Dogon relative clauses

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This piece presents Dogon relative clauses, including (at the end) double-headed relatives.

Dogon has **internally-headed relative clauses** (IHRCs), or more accuratively **circumnominal** relatives. That is, the core of the head NP appears overtly within the relative clause rather than as an external head at the left or right boundary of the relative clause as in English. However, the internal head is not a complete NP (DP). In particular, it does not allow determiners (definite, demonstrative), the 'all' quantifier, the free plural marker, or discourse-functional elements ('as for', 'even', 'only'). All of these elements follow the relative-clause verb. Dogon IHRCs are therefore fundamentally different from IHRCs in other languages where the internal head NP is determined.

This already suggests that the "verb" in a Dogon IHRC is an adjective-like modifier within the higher NP. Indeed, in several Dogon languages the "verb" is morphologically participialized. That is, instead of the usual pronominal-subject suffixes that occur in main clauses (run-Pfv-1Sg 'I ran'), the **verb-participle** ("Ppl") has a **nominal-adjectival** suffix agreeing with the animacy/humanness and number (but not person) of the head NP. In nonsubject relatives, if the subject is a pronominal it must therefore be expressed by preverbal proclitics, since the usual verb-suffix position has been requisitioned by agreement with the head NP.

Furthermore, the internal head is subject to **tonosyntactic** control (tone-dropping), ostensibly controlled by the verb-participle. However, the verb-participle need not be adjacent to the head. This is anomalous, since other tonosyntactic controllers are directly adjacent to their target domains. This can be explained by assuming movement.

In this model, the overall NP (DP) initially has the structure (1).

(1) Poss N Adj Num **RelCl** Det 'all'/Pl DiscFunct

The relative clause (RelCl) contains a NP coindexed with the (entire) higher NP. Tonosyntactic processes apply to the string in (1). Preposed possessors, adjectives, relative clauses, and (some) determiners control tone overlays on the noun (and on any intervening words). What these controllers have in common is that they restrict reference by dividing a set of potential referent individuals (e.g. 'dog') into excluded and (possibly) included referents. A relative clause, like other postnominal reference restrictors, controls tone-dropping to {L} on the noun and intervening elements. For example, N Num by itself undergoes no tonal modifications, but N Num RelCl becomes [N Num]^{L} RelCl. (See the separate piece on tonosyntax of NP.)

After tonosyntax, the portion of the higher NP to the left of the relative clause, i.e. maximally Poss N Adj Num**, is attracted into the relativization site** (the position of the coindexed relative-clause internal NP). In other words, the internal head occurs in the linear position of the "downstairs" copy, but it shows the tonosyntactic form of the original "upstairs" string to the left of the relative clause.

This model accounts for the tone-dropping, and also for the otherwise inexplicable apparent **bifurcation** of the head NP into an incomplete (undetermined) internal head and a postparticipial **coda** (determiners, 'all', free plural marker, discourse-function markers), separated from each other not only from the verb-participle but also, quite often, by other arguments and adjuncts within the relative clause.

By expressing the core of the head NP internally, Dogon IHRCs make it easy for listeners to identify the grammatical function (subject, object, etc.) of the head within the relative clause. Furthermore, tone-dropping along with the absence of coda elements such as determiners make it easy to determine which of two or more NPs within the relative clause is the head NP. Tonosyntax and IHRCs make a good team.

examples from Jamsay

From the transitive main clause in (2a), one can derive relative constructions (i.e. higher NPs containing a relative clause) like the subject relative (2b), the object relative (2c), and the adverbial relative (2d). 'Fulbe' (singular Pullo) denotes a major ethnic group of cattle herders.

(2) a. *[púlɔ́-m kù^{n}] [nàŋá fú:] nànáá jìnè-ba*
[Fulbe-HumPl Def] [cow all] chase hold.Perf-3PlSubj
'the Fulbe drove ahead and maintained control of all (the) cows'. [Jamsay]

b. *pùlɔ́*^{L} *[nàŋá fú:] nànáá jínè-m kù^{n}*
Fulbe^{L} [cow all] chase hold.Perf.Ppl-HumPl Def
'the Fulbe who drove ahead and maintained control of all (the) cows'
[Jamsay]

c. *[púlɔ́-m kù^{n}] nàŋà*^{L} *nànáá jínè-∅ fú:*
[Fulbe-HumPl Def] **cow**^{L} chase hold.Perf.Ppl-Nonhum all
'all (the) cows that the Fulbe drove ahead and maintained control of'
[Jamsay]

d. *[púlɔ̀-m kùⁿ] nìŋìrⁿèᴸ [nàŋá fú:] nàná jínè-∅*
[Fulbe-HumPl Def] **day**ᴸ [cow all] chase hold.Perf.Ppl-Nonhum
'the day when the Fulbe drove ahead and maintained control of all (the) cows' [Jamsay]

The main clause (2a) has a 3Pl subject suffix on the verb, agreeing with 'Fulbe' Determiners ('the') and non-numeral quantifiers ('all') are part of the argument NPs ('Fulbe', 'cow').

In each relative clause, the internal head is **tone-dropped**: 'Fulbe' in (2b), 'cow' in (2c), and 'day' in (2d). In addition, determiners ('the') and non-numeral quantifiers ('all') that are associated with the head appear **postparticipially**: definite in (2b), 'all' in (2c). The perfective participle *jínè* has a {HL} tone overlay, which is regular in Jamsay perfective (positive) relative clauses. The participle ends with one of the same suffixes that occur on simple nouns (human singular, human plural, or nonhuman), **agreeing with the head noun**: human plural in (2b), nonhuman in (2c-d).

The examples in (2) involve a nonpronominal subject ('the Fulbe'). If the subject were pronominal, say 3Pl, we would get a main clause like (3a) and an object relative like (3b), where the the 3Pl subject suffix on the verb has been replaced by a **preverbal proclitic subject pronoun**.

(3) a. *[nàŋá fú:] nàná jìnè-bà*
[cow all] chase hold.Perf-**3PlSubj**
'they drove ahead and maintained control of all (the) cows'. [Jamsay]

b. *nàŋàᴸ nàná bè jínè-∅ fú:*
cowᴸ chase **3PlSubj** hold.Perf.Ppl-Nonhum all
'all (the) cows that they drove ahead and maintained control of' [Jamsay]

inflectional marking in perfective positive verb-participles

Dogon main-clause verbs include inflectional markers (perfectivity, negation, etc.), either by suffixes or by auxiliary verbs. In general, the categories and suffixal or auxiliary-verb forms are carried over into corresponding relative-clause verb-participles. Therefore, in addition to the perfective positive participles illustrated above, Jamsay has verb-participles for perfective negative, imperfective positive, imperfective negative, and the various additional inflectional categories (stative, progressive, experiential perfect, etc.).

The inflectional category that most often has specialized verb-participle forms is perfective positive. In Jamsay, main-clause verbs mark this category with a suffix *(-tì-, -yè-, -sà-*). If the verb is preceded by other words within the clause, especially if one of them is focused, the verb frequently omits the suffix and takes {L}-toned form, as in

jìnè- in (3a). Jamsay perfective positive verb-participles almost always omit the perfective suffix, but take a special {HL} tone overlay, as in *jínè-* in (3b).

In some Dogon languages, one of the main-clause perfective positive suffixes is used systematically in verb-participles. Jamsay perfective variant *-sà-* is related to the stative quasi-verb *sà* 'have'. Several other eastern Dogon languages have a similar main-clause perfective form (*-sà-*, *-sò-*, etc.), often with a resultative nuance. This suffixal variant is favored in verb-participles in some of these languages, such as Toro Tegu. In some additional languages, there is no such main-clause variant, but perfective positive verb-participles have a special suffix or particle that likely originated as a participle of the 'have' perfective. An example is Togo Kan *sá^{n}*, which occurs immediately after the verb in perfective subject relatives.

pronominal-subject marking in main and relative clauses

Dogon languages differ in the way pronominal subjects are expressed in main clauses. Furthermore, many of the languages (especially in eastern Dogon) express them differently in main and relative clauses. The situation is summarized in (4). Only nonsubject relatives with pronominal subjects are relevant (there are no subject pronominals in subject relatives). Notation: "VB-__" means verbal suffix, "VB=__" means postverbal enclitic, "__=VB" means preverbal proclitic, and "__ …VB" means clause-initial independent pronoun. 3rd person may be distinct from 1st/2nd persons. 3Sg is often zero in suffixing languages.

(4)

	main clause		relative clause	
	1st/2nd	3rd	1st/2nd	3rd
eastern				
Toro Tegu	__ …VB	VB=__	__ …VB	
Bankan Tey	VB-__		__=VB	
Ben Tey	VB-__		__=VB	
Nanga	VB-__		__=VB	
Jamsay				
Impf Pos	VB-__	VB=__	__=VB	
other	VB-__		__=VB	
Togo Kan [1]	__ …VB		__=VB	
Tommo So	VB-__		__=VB	
Donno So	VB-__		__=VB	
Yorno So	VB-__		__=VB	
Tomo Kan [2]				
Impf Pos	__…VB	VB=__	__=VB	
other	__…VB	VB-__	__=VB	
northwestern				
Najamba	VB-__		__=VB [3]	
Tiranige [4]	VB-__ (Sg)	VB-__	__=VB	
	__=VB (Pl)			
Dogul Dom	VB-__		??	
Tebul Ure	VB-__		__=VB	
Yanda Dom	VB-__		__=VB	
southwestern				
Bunoge	__=VB	VB-__	__=VB	tonal
Mombo	__=VB	VB-__	??	??
Ampari	__=VB	VB-__	??	??
Penange	__=VB	VB-__	__=VB [5]	

[1] Togo Kan main clauses have unreliable and very limited (singular versus plural number) verb-suffix marking, so clause-initial subject pronouns are common.

[2] Tomo Kan has minimal verb-suffix marking (3Pl versus everything else). Clause-initial subject pronouns are regular.

[3] Proclitic position is usual in Najamba relatives, but there are some textual examples with the subject pronoun preceding the head NP.

[4] Tiranige main clauses have suffixes for 1Sg and 2Sg (as well as 3Pl), but proclitics for 1Pl and 2Pl.

[5] Penange has a suffix *-na* for 3Sg subject in relatives, otherwise __=VB including 3Pl.

The dominant pattern is verb suffixes in main clauses versus preverbal proclitics in relatives. Aubject pronouns occur initially in main clauses in Togo Kan, and for 1st/2nd persons only in Toro Tegu and Tomo Kan. Toro Tegu is unusual in having clause-initial rather than proclitic subject pronouns in relatives. The southwestern languages have 1st/2nd person proclitics in main as well as relative clauses. Tiranige (northwestern) is transitional, with 1Pl and 2Pl proclitics but 1Sg and 2Sg suffixes in main clauses.

head NPs containing a prenominal possessor

Internal head NPs are maximally Poss-N-Adj-Num. Let us consider just Poss-N as relative head, hence schematically Poss-N-RelCl, realized after movement as [RelCl … [Poss N] … Ppl …]. Since the possessor and the relative clause are both tonosyntactic controllers, the noun may be caught in the crossfire of two would-be controllers. For example, if the possessor-controlled overlay is {HL} and the RelCl-controlled overlay is {L}, the noun will appear as ^{HL}N or as N^{L} depending on which controller "wins." In the case where the possessor "wins," we have what amounts to a **tonosyntactic island** that cannot be further modified by a higher controller.

In Jamsay, the relative clause "wins" so there is no need to recognize islands. In this language, only inalienable possessors (for kin terms) can control tone overlays on nouns. (5a) shows an independent NP, and (5b) shows what happens when the same NP functions as internal relative head.

(5) a. *séydù* ^{HL}*dê:*
S ^{HL}father
'Seydou's father' [Jamsay]

b. *[sèydù* *dè:]*^{L} *yérè-n* *(kù^{n})*
[S father]^{L} come.Perf.Ppl-HumSg (Def)
'Seydou's father who came' [Jamsay]

In (5a), the possessor controls {HL} on the noun. However, in (5b) this is overridden, and the possessor and the noun constitute the target domain for the {L} overlay controlled by the relative clause.

Jamsay is atypical in this respect. More typical is Ben Tey, where the possessor fixes the {HL} overlay on the possessed noun, both in isolation (6a) and as relative head (6b).

(6) a. *ú* ^{HL}*[nâ:* *bàr^{n}à* *kùròy]* *bû:*
2SgPoss ^{HL}[cow.AnPl red.Pl six] Def.AnPl
'your-Sg six brown cows' [Ben Tey]

b. *ú* HL*[nâ:* *bàrⁿà* *kùròy]*
2SgPoss HL[**cow.AnPl** red.Pl six]
í *éwé-mà* *bû:*
1SgSubj buy.Perf-Ppl.AnPl Def.AnPl
'your-Sg six brown cows that I bought' [Ben Tey]

Examples from other languages following the Ben Tey pattern (6b) rather than the Jamsay pattern (5b) are in (7).

(7) a. *[ú* HL*ɛ́rⁿà]* *(kà:)* *bùsú* *dà* *ŋ́*
[2SgP HLgoat] (Rel) animal.die be Rel
'your-Sg goat that died' [Toro Tegu]

b. *[ú* HL*dérè]* *bàmàkɔ̂:=∅* *bù-mì*L *né*
[2SgP HLelder.sibling] B=in be-Ppl.StatL Def.AnSg
'your-Sg elder sibling who is in Bamako' [Nanga]

In languages like Donno So where both the possessor-controlled and relative-controlled overlays are {L}, it may be indeterminate which controller has "won."

head NPs containing a postposed pronominal possessor

All nonpronominal possessors are prenominal. In some Dogon languages, a pronominal possessor may be **postposed**, typically following the N-Adj-Num sequence. In the relevant languages, this is most typical of alienable possession (as opposed to kin terms).

Postposed pronominal possessors range from transparently appositional with a segmentable animacy classifier, as in [dog [my critter]] = 'my dog' or [stick [my thing]] = 'my stick', to unsegmentable, schematically [dog my] and [stick my]. An intermediate stage has a single abstract possessive marker: [dog [my possession]] and [stick [my possession]]. The historical trend has been from transparently appositional toward abstract or unsegmentable. However, even in languages which have gone in this direction still avoid tonosyntactic interaction between the noun and the following possessor, which made more sense back when the construction was clearly appositional.

The ability of the relative clause to control tone-dropping on pronominally possessed internal head NPs is variable, as we might expect from the ambiguous appositional (?) structure of the latter. Consider 'your goat that fell', where 'your goat' is expressed as 'goat [your critter/possession]'. In some languages, like Donno So, this entire head NP is tone-dropped (8b), showing that the relative-controlled overlay encounters no roadblocks.

(8) a. *ènɛ́* *ù-mɔ̀*
goat 2Sg-Poss
'your-Sg goat' [Donno So]

b. *[ènɛ̀* *ù-mɔ̀]*^{L} *nùmb-ɛ́-∅=gɔ̀*
[goat 2Sg-Poss]^{L} fall-Perf-Ppl=Def
'your-Sg goat that fell' [Donno So]

In other languages, like Nanga, the overlay is limited to the appositional classifier, leaving the juxtaposed noun unaffected (9b). In effect, the (appositional) possessor functions as a buffer, protecting the main noun from tonosyntactic control by the relative.

(9) a. *ńdô* *[ú* ^{HL}*gô]*
house [2SgPoss ^{HL}Poss.InanSg]
'your-Sg house' [Nanga]

b. *[ńdô* *[ú* *gɔ̀*^{L}*]]* *yɛ̀gɛ̀-sɛ̀*^{L} *gú*
[house [2SgPoss Poss.InanSg^{L}]] fall-Ppl.Perf^{L} Def.InanSg
'your house that fell' [Nanga]

In languages where the classifier ('critter', 'thing', 'possession') is already L-toned, we cannot even be sure that it has been tone-dropped.

possessor relatives

Now consider **possessor relatives**, where the head NP is the possessor of another NP, as in 'the man whose house collapsed'. The treatment of the possessor ('man') is predictable since it is the internal head NP. The possessum undergoes tone-dropping controlled by the relative clause, except in the southwestern languages which have no relative-controlled tone overlays. The languages differ, however, in what happens to the possessum ('house'), and some languages make use of more than one strategy.

In one solution, the possessor takes relative-head tonal form, and is followed (usually but not always immediately) by the possessum, which is now supplied with a **resumptive possessor pronoun**, like *kó* in (10).

(10) *bùrɔ̀*^{L} *[kó* *lègú]* *éjù-∅*
pond^{L} [NonhumPoss earth] good-Ppl.Nonhum
'a (seasonal) pond whose clay is good (for pottery)' [Jamsay]

This is the primary strategy in most of the eastern languages: Jamsay, Ben Tey, Donno So, and Yorno So. A variation on it occurs in southwestern languages, with one twist: the resumptive possessor pronoun has fixed 3Sg form even for plural possessors. This may be because plurality is marked on the verb-participle rather than inside the internal head NP in this language.

(11)	*yɔ́*	*ʔòbò-ná*	*tùbbɛ̀-gɛ̀*	*nɔ̀*
	woman	child-3SgPoss	fall.Perf-Pl	Def

'the women whose child fell' [Bunoge]

This is the basis pattern in Bunoge and Penange. Perhaps it is general in the southwestern languages.

Mombo? Ampari?

In another solution, the possessum reverts to **unpossessed form**, freed from the tone overlay normally controlled by the possessor (or its resumptive pronoun). The possessum takes the same tonal form that it has as an ordinary NP in a main clause or in isolation. In (12a), the possessor ('man') has its regular tones, and controls a {L} overlay on the possessed NP ('house'). When the possessor is relativized on (12b), it is tone-dropped by the relative clause, and the possessed NP has its regular (lexical) tones restored.

(12) a.	*ár^{n}â*	^{L}*ǹdò*
	man	^{L}house

'a man's house'

b.	*àr^{n}à*^{L}	*ńdô*	*yɛ̀gɛ̀-sɛ̀*^{L}	*nɛ́*
	man^{L}	house	fall-Ppl.Perf^{L}	Def.AnSg

'the man whose house fell' [Nanga]

This pattern occurs in a few eastern languages (Nanga, Tommo So), but it is especially common in the northwestern languages: Yanda Dom, Najamba, Tiranige, Tebul Ure.

Dogul Dom?

In a third solution, both the possessor and the possessum have tone overlays. This occurs in Togo Kan. Because this language has {L} as both possessor-controlled and relative-controlled tone overlays, there is some ambiguity about the structure. One could argue that the possessor controls {L} on the possessum, then the possessor is tone-dropped by the relative clause. Alternatively, one could claim that the relative clause tone-drops the entire possessed NP.

(13) *nà*^{L} *gìr*^{n}*ì*^{L} *bàgá* *sá*^{n} ^{L}*bàŋà*
person^{L} **house**^{L} fall Perf.Rel] ^{L}owner
'the person whose house fell' [Togo Kan]

The situation for Toro Tegu is complicated by the frequent presence of a relative marker; see below.

postpositional relatives

Relative head NPs that function as complements of postpositions inside the relative clause, e.g. dative 'the person to whom I gave…', is problematic in Dogon languages. The construction is awkward since postpositions are normally added to complete NPs (DPs), whereas the Dogon relativization system allows only a partial NP (maximally Poss-N-Adj-Num, with no determiners or non-numeral quantifiers) to move into the relativization site.

Dogul Dom, Tomo Kan, Mombo, Ampari

Primary postpositions that occur in simple [N Postp] constructions typically include dative, instrumental, primary locative, and purposive. In one relativization strategy, **both the internal head NP and the postposition are tone-dropped**. Jamsay PP (14a) is tone-dropped in the relative in (14b).

(14) a. *bú:dù* *jé*
money Purp
'for money' [Jamsay]

b. *[bù:dù* *jè]* *bíré* *mì* *bírè-Ø* *kù*^{n}
[**money** **for**]^{L} work(n) 1SgS work.Perf-Ppl.Nonhum Def
'the money for which I (have) worked' [Jamsay]

This pattern is regular in Jamsay and Togo Kan.

If all of the primary postpositions in a language are already L-toned, as in Donno So, Yorno So, and Yanda Dom, we cannot be certain that the postposition is included in the target domain for tone-dropping.

Another strategy is to **omit the postposition**. In this case, the internal head NP is treated like a morphologically free NP such as a subject NP. For example, the Ben Tey instrumental PP in (15a) is stripped of its postposition in the relative clause (15b).

(15) a. *béré* *ɲây*^{n}
stick Instr
'with (=by means of) a stick' [Ben Tey]

b. *bèrè*^{L} *ér^{n}é=nì* *í* *súyɔ́-ẁ* *kù*
stick^{L} 3Sg=Acc 1SgS hit.Perf-Ppl.Inan Def
'the stick with which I hit-Past it' [Ben Tey]

Omission of the postposition is regular in Ben Tey, Nanga, Tommo So, Najamba, Tiranige. It is an option in Yanda Dom. A potential disadvantage of this strategy is recoverability of the meaning of the postposition. In practice, since primary (noncomposite) postpositions are generally limited to dative, instrumental, basic locative, and purposive, it is usually not difficult to determine which sense is at hand in examples like (15b). In fact, several Dogon languages have a multi-purpose postposition (e.g. Jamsay *lè*) that ranges across dative, locative, and instrumental readings, so even when the postposition is overt the listener must use inference to determine the sense.

Another strategy is to detach the relativized-on NP from the postposition by using a 3rd-person pronoun or another **resumptive** element. This is attested in Bunoge (16), where the a demonstrative resumes 'house' and functions as immediate complement of the instrumental postposition.

(16) *gúlɔ̀* *tè:ŋgè* *[ʔèmé* *ndò]* *à* *párá-gà* *nɔ̀*
ax **firewood** [**that.Def** Inst] 2SgS cut-Impf Def
'the axe that you-Sg chop wood with' [Bunoge]

Resumption is also attested in Penange (with a 3rd person pronoun).

Composite postpositions of the 'at the back/front/side of X' type are structurally PPs with a simple postposition, usually a primary locative, added to a possessed NP ('X's back/front/side'), so if X is relativized on it may behave as described above for possessor relatives. For example, Najamba breaks the tonosyntactic bond between possessor and possessum when the possessor is relativized on, and does the same when the complement of a composite postposition is relativized on. In (17a), the noun *dû:* 'underside, bottom' is structurally a possessum and is tone-dropped by the possessor. In (17b) the possessor is relativized on, and *dû:* reverts to its lexical tones.

(17) a. *[ptìmɔ̂:* ^{L}*dù:*] *mà*
[tree ^{L}under(n)] in
'under a tree'

b. *tìmɔ̀:*^{L} *[dû:* *mà]* *bé* *b-ɔ̃:* *kó*
tree^{L} [under(n) in] 3PlS be.Perf-Ppl.O Def.InanSg.O
'the tree under which they were' [Najamba]

relative markers

Most Dogon languages have no relative marker (or "relative pronoun") similar to English *that*, *which*, and the like. Tonosyntax combined with internal position of the head NP and with participial morphosyntax allows listeners to parse relative constructions correctly without an overt relative marker.

However, relative markers are attested in two Dogon languages, Ben Tey (especially in formal styles) and Toro Tegu. Prior to the recent expansion of Jamsay, these two languages were (along with Bankan Tey) the most susceptible to Songhay influence (Hombori, Kikara), and the relative markers that immediately follow internal head NPs (Toro Tegu *kà:*, Ben Tey *kà:ⁿ*) have a suspicious resemblance to Songhay relative markers.

Toro Tegu has the most aberrant clause-structure (main clauses and relatives) of any Dogon language. It is the only Dogon language that is not strictly verb-final. Its relative clauses normally have the head NP at the left edge of the clause, though some adverbs like 'yesterday' are attested to its left. So it is not entirely clear that its relatives are internally-headed.

Toro Tegu is also not content with one relative marker (*kà:*) that occurs immediately after the head NP (at or near the left edge). It also has a second relative marker *ŋ́*, at or near the right edge of the relative construction (it can be followed by a definite or plural marker). *ŋ́* is etymologically a demonstrative. (7a) above shows both (optional) *kà:* and *ŋ́*.

In possessor relatives, Toro Tegu uses *kà:* as a kind of (nonpronominal) resumptive possessor. The possessor is tone-dropped by the relative clause. The possessum is also tone-dropped, either by contagion (phrasing as part of the larger NP containing the head) or locally by a possessor-controlled overlay (*kà:* being the possessor for this purpose).

(18)	*nù-ŋ*^{L}	*[kà:*	^{L}*ìlò]*	*lŭw*	*sígú*	*dà*	*ŋ́*
	person-Sg^{L}	**[Rel**	**house**^{L}]	fall	go.down	be	Rel
	'the person whose house fell' [Toro Tegu]						

Toro Tegu *kà:* also functions resumptive in PP relatives. kà: is already L-toned, but tone-dropping applies audibly to the head NP (*sáwà* 'axe') and to instrumental postposition *sí:* in (19). This is most likely attributed to contagion (the entire PP is tone-dropped) though only the complement of the postposition is relativized on semantically.

(19)	*[sàwà*	*[kà:*	*sì:]]*	*gònó*	*í*	*á*	*gàsí-yàrà*	*ŋ́*
	[**axe**	[**Rel**	**Inst**]]	ditch	1PlS	Impf	dig-Impf	Rel
	'the axe with which we (will) dig the ditch' [Toro Tegu]							

subject versus nonsubject relatives

Jamsay and some other languages make no basic structural distinction between subject and nonsubject relatives. In particular, the verb-participle agrees with the head NP and pays no attention to the latter's grammatical function within the relative clause. However, some Dogon languages have different verb-participial forms depending on whether the head NP is the relative-clause subject or some other (nonsubject) category.

The greatest morphological profusion of participles is found in Najamba (northwestern group). Typically a verb has four participial forms for each inflectional (aspect/negation) category. There are two intrinsic agreement classes, O (including animate plural) and E (including animate singular and inanimate plural). O and E participles for a given inflectional category have a tonal distinction between subject-relative and nonsubject-relative forms. For example, the verb 'come' has perfective negative *wò-l-* in main clauses, from which four participles are produced (20).

(20)

	subject	nonsubject
O	*wò-l-ó:*	*wò-l-ò:*
E	*wò-l-é:*	*wò-l-è:*

Another northwestern languages that distinguish subject from nonsubject relatives is Tebul Ure.

double-headed relatives with overt genitive linker

Like "internally-headed," the term "double-headed" relative may refer to multiple constructions in different languages of the world. In Dogon languages, the term refers to the combination of a completely formed relative construction (i.e. a NP containing a relative clause) that is followed by a "possessed" form of a copy of the noun in the internal head NP or by some other conventionalized element. The external head consists of a single noun, marked as possessed either by a possessive linker (Jamsay) or by a possessor-controlled tone overlay (most languages).

The external head is often limited in pratice to a few high-frequency nouns like 'thing', 'person', 'time', 'day', 'place', and 'manner'. An example is (21) from Jamsay, where the overt genitive linker *mà* demonstrates that the construction is possessive.

(21) *[[wàkàtì*^{L} *kì-ká:* *ɲɔ́w^{n}ɔ̀* *[nú:* *lè]* *tɛ́wɛ́*
[[**time**^{L} Rdp-grasshopper damage [millet in] inflict
bɛ̀rɛ̀-gó-Ø] *mà* *wákátì꞉꞉* *fú:]* *kɔ̀:-rɔ́*
be.able-Impf.Neg-Ppl.Nonh] **Gen** **time** all] be.Nonh-Neg
'There is no time when grasshoppers can not inflict damage on the millet.'
[Jamsay]

The possessive structure is made explicit by the Jamsay possessive linker *mà*. The construction may therefore be glossed literally as '[the time when grasshoppers cannot inflict damage]'s time'.

double-headed relatives with tone overlay but no overt genitive linker

Nonpronominal possession in most Dogon languages other than Jamsay is expressed by simple juxtaposition of possessor and possessum (in that order) plus a tone overlay on the possessum (see separate piece on "Dogon tonosyntax of NP"). In addition to ordinary possessed NPs, this pattern also applies to double-headed relatives. An example from Najamba is (22), where the possessor-controlled tone overlay is {L}. In (22) the noun 'thing' is tone-dropped twice, once as internal relative head and once as post-relative possessed noun.

(22) *[[kòŋgò*^{L} *ó* *dùmǎ-ŋgà* *kà]* ^{L}*kòŋgò]* *òndú-∅* *kǒy*
[[**thing**^{L} 2SgS get-Fut.Ppl Top] ^{L}**thing**] not.be-3SgS Emph
'There is definitely nothing that you get.' [Najamba]

grammatical specialization of the external head

In some Dogon languages the construction is developed further and is regularly used in other types of relative clauses, including those with human head NPs. In Togo Kan, for example, the standard external head is *bàŋà* 'owner' for human singular and *nà* for human plural. Their L-tones likely reflect an original possessor-controlled overlay, but the construction has taken on a life of its own and is no longer transparently possessive. Rather, *bàŋà* 'and *nà* have become grammatical markers. A Togo Kan example is (23)

(23) *[[nà*^{L} *yɛ̀rɛ́* *sá^{n}]* ^{L}*bàŋà]=ǹ*
[[**person**^{L} come Perf.Rel] ^{L}**owner**]=Dat
'to the person who came' [Togo Kan]

double-headed relatives as adverbial clauses

Because double-headed relatives tend to have only a few high-frequency nouns as external (possessed) heads, the construction lends itself to more or less grammaticalized usage in adverbial relative clauses (temporal, spatial, and manner), with nouns like ‘time’, ‘day’, ‘year’, ‘place’, and ‘way, manner’ as the doubled head. The full construction should be of the type ‘on the day when you came’, including a postposition corresponding to ‘on’ in the translation, but this postposition is usually omitted as in many other languages (‘the day when you came, …’). An example is (24) from Togo Kan.

(24) *[nìŋìr^{n}ì* ^{L} *ú* ^{H}*yɛ́rɛ́]* ^{L}*nìŋìr^{n}ì*
[**day**^{L} 2SgS ^{H}come.Perf] ^{L}**day**
‘(on) the day when you-Sg came’ [Togo Kan]

In some languages, such adverbial relatives are the only double-headed relatives attested, at least in the current textual corpus. This is the case in Toro Tegu, where the known textual examples are all of this type (25). Toro Tegu is unusual in having a relative marker *ŋ́* (etymologically a demonstrative) at the end of the relative clause proper, but this has no effect on the double-headed construction.

(25) *[này^{n}*^{L} *[ànànsá:rá níŋgèy]* *bɛ́* *zɔ́ŋ-rɔ̀* *ŋ́]* ^{L}*này^{n}*
[**day**^{L} [European beside] 3PlS fight-Impf Rel] ^{L}**day**
‘at the time when they were fighting against the whites, …’ [Toro Tegu]