Categorial decomposition in HaG

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DELPH-IN Meeting, Paris, 6 July 2010

Genitive marking

- Hausa genitives are marked by
  - either a **bound** form genitive linker *-n* (default) and *-r* (feminine singular)
    Attachment to the "non-genitive" head
  - or a **free** form *na* (default) and *ta* (feminine singular)
    Attachment to the "genitive" dependent
- Multiple functions of the genitive linker
  - Possessives (bound/free)
  - Pre-nominal adjectives (bound)
  - Object-taking gerunds (bound)
  - "Genitive" prepositions (bound)

Outline

1. Major functions of the Hausa genitive linker
   - Possessives
   - Strong verbal nouns
   - Prenominal adjectives
2. Arguments against cliticisation
3. Analysis
   - Strong verbal nouns
   - Possessives
   - Adjectives

Possessives I

- Possessive can be expressed by either free or bound markers
- Free genitive markers are realised on the dependent possessor NP
- Bound genitive marked are realised on the head noun (possessum)
- Both markers show agreement with the head noun

(1) a. rȉgā **ta** Audù
gown.f L.f Audu.m
'Audu's gown'

b. rȉga-**r** Audù
gown.f-L.f Audu.m
'Audu's gown'

(2) a. littāfȉ **na** Kànde
book.m L.m Kande.f
'Kande's book

b. littāfì-**n** Kànde
book.m-L.m Kande.f
'Kande's book'

Possessives II

- Bound marker requires strict adjacency of head and possessor
- Possessor marked with *na/ta* can be separated from head noun

(3) a. littāfì-**n** Audù bisà Sarkī
book.m-L.m Audu about Emir
'Audu's book about the Emir'

b. * littāfì-**n** bisà Sarkī Audù
book.m-L.m about Emir Audu

(4) a. littāfì **na** Audù bisà Sarkī
book.m L.m Audu about Emir
'Audu's book about the Emir'

b. littāfì̀ bisà Sarkī **na** Audù
book.m about Emir L.m Audu
'Audu's book about the Emir'

Possessives III

- Free genitive marker can feature in headless possessive constructions
- Bound genitive marker cannot

(5) a. Nā karàntà **na** Kànde
1.sg.completive read L.m Kànde
'I read Kande's.'

b. * Nā karàntà **-n** Kànde
1.sg.completive read L.m Kànde

Strong verbal nouns I

- Gerundive forms are used in the continuative aspect
- Non-gerundive forms are used for all other Tense/Aspect/Mood categories
- Gerunds are subdivided into weak (verb-like) and strong (nominal) verbal nouns
- Presence of an in situ direct object obligatorily requires the presence of a linker on strong verbal nouns

(6) a. Yā ɗinkà rīgā.
3.m.sg.completive sew gown
'He has sewn the gown.'

b. Yanà ɗinkì**-n** rīgā.
3.m.sg.continuative sew gown
'He is/was sewing the gown.'

Strong verbal nouns II

- Pronominal objects of verbs and weak verbal nouns are taken from the direct object paradigm (polar tone)
- Pronominal objects of strong verbal nouns use the genitive pronoun set (low tone)

(7) a. Yā tàmbàyē -shì / *-sà .
3.m.sg.completive ask -him.acc -him.gen
'He asked him.'

b. Yanà tàmbayà-r -sà / *-shi.
3.m.sg.continuative ask.f-L.f -him.gen -him.acc
'He is/was asking him.'

Strong verbal nouns III

- Presence of the linker restricted to in situ objects
- No genitive marking for fronted (extracted) objects
- Marking conditions parallel to length alternations on verbs

(8) a. Yanà ɗinkì**-n** rīgā.
3.m.s.cont sew gown
'He is sewing the gown.'

b. Rīgā cè yakè ɗinkì.
gown FOC 3.m.s.cont sew
'The gown he is sewing.'

(9) a. Yā ɗinkà rīgā
3.s.m.cmpl sew gown
'He has sewn the gown.'

b. Rīgā cè ya ɗinkà
gown FOC 3.s.m.cmpl sew
'The gown he has sewn.'

Prenominal adjectives I

- Hausa attributive "adjectives" can be realised pre- and post-nominally
- Attributive adjectives do not have inherent gender, but agree in gender and number
- Pre-nominal adjectives obligatorily take a linker
- Post-nominal adjectives do not

(10) a. rìgā baƙā
gown.f black.f
'black gown'

b. baƙa-r rìgā
black.f-L.f gown.f
'black gown'

(11) a. gidā baƙī
house.m black.m
'black house'

b. baƙi-n gidā
black.m-L.m house.m
'black house'

Prenominal adjectives II

- Pre-nominal adjectives can only be formed using the *bound* linker i.e., use of the free linker is illicit

(12) a. * baƙā ta rìgā
black.f L.f gown.f
'black gown'

b. # baƙī na gidā
black.m L.m house.m
'black house'

Arguments against cliticisation

- Tuller (1986) suggests that the bound linker is a clitic variant of the free linker
- Several arguments suggest that a (surface) cliticisation approach is unmaintainable
  - Free linker is illicit in a range of constructions where the bound linker is required (strong-verbal nouns, pre-nominal adjectives)

(13) a. Yanà ɗinkì -n/*na rìgā
1.s.cont sew L.m gown
'He is sewing the gown.'

b. ƙàrama -r/*ta mōtà
small L.f car
'small car'

  - Bound and free linker observe different "agreement" constraints
  - Bound pronominal possessives cannot be derived from free ones by fully regular phonological processes

Different morphological constraints I

- Choice of free form linker (*na* vs. *ta*) solely depends on morphosyntactic agreement features
- Bound feminine singular *-r* is further restricted to /a/-final feminine singular hosts

⇒ Hypothesised underlying free form *na* cannot be licensed by the constraints of the grammar

(14) a. màtā ta Bellò
mother L.f Bello
'Bello's mother'

b. màta-r Bellò
mother-L.f Bello
'Bello's mother'

(15) a. gwamnatì ta Ingilà
government L.f England
'England's government'

b. gwamnatìn Ingilà
government-L England
'England's government'

Different morphological constraints II

- Constraints on the distribution of the bound linker are not entirely phonological:
  /a/-final masculine hosts still take the linker *-n*, typical for masculine hosts

(16) a. màtā ta Bellò
mother L.f Bello
'Bello's mother'

b. màta-r Bellò
mother-L.f Bello
'Bello's mother'

(17) a. ɓērā na Audù
rat L.m Audu
'Audu's rat'

b. ɓēra-n Audù
rat-L.m Audu
'Audu's rat'

Phonology I

- Bound form of genitive pronouns cannot be derived from free form by regular phonological rules of the language
  e.g. *nāmù* ↦ *-nmù*
- Exceptional shape of first singular forms suggest that reduction cannot be related to surface-phonological rules

Paradigm of free possessive pronouns

	masc/plural		fem. singular	
	sg	pl	sg	pl
1	nȁ̄wā	nāmù	tȁ̄wā	tāmù
2m	nākà	nākù	tākà	tākù
2f	nākì		tākì	
3m	nāsà/nāshì	nāsù	tāsà	tāsù
3f	nātà		tātà	

Paradigm of bound genitive pronouns

	masc/plural		fem. singular	
	sg	pl	sg	pl
1	-nā	-nmù	-tā	-rmù
2m	-nkà	-nkù	-rkà	-rkù
2f	-nkì		-rki	
3m	-nsà/-nshì	-nsù	-rsà/-rshì	-rsù
3f	-ntà		-rsà	

Phonology II

- First person genitive pronouns trigger exceptional vowel lengthening on the host

(18) a. àku
parrot
'parrot'

b. * àkū
parrot

(19) a. àkū-nā
parrot-my
'my parrot'

b. * àku-nā
parrot-my

Analysis

- Genitive linker involves semantically heterogeneous constructions
  - argument-taking heads (strong verbal nouns)
  - modifiers (pre-nominal adjectives)
  - heads taking nominal modifiers
- Distribution of genitive linker in extraction contexts identical to direct object marking of verbs (Crysmann, 2005)
- Unified account of Hausa genitive constructions
  - assumes a divergence between the syntactic and semantic heads
  - treats the genitive marker as the nominal exponent of direct object marking

Direct object marking I

- Distinguish lexical signs (*word*) with respect to direct object marking
- Direct object marking constrained to words with a structural direct object on their COMPS valence list
- Constraint generalises across syntactic categories (e.g., nouns and verbs)

d-o-m-word →

$$\left[\begin{array}{ll} \textit{word} & \\ \textsc{ss} & \boxed{1} \\ \textsc{morph} & \left[\begin{array}{ll} \textit{lexeme} & \\ \textsc{ss} & \boxed{1}\left[\textsc{l}\,|\,\textsc{cat}\,|\,\textsc{comps}\left\langle\left[\textsc{l}\,|\,\textsc{cat}\,|\,\textsc{hd}\,|\,\textsc{case} \quad \textit{struc}\right], \ldots\right\rangle\right] \end{array}\right] \end{array}\right]$$

Direct object marking II

- Inflectional lexeme-to-word rule introduces exponent of direct object marking
- Choice of exponent is category-specific

$$\left[\begin{array}{ll} \textit{d-o-m-word} & \\ \text{PH} & \boxed{0} \oplus \langle \text{r} \rangle \\ \text{MORPH} & \left[\begin{array}{ll} \textit{lexeme} & \\ \text{PH} & \boxed{0}\langle \ldots,\text{a} \rangle \\ \text{SS} \mid \text{L} \mid \text{CAT} \mid \text{HD} & \left[\begin{array}{ll} \textit{noun} & \\ \text{AGR} & \left[\begin{array}{ll} \text{NUM} & \textit{sg} \\ \text{GEND} & \textit{fem} \end{array}\right] \end{array}\right] \end{array}\right] \end{array}\right]$$

Direct object marking III

- Absence of direct object marking restricted to words without a direct object on their COMPS list

$$\left[\begin{array}{ll} \textit{plain-word} & \\ \text{PH} & \boxed{0} \\ \text{MORPH} & \left[\begin{array}{ll} \textit{lexeme} & \\ \text{PH} & \boxed{0} \\ \text{SS} \mid \text{L} \mid \text{CAT} \mid \text{COMPS} & \neg \left\langle \left[\text{L} \mid \text{CAT} \mid \text{HD} \mid \text{CASE} \quad \textit{struc}\right], \ldots \right\rangle \end{array}\right] \end{array}\right]$$

Direct object marking IV

- Genitive pronouns are the morphological realisation of a noun's direct object valence

$$\left[\begin{array}{ll}
\textit{word} & \\
\text{PH} & \boxed{p} \oplus \langle \text{kì} \rangle \\
\text{C-CONT} & \boxed{c}\left[\begin{array}{ll}
\text{RELS} & \left\langle \left[\begin{array}{ll} \text{PRED} & \text{"pron-rel"} \\ \text{LBL} & \boxed{l} \\ \text{ARG0} & \boxed{i}\left[\begin{array}{ll} \text{PER} & 2 \\ \text{NUM} & \text{sg} \\ \text{GEND} & \text{fem} \end{array}\right] \end{array}\right], \left[\begin{array}{ll} \text{PRED} & \text{"quant-rel"} \\ \text{ARG0} & \boxed{i} \\ \text{RSTR} & \boxed{h} \end{array}\right] \right\rangle \\
\text{HCONS} & \left\langle \textit{qeq} \;\&\; \left[\begin{array}{ll} \text{HARG} & \boxed{h} \\ \text{LARG} & \boxed{l} \end{array}\right] \right\rangle
\end{array}\right] \\
\text{SS} & \left[\text{L} \mid \text{CAT}\left[\begin{array}{ll} \text{HEAD} & \text{noun} \\ \text{COMPS} & \boxed{r} \end{array}\right]\right] \\
\text{MORPH} & \left[\begin{array}{ll}
\textit{word} & \\
\text{PH} & \boxed{p} \\
\text{SS} & \left[\text{L} \mid \text{CAT} \mid \text{COMPS} \left\langle \left[\text{L} \mid \text{CONT} \boxed{c}\right] \right\rangle \oplus \boxed{r}\right]
\end{array}\right]
\end{array}\right]$$

Strong verbal nouns I

- Strong verbal nouns are derived by a conversion rule
- Basic category change accounts for exponence of direct object marking and pronominal affixes
- Semantics and valency are preserved

$$\begin{bmatrix} \textit{lexeme} \\ \text{SS} \begin{bmatrix} \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HD} & \textit{noun} \\ \text{SUBJ} & \boxed{1} \\ \text{COMPS} & \boxed{2} \end{bmatrix} \\ \text{CONT} \quad \boxed{3} \end{bmatrix} \\ \text{NLOC} \quad \boxed{4} \end{bmatrix} \\ \text{MORPH} \begin{bmatrix} \textit{lexeme} \\ \text{SS} \begin{bmatrix} \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HD} & \textit{verb} \\ \text{SUBJ} & \boxed{1} \\ \text{COMPS} & \boxed{2} \end{bmatrix} \\ \text{CONT} \quad \boxed{3} \end{bmatrix} \\ \text{NLOC} \quad \boxed{4} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Strong verbal nouns II

- Complement extraction performed by trace-less lexical rule approach (Pollard and Sag, 1994)
- Removal of valency from COMPS accounts for the absence of direct object marking

$$\left[\begin{array}{l} \textit{lexeme} \\ \text{SS} \left[\begin{array}{ll} \text{LOC} & \left[\begin{array}{ll} \text{CAT} \mid \text{COMPS} & \boxed{r} \\ \text{CONT} \mid \text{HOOK} \mid \text{INDEX} & \textit{event} \end{array}\right] \\ \text{NLOC} & \left[\text{SLASH} \quad \left\{\boxed{l}\right\} \cup \boxed{s}\right] \end{array}\right] \\ \text{MORPH} \left[\begin{array}{l} \textit{lexeme} \\ \text{SS} \left[\begin{array}{ll} \text{LOC} & \left[\text{CAT} \mid \text{COMPS} \quad \left\langle \left[\begin{array}{ll} \text{LOC} & \boxed{l} \\ \text{NLOC} \mid \text{SLASH} & \left\{\boxed{l}\right\} \end{array}\right] \right\rangle \bigcirc \boxed{r}\right] \\ \text{NLOC} & \left[\text{SLASH} \quad \boxed{s}\right] \end{array}\right] \end{array}\right] \end{array}\right]$$

Possessives

- Bound linker is not an exponent of possessive marking
- Possessive semantics are introduced by the rule that adds a valency for the possessor argument

$$\begin{bmatrix} \textit{lexeme} \\ \text{C-CONT} & \begin{bmatrix} \text{RELS} & \left\langle \begin{bmatrix} \text{PRED} & \text{"poss-rel"} \\ \text{LBL} & \boxed{l} \\ \text{ARG1} & \boxed{1} \\ \text{ARG2} & \boxed{2} \end{bmatrix} \right\rangle \\ \text{HCONS} & \langle\rangle \end{bmatrix} \\ \text{SS} & \begin{bmatrix} \text{L} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} \text{HD} & \boxed{0}\ \text{noun} \\ \text{COMPS} & \left\langle \left[\text{L} \mid \text{CONT} \mid \text{HOOK} \mid \text{INDEX}\ \boxed{2} \right] \right\rangle \end{bmatrix} \\ \text{CONT} \mid \text{HOOK} & \begin{bmatrix} \text{LTOP} & \boxed{l} \\ \text{INDEX} & \boxed{1} \end{bmatrix} \end{bmatrix} \end{bmatrix} \\ \text{MORPH} & \begin{bmatrix} \textit{lexeme} \\ \text{SS} \mid \text{L} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} \text{HD} & \boxed{0} \\ \text{COMPS} & \langle\rangle \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Adjectives I

- Adjectives are adjuncts of basic category noun
- Modifier semantics are specified lexically (Copestake et al., 2005)

$$\left[\begin{array}{l}\text{SS} \mid \text{L} \left[\begin{array}{l}\text{CAT} \left[\begin{array}{l}\text{HD} \left[\begin{array}{ll}noun & \\ \text{AGR} & \boxed{i} \\ \text{MOD} \left\langle \left[\begin{array}{l}\text{L} \left[\begin{array}{ll}\text{CAT} & \left[\begin{array}{ll}\text{HD} & \left[\begin{array}{ll}noun & \\ \text{AGR} & \boxed{i}\end{array}\right] \\ \text{COMPS} & \langle\rangle\end{array}\right] \\ \text{CONT} \mid \text{HOOK} & \left[\begin{array}{ll}\text{INDEX} & \boxed{i} \\ \text{LTOP} & \boxed{l}\end{array}\right]\end{array}\right]\end{array}\right] \right\rangle\end{array}\right] \\ \text{COMPS} \langle\rangle\end{array}\right] \\ \text{CONT} \left[\begin{array}{ll}\text{HOOK} & \left[\begin{array}{ll}\text{INDEX} & \boxed{e} \\ \text{LTOP} & \boxed{l}\end{array}\right] \\ \text{RELS} \left\langle \left[\begin{array}{ll}\text{PRED} & \text{"}small\text{"} \\ \text{LBL} & \boxed{l} \\ \text{ARG0} & \boxed{e}\ event \\ \text{ARG1} & \boxed{i}\ index\end{array}\right] \right\rangle\end{array}\right]\end{array}\right]\end{array}\right]$$

Adjectives II

- Selectional requirement shifted from the feature MOD into COMPS
- Reversal of head-argument relation aligns well with the general head-initial word order (head-complement, head-adjunct)
- Modifier semantics remain unaffected

$$\left[\begin{array}{l} \textit{lexeme} \\ \text{SS}\,|\,\text{L}\left[\begin{array}{ll} \text{CAT} & \left[\begin{array}{ll} \text{HD} & \left[\begin{array}{ll} \textit{noun} & \\ \text{AGR} & \boxed{i} \\ \text{MOD} & \langle\rangle \end{array}\right] \\ \text{COMPS} & \left\langle \boxed{m} \right\rangle \end{array}\right] \\ \text{CONT} & \boxed{c} \end{array}\right] \\ \text{MORPH}\left[\begin{array}{l} \textit{word} \\ \text{SS}\,|\,\text{L}\left[\begin{array}{ll} \text{CAT} & \left[\begin{array}{ll} \text{HD} & \left[\begin{array}{ll} \textit{noun} & \\ \text{AGR} & \boxed{i} \\ \text{MOD} & \left\langle \boxed{m} \right\rangle \end{array}\right] \\ \text{COMPS} & \langle\rangle \end{array}\right] \\ \text{CONT} & \boxed{c} \end{array}\right] \end{array}\right] \end{array}\right]$$

Conclusion

- Unified account of Hausa genitives builds on systematic distinction between syntactic and semantic heads
- Present analysis of the genitive linker connects the syntax of nominal complementation to a well-established property of the language
- Reversal of head-argument relations brings pre-nominal adjectives in line with head-initial word order in Hausa
- Decomposition approach extended to “genitive prepositions” (Crysmann, 2010)

- Shi ke nan, ƙurunƙus.

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