBJ-AV　INF-LV

Tira	(864)	Subj[ProN] SUBJ.CLS-AV Subj.[ProN] SUBJ.CLS-LV
Tiv	(719)	SUBJ:AV$_{TAM}$ LV
Tofa	(212)	AH CCC SS
Tonga	(62)	SUBJ-TA-AV INF-LV:*a*
Tonga	(287)	SUBJ-TAM-LV:*a* ~ SUBJ-TAM SUBJ-LV:*a* ~ SUBJ-AV INF-LV:*a*
Tonga	(387)	NEG-SUBJ-LV-*i*$_{CONEG}$ < ??
Tsongo	(386)	NEG-SUBJ-LV-*i*$_{CONEG}$ < ??
Tsotso	(266)	INF-LV-*a* SUBJ:AV
Tumale	(136)	'be' > PROG
Tumale	(883)	NEG-LV SUBJ-AV$_{TA}$
Tumale	(905)	SUBJ[:TA]-LV-TA < ?*SUBJ[:TA]-LV AV
Tumbuka	(279)	SUBJ-TAM-AV SUBJ-LV-*e*
Turkana	(487)	SUBJ-AV SUBJ$_{DEP}$-LV
Turkana	(508)	AV$_{*3-[TA]-AV}$ SUBJ-TA-LV
Tuvan	(27)	AH+DEP$_{i/ii}$
Twi	(44)	2x NEG
Twi	(210)	AH < CCC SEQ
Tyurama	(142)	'be' > PROG
Tyurama	(676)	SUBJ AV SUBJ LV
Umbundu	(10)	PREP+INF/AV variation
Umbundu	(160)	'sit' > PRG 'with'
Umbundu	(268)	SUBJ-TAM-AV PREP INF-LV-*a*
Venda	(22)	fused AH+CONEG A-V
Venda	(55)	2x + DEP
Venda	(224)	fused AH <* AUX V +INF
Venda	(276)	SUBJ-TAM-AV SUBJ-LV-*a*
Venda	(282)	SUBJ-AV SUBJ-DEP-LV-*a*
Wobé	(724)	SUBJ.PRON:TA LV[-ASP/DEP] < SUBJ-AV<TA> LV[-ASP/DEP]
Wolof	(739)	SUBJ:TAM.AV LV
Xhosa	(15)	AH+INF AUX V
Xhosa	(25)	AH ±INF AUX V
Xhosa	(100)	SUBJ-TAM-AV SUBJ-LV-ASP
Xhosa	(395)	SUBJ-TAM-AV SUBJ-LV-*ile*$_{PRF}$ ~ SUBJ-TAM-SUBJ-LV-

...

		*ile*PRF
Xhosa/Kafir	(61)	2x
Yambasa	(41)	2x + -*a*
Yambasa	(272)	SUBJ-TAM-AV SUBJ-LV-*a*
Yao	(53)	2x + INF
Yugh	(232)	fused S/2 OBJ/SUBJ
Yulu	(148)	'be' > FUT
Zaghawa	(184)	'say' > light verb stem
Zaghawa	(823)	LV-SUBJ-LightVerb-TA
		< LV SUBJ-LightVerb-TA
Zulu	(221)	fused AH <* AUX V +INF
Zulu	(377)	*SUBJ-AV INF-LV:*a*
		> SUBJ-TAM-INF-LV:*a*

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