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No common argument, no extraction, no gap

Attributive clauses in Atong and beyond*

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1. Introduction

The aim of this article is to give a descriptive analysis of noun-modifying clauses in Atong, a Tibeto-Burman language spoken in the South Garo Hills district of Meghalaya state in Northeast India. When I set out to describe the phenomenon of noun-modifying clauses in Atong, I felt that neither the general typological literature (Keenan & Comrie 1977; Comrie 1981; Keenan 1985; Lehmann 1984; Andrews 2007) nor the Tibeto-Burman literature on this subject (Matisoff 1972; DeLancey 1986, 1999; Noonan 1997; Bickel 1999; Coupe 2007; Genetti 1992, 2008) provided a perfect framework for its analysis. In both the typological and the Tibeto-Burman literature the analysis of noun-modifying clauses is guided by syntax, whereas in Atong we will have to take semantics and pragmatics into account to understand the relationship between the attributive clause and the noun it modifies.

Comrie (1998 a) describes a clause type which he labels *attributive clause*, indicating a type of noun-modifying clause that covers relative clauses as well as different types of sentential complements with a nominal head. This means that whereas some languages, like English, have different constructions with different functions, e.g. relative clauses (*the meat which is rotting*), noun complement clauses (*the smell of meat rotting*), “Fact-S clauses” (Comrie 1998 a) (*the fact that he knew about the incident*), some languages, e.g. Japanese, Korean and Chinese, have only one noun-modifying construction called *attributive clause*. In Atong, attributive clauses, i.e. clauses marked by the attributive morpheme ⟨*gaba ~ ga*⟩ (ATTR), function as adnominal modifiers in instances in which languages like English would use either relative clauses or noun complement clauses, thus behaving like attributive clauses as described by Comrie in other Asian languages. The only difference between attributive clauses in Atong and those in other Asian languages as described by Comrie is that attributive clauses need to be genitive-

marked to function as noun complements, e.g. in cases equivalent to the English *the smell of meat rotting*, whereas different marking is not necessary in languages like Japanese, Korean and Chinese. One of the essential properties of attributive clauses described by Comrie is that they do not contain a gap corresponding to the modified noun, which, as we will see below, is also true in Atong.¹

Comrie (1998 a) builds on Matsumoto's (1988) innovative article in which she describes gapless noun-modifying clauses in Japanese. In the article she shows how Japanese has one type of noun-modifying clause that is used in cases in which English uses relative clauses, as in (1), or noun complement clauses, as in (2), or totally different constructions, as in (3). In all of these cases the relation between the head noun and the clause has to be inferred on the basis of semantics and pragmatics, since neither the head noun nor the modifying clause contain any marker indicating the role of the head noun with respect to the modifying clause.

- (1) *hon -o katta gakusei -wa doko desu ka* (idem: 166)
 book -ACC bought student TOP where is QUES.PART
 'Where is the student who bought the book?'
- (2) *sanaka -o yaku nioi -ga suru* (idem: 173)
 fish ACC grill smell NOM there-is
 'There is the smell of fish grilling.'
- (3) *hutor -anai okasi* (idem:169)
 get-fat -not sweets
 'the sweets (even though one eats) from which (one) does not get fat'

Despite the fact that Atong attributive clauses need to enter into a different, i.e. genitive-marked, construction when they function as nominal complements, as was mentioned before, I think that the term *attributive clause* is still felicitous for noun-modifying clauses in Atong. I call noun-modifying clauses in Atong attributive clauses (see also van Breugel 2008 a and b and 2009) for two reasons: Firstly, they do not behave like typologically prototypical relative clauses, as will be explained below, but have more in common with Japanese, Korean and Chinese noun-modifying constructions; secondly, because the attributive morpheme ⟨*gaba ~ ga*⟩ (ATTR) not only turns clauses but members of certain word classes into adnominal modifiers. At the end of this paper, in §8, we will see that the attributive morpheme ⟨*gaba ~ ga*⟩ (ATTR) has an attributivising function on numerals, the bound interrogative formant *bi* (QF) and the time word *dakanj* 'before, earlier, in the past'.

There are three important ways in which attributive clauses in Atong differ from relative clauses as described in the general typological literature and in other Tibeto-Burman languages, viz.

1. the non-existence of a genitivation ~ nominalisation ~ relativisation syncretism,
2. the non-existence of a common argument,
3. the non-existence of a gap in the attributive clause.

I will briefly introduce these points in this section and then refer to the section where they are discussed in detail.

The first point is the genitivation ~ nominalisation ~ relativisation syncretism and the fact that some Tibeto-Burman languages use one morpheme for all three functions. Bickel (1999) invented the term Standard Sino-Tibetan Nominalisation, building on the work of Matisoff (1972), Noonan (1997), DeLancey (1989) and others. He starts his article by saying that:

“It is a well known fact that in most Sino-Tibetan languages relative clauses and attributive/genitive markers are identical with nominalization devices and that sentences bearing such markers can also function as independent utterances...”
(1999: 271)

Matisoff, in his ground breaking 1972 article, describes how the Lahu morpheme *ve* marks the three functions of relativisation, nominalisation and genitivation, and DeLancey (1999: 233) proposes a “basic pattern of TB relativisation”, which is “the use of a nominalised clause to modify a noun”. “Since the clause is syntactically a nominal, it is typically marked by the genitive when it is subordinate to another nominal”. We will see below that this is not the case for attributive clauses in Atong.

Noonan (2008) talks about the relation between nominalisation and attribution being a prominent feature of languages in a vast speech area that ranges from Siberian languages in the north to South Asia, including the Turkic and Mongolian languages, some Siberian languages, Korean, Japanese, Tibeto-Burman, Uralic, Burushaski and Dravidian. Noonan defines this nominalisation ~ attribution syncretism as “the state of affairs whereby a morphological marker that functions to signal nominalisation is identical to one that functions as marker of the genitive and/or relative clauses”.

Not all Tibeto-Burman languages present the genitivation ~ nominalisation ~ relativisation syncretism, e.g. Garo (Burling 2004), Galo (Post 2007), Rawang (LaPolla 2008) and Atong (van Breugel 2008 a, and b and 2009) do not. Atong has a morpheme for genitivation, viz. the genitive/ablative morpheme ⟨=*məŋ* ~ =*mi*⟩ (GEN/ABL) (which also participates in lexical nominalisations together with the factitive morpheme ⟨=*wa*⟩ (FACT)), and different morphemes involved in a multitude of different clausal nominalisations, viz. the dative marker ⟨=*na* ~ =*ona*⟩ (DAT), the locative marker ⟨=*ci*⟩ (LOC) and the factitive suffix ⟨=*wa*⟩ (FACT). I would like to refer the reader to van Breugel (2008 b) for a full description of the

functions of these morphemes. To use a clause as an adnominal modifier, Atong uses the attributive morpheme ⟨=*gaba* ~ =*ga*⟩ (ATTR).

How attributive clauses are formed and how they function will be described in §2. I will introduce the term *arch NP* to refer to NPs containing a modifying clause. Having a separate term for this complex NP prevents us from having to repeat the phrase *the NP containing the modifying clause*, and will help us to distinguish terminologically between the noun-modifying clause itself and the NP in which it occurs, something that is not possible with the term *relative clause*.²

The second and third points in which attributive clauses in Atong differ from relative clauses consist of two closely related but independent phenomena, viz. the common argument and gapping, which will be treated in §§3 and 4 respectively. In §3 I will argue that it is not possible to see a modified noun as a common argument, i.e. participating in the argument structures of both the attributive and the matrix clause. We will see that, in Atong, a semantic relationship, not a syntactic one, between the modified noun and the predicate of the attributive clause can be inferred, but that this implication is contextually rather than grammatically motivated.

Closely related to the notion of *common argument* is the notion of *gap*. A gap is where the “shared argument” is represented by a gap or zero in either the matrix or relative clause rather than appearing overtly in both. In §4 I will argue against the necessity to analyse a gap in the attributive clause, contrary to many descriptions of Tibeto-Burman languages, such as Dolakha Newari (Genetti, 1994), Kham (Watters 2002) and Galo (Post 2007). On the point of gapping I was greatly inspired by Matsumoto (1988, 1989 and 1997) and Comrie (1998 a and b), who argue against the necessity of a gap in noun-modifying clauses in Japanese and Korean. Neither language marks the noun modified by a clause for its role in the modifying clause. Like Atong, both Japanese and Korean make extensive use of zero anaphora, i.e. they leave out referents from a clause when they are recoverable from the context. When the identity of the participants is understood by the listener, even the rarest and most complicated structures can be understood. Comrie has proven this with the “dog sentence” in Japanese, which is acceptable for native speakers under the right pragmatic circumstances: “The dog_i [that the person_j [who_j was keeping] died] came to the station every evening to meet his master” (adapted from Comrie 1998 b: 72).

In some Tibeto-Burman languages, e.g. Galo (Post 1997:747), Apatani (Abraham, 1985:132), other Tani languages (Post, p. c.), and Garo (Burling 2004:299), subjects in nominalised clauses are genitive-marked. In §5 I will demonstrate that this is not the case in Atong. We will see that genitive-marked NPs can be analysed as modifiers, i.e. Possessors, of the head noun of the arch NP.

Headless arch NPs are treated in §6. Headless noun phrases are a common phenomenon in Atong. When no head can be implied from the context, headless

arch NPs can be interpreted as lexicalised nominalisations, which are the topic of §7. The meaning of the derived noun is fixed and often unpredictable and the verb usually seems to have lost its verbal properties, i.e. adverbial modification, the possibility of taking arguments or expression of aspect or modality.

I will note here that Atong does not mark syntactic relations but semantic roles.³ I will use the terms ACTOR and UNDERGOER (in small caps) to indicate semantic macroroles (see Van Valin & LaPolla, 1997: 139–147). The ACTOR is the participant responsible for the carrying out of an event, i.e. the most agentive participant in the clause, and subsumes *inter alia* the microroles (with initial capitals) Agent and Actor. An UNDERGOER is “the participant that the speaker is presenting as being most affected by the action” (idem: 145) and can be a Patient, a thing given etc. Beneficiaries and Recipients are marked with the dative enclitic. Semantic role and number marking in Atong are done by enclitics that attach to the last element of the noun phrase, whether this element is nominal or not. Noun phrases do not have to have the head noun in the rightmost position. Except for demonstratives and Possessors, which always precede the head, other modifiers can precede or follow the noun and thus take semantic role and/or number enclitics.

Semantic role marking in Atong functions roughly as follows. ACTORS (Agents, Actors, Natural Forces, Emotors etc.) and UNDERGOERS are always unmarked for their semantic role. When a clause contains one or more unmarked NPs, the listener uses the context of the utterance and his knowledge of the real world to figure out which interpretation makes the most sense (see Sperber & Wilson 1987, LaPolla 2003 and to appear, LaPolla & Poa 2006). In the clause *taw? saʔ-a* (chicken eat-CUST) we see a verbal predicate, viz. *saʔ* ‘eat’, and one unmarked NP, viz. *taw* ‘chicken’. The clause can be interpreted in (at least) four different ways, according to the context. The first is to interpret the chicken as the ACTOR (Agent microrole in this case) with an implied UNDERGOER, something that chickens eat: ‘The chicken eats (that stuff)/Chickens eat that stuff’. When no UNDERGOER would be implied, the translation could be something like ‘Chickens eat.’, which could be the answer to the question ‘Do chickens eat?’, something a child might ask, for instance. The third interpretation is one where the chicken is the UNDERGOER and an Actor is implied: ‘X eats chicken’. In the fourth interpretation, the chicken is also the UNDERGOER, but no ACTOR is implied. This translates as: ‘Chicken can be eaten.’⁴

Other semantic roles are obligatorily, or to be more inductive, consistently marked throughout the recorded material, like Locations, Facsimiles (e.g. *amak=takay* (monkey=FACSIMILE) ‘like a monkey’), Instruments, Goals etc., while others can also occur without marking under different conditions, some of which are pragmatic, while others have to do with the inherent semantic properties of nouns.⁵

There is no structural difference between restrictive and non-restrictive attributive clauses in Atong. Also the position of the attributive clause with respect to the noun it modifies does not seem to be a distinctive factor, as it is in Tibetan, where “the difference between pre- and post-head relative clauses is roughly a restrictive/non-restrictive distinction” (DeLancey 1999:244), and Mongsen Ao (Coupe 2007:220 ff). In some cases in Mongsen Ao, a preceding relative clause has a restrictive function, while a relative clause following the noun it modifies has a non-restrictive function. However, only pre-head relative clauses can be used when the modified noun has unique reference. There are also cases in that language where the position of the relative clause with respect to the modified noun does not yield different interpretations. More fieldwork needs to be done on Atong to determine whether the status of the referent correlates with the position of the attributive clause. Most recorded examples of attributive clauses in Atong are restrictive. Non-restrictive interpretation is only possible if the modified noun has unique reference, e.g. in (46).

Finally, whether attributive clauses in Atong can be analysed according to Matsumoto’s (2007) theory of integrated frames (see her 1989 article for a very clear explanation of the frame theory) will be a matter of future investigation. I will limit myself in this paper to say that the interpretation of arch NPs depends on the semantics of the constituents and on contextual factors.

2. Attributive clauses

2.1 How attributive clauses function

A clause can function as a modifier to a noun when the clause is marked by the attributive clausal enclitic $\langle =gaba \sim =ga \rangle$ (ATTR). A clausal enclitic is a morpheme that is attached to the last constituent of a clause and has scope over the whole clause. Since attributive clauses are strictly predicate final, the enclitic attaches to the predicate. Attributive clauses are embedded within the NP of which they modify the head. Attributive and independent (or main) clauses have different properties, which are presented schematically in Table 1 and are discussed below.

The two allomorphs of the attributive clausal enclitic are in free variation, although older speakers use the longer form more often while younger speakers prefer the shorter one.

One of the biggest differences between main and attributive clause predicates is the fact that only verbs and no members of other word classes can function as predicates of attributive clauses, while members of other word classes can function as main clause predicates. Type 1 adjectives are a subtype of intransitive verb,

Table 1. Comparison of the properties of independent and attributive clauses

Property	Independent clauses	Attributive clauses
Type of predicate head	verbal, adjectival, nominal	verbal (including Type 1 adjectives)
Constituent order	Relatively free, predicate final in pragmatically unmarked scenario. Any topical constituent can be right dislocated, i.e. postposed to the predicate.	Strictly predicate final
Marking of aspect and modality on predicate	typically marked	typically unmarked
Negation of predicate	can be negated	can be negated
Juxtaposition with causes of the same type	yes	yes
Topic marking of constituents	often	never
Marking of semantic roles	Marking of NPs is the same for both clause types.	

and can thus function as predicates of attributive clauses. Type 2 adjectives are a separate word class and cannot function as predicate of an attributive clause. Both types of adjectives contain different inventories of lexical items denoting property concepts (see van Breugel 2008 b). Another difference between main and attributive clauses is that any topical constituent (conveying information which the speaker expects the hearer to already know about) of an independent clause can occur after the predicate, while this is not possible in dependent clauses. Right dislocation is extremely frequent in Atong. Example (4) illustrates the right dislocation of the NP *magacak* 'deer', which is also marked with the contrastive topic enclitic ⟨=e⟩ (CTOP). There is absolutely no pause between the predicate, *jalaria* 'just runs away', and the right dislocated NP, which forms one prosodic unit with the rest of the independent clause.

- (4) *tharap =na guduk tak -wa =ci =ba*
to.catch.up =DAT almost do -FACT =LOC =INDEF
tarak =ay jal -ari -a =no [magacak] =e
quick =ADV run.away -SIMP -CUST =QUOT deer =CTOP
'Whenever [the Bengal man] almost catches up [with it], [it] just runs away quickly, it is said, the deer.'

The majority of spontaneously uttered attributive clause predicates in the recorded corpus, i.e. non-elicited ones, do not express aspect or modality. Predicates of independent clauses can also occur without any aspectual or modal suffix, viz. in imperative clauses, or declarative clauses with an habitual overtone. However,

although not all aspectual and modality suffixes have been attested on non-elicited predicates of attributive clauses, when elicited, speakers find attributivised verbs marked for any type of aspect and modality acceptable and even natural. There are only a few examples of inflected attributive clause predicates in the recorded corpus. In some languages, the predicate of a noun-modifying clause is non-finite, e.g. the subject relative clause in Kham (Watters 2002: 2001), Hayu (Michailovsky 1988: 185 ff) and Turkish (see Comrie 2006: 147 and 150), in the sense that these predicates include no marking for person or number agreement, while cross reference marking does occur on main clause predicates. Atong has no marking of cross reference of arguments on the verb, and therefore the distinction between finite and non-finite predicates does not seem useful for the description of Atong, rather, a clause can be marked as dependent by certain clausal enclitics.

Attributive clauses can have their own arguments, adjuncts and predicate modifiers, just like independent clauses. The marking of arguments and adjuncts in attributive clauses is the same as in independent clauses, except for topic marking. We will see examples of this in §2.3. NPs in attributive clauses cannot be marked as (contrastive) topics by the morphemes <-do> (TOP) or <-e> (CTOP), which can occur with NPs in Topic position at the beginning of the clause or on right-dislocated NPs.

The attributive clause can precede the noun it modifies, as in (7), or follow it, as in (8), without any difference in meaning. Attributive clauses share the property of variable position with Type 2 adjectives.⁶ The variable position of Type 2 adjectives is illustrated in example (5) and (6).

In example (5), we see the Type 2 adjective *dəŋthaŋ* ‘different’ reduplicated in pre-head position in an NP, whereas in (6), the same adjective appears in post-head position.

- (5) *ətəkəysa [dəŋthaŋ dəŋthaŋ soŋ]* =ci =na hap =ci =na
 therefore different different village =LOC =DAT place =LOC =DAT
jal -tok =na gaʔak -ok =nowa.
 run.away -ALL =DAT be.compelled -PERF =QUOT
 ‘Therefore [they] were compelled to run away to different villages and places,
 it is said.’
- (6) [*biskut dəŋthaŋ*] *ramʔ -a⁷ =cəm*
 biscuit different search -FACT =IRR
 ‘[You] should have bought other biscuits.’

2.2 Terminology

Nouns can be modified by multiple attributive clauses in pre- and/or post-head position, e.g. (35) and (36). The attributive clause and the noun it modifies, together, form a complex NP, which I will call the *arch NP*.⁸ The head of the attributive clause is its predicate; the head of the arch NP is the modified noun. The arch NP can function as phrasal constituent in a higher NP or as clausal constituent in a matrix clause.

We can see in examples (7), (8) and (9) how the terminology outlined above explains the syntactic situation in Atong. In these examples, the attributive clauses are indicated between vertical lines, NPs are in square brackets and the heads of arch NPs are bold and underlined. The attributive clause predicates in these examples are all Type 1 adjectives, i.e. intransitive verbs denoting a property concept. In example (7) the predicate of the attributive clause is *cuŋ* ‘to be big’. The head of the arch NP is *phəlgəm* ‘eagle’. The head is modified by the attributive clause. The whole arch NP is referential, which is signalled by the enclitic <=*aw*> (REF), and should be interpreted as UNDERGOER in the context of the narrative in which it occurs.

- matrix clause -----
 ----- arch NP -----
 -AC-
 (7) *ucie* [*phəlgəm* | *cuŋ*] =*gaba*]_{UNDERGOER} =*aw nuk -ok =no*
 then eagle be.big=ATTR =REF see -PERF =QUOT
 ‘Then [he] saw the big eagle, it is said.’⁹

In (8) we see how the head of the arch NP, *kam* ‘work’, is modified by a preceding attributive clause with the predicate *cuŋ* ‘to be big’.

- matrix clause -----
 ----- arch NP -----
 -AC-
 (8) *kənsəŋ =do* [|*cuŋ*] =*gaba* *kam*]_{UNDERGOER} *manʔ -ok* [*sagal təysam*] =*ci*
 later =TOP be.big=ATTR work get -PERF sea waterside=LOC
 ‘Later [he] got a big job at the seaside.’

The arch NP in example (9) as a whole is embedded as a modifier in another NP of which the noun *dada* ‘elder brother’ is the head.

- arch NP -----
 -AC-
 (9) [| [*sazgəray* | *məl*] =*gaba*] =*mi dada*]_{MATRIX NP} =*daran*
 child be.small=ATTR =GEN elder.brother =p
 ‘the small child’s elder brothers’

2.3 The internal structure of attributive clauses and arch NPs

As was mentioned above, predicates of attributive clauses can have their own argument structure and adverbial modifiers. Marking of the semantic role of arguments in attributive clauses is the same as in main clauses. In example (10) we see how the Direction argument, *dajon*, of the attributive clause predicate *ray-* ‘to go’ is marked by the mobilitative case. In (11) the predicate of the attributive clause, *hən?* ‘to give’ is modified by the adverbialised verb *dol-* ‘to divide’.

- matrix clause -----
 ----- arch NP -----
 ----- AC -----
- (10) [|*dajon* =*san* *ray?*| =*gaba ram*] =*do tuk* -*a*
 Dajong =MOB go =ATTR road =TOP overgrown -CUST
 ‘The road which goes to Dajong is overgrown.’
- arch NP -----
 ----- AC -----
- (11) [*mola* |*dol* =*ay* *hən?*| =*gaba*]
 tobacco divide =ADV give =ATTR
 ‘the tobacco that [I] divided and gave’

The verb *no-* ‘to say’ signals direct speech reports. The repeated words verbatim are the Quote of a speech report construction. Quotes can be an argument of an attributive clause with *no* ‘say’ as its predicate, as in (12). In this example the arch NP is headless (headless arch NPs are treated in §6) and the implied head is the speaker who says the quote. The whole arch NP functions as Beneficiary in the matrix clause and is therefore dative-marked.

- AC -----
 ----- Quote -----
- (12) [| [*aya awaŋ* =*do na?* *man?* -*wa* =*te*] *no*| =*gaba*]_{Beneficiary} =*na*
 interj uncle =TOP fish get -FACT =DCL say =ATTR =DAT
man *tham tan* -*aŋ* -*aydoŋa* =*no* -*wa*
 CLF:ANIMALS three put -AWAY -PROG =QUOT -FACT
 ‘For [the one who] said “Hey! Uncle got fish!” [he] left three [fish] behind, it is said.’

Demonstratives, when present, are always the first element in an NP. This also holds when other modifiers, like attributive clauses, are present in the NP. In examples (13) and (14), we see a pre- and post-head attributive clause respectively in arch NPs, of which the first constituent is the distal demonstrative *ue* ‘that’.

- arch NP -----
 - AC -
 (13) [*ue |goroŋ| =gaba acu*]
 that meet =ATTR grandfather
 ‘that grandfather whom [they] met’

- arch NP -----
 -AC-
 (14) [*ue diŋgaray | sa | =gaba*]
 that fish.trap set.as.trap =ATTR
 ‘that fish trap that [he] set’

Attributive clauses that precede the noun they modify can be separated from that noun by another noun that modifies the head. In (15) we see how the attributive clause is separated from the head of the arch NP by the genitive-marked noun *jila* ‘district’ modifying the head with a genitive. In (16) the head noun *wa* ‘tooth’ is modified by the noun *moŋma* through simple apposition. The modifying noun stands in between the attributive clause and the head noun *bostu* ‘thing’.

- arch NP -----
 ----- AC -----
 (15) [*phaynan saʔ-roŋ -ca| =gaba jila =mi bostu*]
 always eat -USUALLY -NEG =ATTR district =GEN thing
 ‘things from the district which are usually never eaten’
- AC -----
 (16) [*nokphanday doʔkhakhu =ci kha -cap -ay tan| =gaba*
 bachelors.house king.post =LOC tie -ALONG.WITH -ADV put =ATTR
*moŋma wa*_{HEAD}]_{arch NP}
 elephant tooth
 ‘the elephant tusk which was tied to the king post of the bachelors’ house’

As was said in the introduction, semantic role is indicated by phrasal enclitics that attach to the last constituent of the phrase, whatever this may be. In example (17), the locative morpheme ⟨=*ci*⟩ (LOC) is cliticised to the numeral *sa* ‘one’, which is the last element in the NP of which the noun *soŋ* ‘village’ is the head.

- (17) [*soŋ dam sa*] =*ci*
 village CLF:PLACES one =LOC
alsia raja məŋ? sa ganəŋ =cəm.
 lazy king CLF:HUMANS one exist =IRR
 ‘In a village lives, supposedly, a lazy king.’

In the same vein, the role of an arch NP can be marked for its role in a clause. Example (18) shows an arch NP marked by the locative, since it fulfils the role of Location in the matrix clause. The arch NP is also marked by another phrasal enclitic, viz. the contrastive topic marker (<=e>) (CTOP).

- arch NP -----
 -AC-
 (18) [*səmpak* |*cuŋ*| =*gaba*] =*ci* =*e* *phəlgəm paʔ* =*ay*
 type.of.tree be.big =ATTR =LOC =CTOP eagle perch =ADV
 muʔ -saw -*aron* =no.
 stay -PATIENTLY -PROG =QUOT
 ‘The eagle is perching patiently in a big *sympak* tree, it is said.’

Of course the same pattern is followed when the attributive clause precedes the noun within the arch NP: The semantic role marker and other phrasal enclitics attach to the last element in the NP, as we see in (19). In this example, the head noun, *hap* ‘place’, is the last element in the arch NP.

- arch NP -----
 ----- AC -----
 (19) *boba mənʔ* *sa* [|*soŋ* =*mən janʔ*| =*gaba hap*] =*ci* =*e*
 fool CLF:HUMANS one village =ABL be.far =ATTR place =LOC =CTOP
 bari tak =*ay* =*muŋ* [...]
 garden make =ADV =SEQ
 ‘after the fool made a garden in a place far from the village [...]’

It was mentioned above that attributive clause predicates do not usually carry aspect or modality suffixes, but that, when elicited, it seemed natural for native speakers to be able to add such suffixes, which makes the difference between attributive clauses and independent clauses very small. There are a few examples of inflected attributive clause predicates in the recorded corpus. In (20) we see the predicate *muʔ*- ‘to stay’ with the factitive modality morpheme (<-wa>) (FACT), and in (30) we see the same predicate with the progressive aspect suffix (<-aydon>) (PROG):

- arch NP -----
 ----- AC -----
 (20) *badri =do* [|*cigacak* =*ci* *muʔ -wa*] =*gaba =mi bimun*]
 Badri =TOP Chigachak =LOC stay -FACT =ATTR =GEN name
 donʔ -a =*cəm*
 be -CUST =IRR
 ‘As for Badri, [it] is supposedly the name from [the people] that were living
 in Chigachak.’ i.e. Badri was supposedly the name that the people who lived
 in Chigachak gave to the village.

Attributive clause predicates can be negated, just like independent clause predicates. Example (21) shows us how the predicate *lap*- ‘to be profitable’ is negated with the negative suffix <-ca> (NEG).

- (21) *atak =gaba raja naʔa aŋ =na*
 do.what =ATTR king 2s 1s =DAT
 [*gore lap _____ -ca =gaba*] =aw *watet -wa no -ok =no.*
 horse profitable -NEG =ATTR =REF send -FACT say -PERF =QUOT
 ‘‘What kind of king [are] you [to] send me a worthless horse?’’, [he] said, it is said.’

2.4 Cross-linguistic considerations

That which is done with separate syntactic constructions in English is done with the same noun-modifying clause constructions in other languages. While English distinguishes relative clauses and noun complement clauses, Japanese, (Mandarin) Chinese, Korean (Matsumoto, 1989, 1997, and Comrie, 1998 a and b), and Khmer (Comrie, 1998 a) use one and the same construction. Comrie (1998 a: 54, examples 10–12) gives the following examples from Japanese, presented here in (22). Comrie terms clausal complements of the noun *fact* in English, as in b), ‘‘fact-S constructions’’. In c) we see that English uses a relational clause where Japanese uses the same construction as in the two other examples.

- (22) Japanese (my italics)
- a. *gakusei ga kat -ta hon*
 student NOM buy -PST book
 ‘the book that the student bought’
 - b. *gakusei ga hon o kat -ta zizitu*
 student NOM book ACC buy -PST fact
 ‘the fact that the student bought the book’
 - c. *dareka ga doa o tatak -u oto*
 someone NOM door ACC hit -PRS sound
 ‘the sound of someone knocking at the door’

Fact-S constructions are not attested in Atong, maybe because the language does not have a word for *fact*. There is a relational construction related to (22), which I will compare to the Noun + Noun modifying construction and the possessive construction. Modification of a noun by another noun can be done by unmarked juxtaposition of two nouns, when the first, unmarked noun, modifies the second, as in (23), where the noun *morot* ‘human, person’¹⁰ modifies the head noun *sən* ‘smell’ within an NP. In cases like this, the modifying noun is non-referential.

- (23) *kənsaŋ =do matsa =do [morot səŋ] manʔ =ay =məŋ*
 later =TOP tiger =TOP human smell get =ADV =SEQ
rayʔ -wil -ok =no alsia =do
 go -AROUND -PERF =QUOT lazy.person =TOP
 ‘Later, having gotten the human smell, [it] walked around in circles, it is said,
 [around] the lazy person.’

A noun can also be modified by a genitive-marked noun preposed to the head. This construction engenders a Possessor-Possessed interpretation. As a result of the genitive morpheme, the Possessor will be interpreted as referential. In (24) we see a combination of unmarked and genitive-marked modification. *Roŋsa* (the name of the river) modifies *thəykhəl* ‘river’, but is not a Possessor; *roŋsa thəykhəl* ‘Rongsa river’ modifies *haʔway* ‘plain’ as a genitive-marked Possessor.

- (24) *baydam [[roŋsa] thəykhəl] =mi haʔway] =ci =na*
 some.people Rongsa river =GEN plain =LOC =DAT
jal -aŋ -ok
 run.away -AWAY -PERF
 ‘Some ran away to the plains of the river Rongsa.’

The modifying noun within an NP can be modified by an attributive clause to obtain a construction as in (20) above or (25) below that resembles Japanese (22) in meaning but not in structure. Atong speakers insist on using a genitive on arch NPs used as modifiers to nouns. This is most probably because attribution makes arch NPs referential by definition. The use of the genitive makes the construction identical to a Possessor-Possessed construction.

- arch NP -----
 -AC-
 (25) *[[randay |sawʔ] =ga] =mi səŋ]_{COMPLEX NP} manam -a*
 meat rot =ATTR =GEN smell stink -CUST
 ‘The smell of meat that rots stinks.’

The genitive indicates the modifying function of the arch NP within the complex NP, makes the complex NP referential, and separates the arch NP from the head of the complex NP, *səŋ* ‘smell’. Since genitive-marked nouns always precede the noun they modify, there can be no confusion as to which noun is the head of the complex NP. This is very useful when a headless arch NP modifies a noun within a complex NP, as in example (26). In this example, the noun *saʔ* ‘child’ cannot possibly be interpreted as the head of the arch NP since the arch NP is genitive-marked. Genitive-marked nouns within arch NPs will be treated in more detail below.

- (26) *may =dəraŋ =aw =ba* [pause] *detheŋ =na* [pause]
 rice =p =REF =ADD 3s =DAT
gal =gaba =dəraŋ =aw =sa hənʔ -ari -a =no ue [pause]
 fall =ATTR =p =REF =DLIM give -SIMP -CUST =QUOT that
 ----- arch NP -----
 [[*manʔmay saʔ =gaba*] =*mi saʔ*] =*na =e*
 in.great.amounts eat =ATTR =GEN child =DAT =CTOP
 ‘As for the rice as well, [they] just gave him only that which had fallen on the ground, it is said — to the child of [the man who] eats in great amounts (i.e. to the rich man’s child).’

3. No common argument, no extraction

The term *common argument* refers to the syntactic relationship that the head of the arch NP simultaneously has with the predicate of the matrix clause and the predicate of the relative clause (e.g. Aikhenvald 2003: 537 ff and 2008: 469 ff and Dixon 2004 b: 525). In Manambu (Aikhenvald 2008: 469), the last cross-referencing position of the predicate of a relative clause always agrees with the common argument. There are other Tibeto-Burman languages in which the syntactic or semantic role, or both, of the modified noun in relation to the predicate of the modifying clause determines the morphological marking of the modifying clause (sometimes in combination with other factors such as aspect), e.g. Kham, Limbu, Dolakha, Hayu, and Lhasa and Shigatse Tibetan (see Genetti 1992 and Mazaudon 1978).

Not only in Atong, but in languages in general, it would be a mistake to call the head of the arch NP (i.e. the NP containing a noun-modifying clause) the “common argument”, suggesting that it simultaneously partakes in the argument structure of the attributive as well as the matrix clause. This assumption is mistaken, because it is not the head of the arch NP that functions as argument in the matrix clause, but the arch NP as a whole. The head of an NP cannot be seen as a separate clausal constituent from the modifier of that head. In the English clause *I ate a big apple*, the noun ‘apple’ is not the O argument of the clause but the NP [*a big apple*] is. Semantically the head of an NP denotes, whereas an NP as a whole refers (see Lyons 1977: 174 ff. for a discussion on denotation and reference). The referent is structurally represented by the whole NP constituent. Hence, the head of the modified NP cannot be a constituent of the matrix clause.¹¹

If one says that the head of the arch NP is a “common argument”, this would entail that this noun is simultaneously governed by the predicate of the noun-modifying clause and controlling the same predicate as a modifier within the NP. In reality the attributive clause modifies the head noun of the arch NP. When we

make a diagram of the arch NP in (27), according to the theory that prescribes the common argument, we would get a representation as in Table 2, constituent analysis, or Table 3, dependency analysis. One has to bear in mind that in Atong *cun* ‘to be big’ is a stative verb, i.e. an intransitive verb denoting a quality. These diagrams tell us that Atong people are actually thinking “the big eagle is big”, which is then later “transformed” into “the big eagle” after the deletion of one of the two occurrences of eagle. The head of the arch NP is governed by the relative clause predicate and at the same time modified by it. This would be a very strange representation of the facts attested in the language, a representation to which I do not adhere.

(27) ----- arch NP ----- *Constituent analysis*
 -AC-
 [*phəlgəm |cun| =gaba*]
 eagle big =ATTR
 ‘a/the big eagle’

Table 2. Constituent analysis of the arch NP shown in (27)

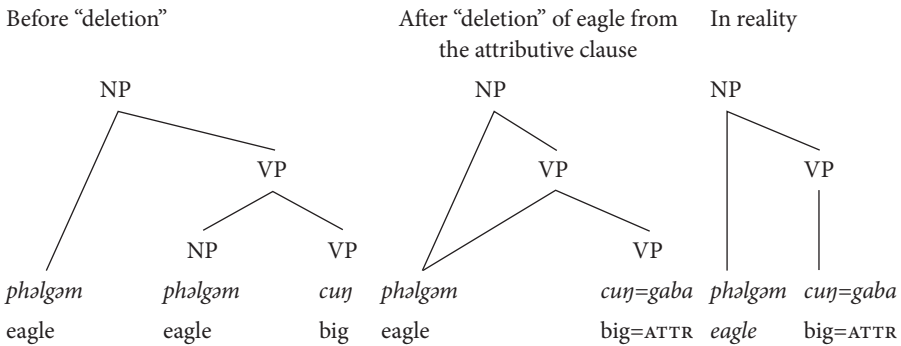
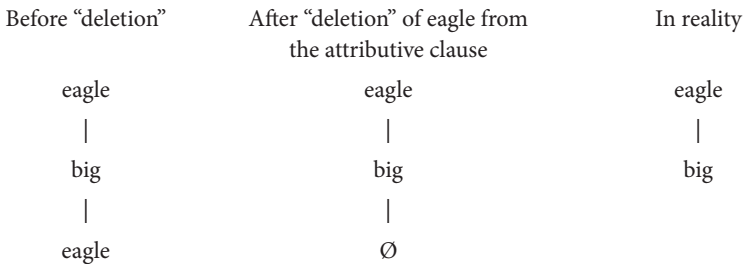


Table 3. Dependency analysis of the arch NP in (27)



In Atong, the fact that the head of the arch NP is not a constituent of any clause can be seen by the fact that it cannot be marked for a semantic role. Semantic role marking of arguments and adjuncts in attributive clauses is the same as in main

clauses and was treated in the introduction. However, although the head of the arch NP is not a clausal constituent, a relationship between the head of the arch NP and the predicate of the attributive clause can be inferred on semantic or pragmatic grounds, but no semantic relationship is grammatically required, i.e. there are no morphological or syntactic consequences related to any possible interpretation of the relationship between the head of an arch NP and the predicate of the attributive clause, as we can see in example Table 2 above and shall again see in the next section (example (40)). In (28), if any relationship is to be inferred at all between the head of the arch NP and the predicate of the attributive clause, it can only be Location, although the head is not marked for that role. Alternatively we could think of a main clause paraphrase where *bil* (a person's name) is the Possessor of *bəl* 'strength', e.g. (29).

- arch NP -----
 ----- AC -----
- (28) [*bəl* *ni?* *-khal*] =*gaba bil*_{HEAD}
 strength not.exist -COMP/SUP =ATTR Bil
 'Bil, who does not have strength at all'
- (29) *bil =məŋ bəl ni? =wa*
 Bil =GEN strength not.exist =FACT
 'Bil's strength does not exist.' Alternatively: 'Bil is not strong.'

In Atong the factors that limit the interpretation of the possible semantic relationship are the semantics and argument restrictions of the attributive clause predicate; the position, semantics and semantic role marking of other NPs within the arch NP; the semantics of the head itself; and the context of the utterance. We shall discuss these factors in detail below. Now consider example (30).

- arch NP -----
 ----- AC -----
- (30) [*an*_{ACTOR} *mu?* *-aydoŋ*] =*gaba mura*_{Location}] *ga?* *-an -ca*
 Is stay -PROG =ATTR stool good -REF -NEG
 'The stool on which I sit is not good.'

Example (30) consists of two clauses, viz. the attributive clause, between vertical lines, of which the intransitive verb *mu?* 'to stay' is the predicate, and the matrix clause, of which *ga?* 'to be good' is the predicate. The noun *mura* 'stool' is the head of the arch NP which functions as ACTOR argument in the matrix clause. Since ACTORS are always unmarked for semantic role, the arch NP has no role marking enclitic following it. The semantic relationship that obtains between the head of the arch NP and the predicate of the attributive clause has to be pragmatically inferred. The semantics of attributive clause and of the head of the arch NP prompt

the hearer to understand *mura* ‘stool’ as the thing sat on, not the thing doing the sitting. In this example we also see that the argument of the attributive clause, the first person singular personal pronoun *aŋ*, appears in the normal argument position before the predicate. Personal pronouns have not been attested as the head of an arch NP in Atong.

In certain specific contexts, the word *mura* ‘stool’ in (30) can be conceived of as being in an Actor relationship to the predicate of the attributive clause. This possibility is presented in (31). The personal pronoun is now interpreted as an unmarked adnominal modifier, i.e. a Possessor, embedded within the arch NP.

- arch NP -----
 ---- AC ----
- (31) [[*aŋ*]_{POSSESSOR} | *muʔ -aydoŋ* | =*gaba mura*_{Actor}] *gaʔ -an -ca*
 1s stay -PROG =ATTR stool good-REF-NEG
 ‘The stool, belonging to me, which is staying here (as distinct from others that have been taken away), is not good.’

Noun phrases that are not ACTORS or UNDERGOERS are usually marked according to their semantic role. Thus when *mura* ‘stool’ would be a constituent of the main clause corresponding to (30), it would have to be locative-marked. The main clause version of the attributive clause involving the word *mura* ‘stool’, could be either (32) or (33), depending on the speaker’s desire to make sure that the ACTOR argument is not confused with the Possessor of the stool. In Atong, an unmarked personal pronoun followed by a noun can always be interpreted as Possessor-Possessed. In (32) only one interpretation is possible, viz. *aŋ* ‘I’ is the ACTOR argument. In (33) it is not possible to distinguish ACTOR argument from Possessor.

- (32) [*mura*] =*ci* [*aŋ*]_{ACTOR} *muʔ -aydoŋa*
 stool =LOC 1s stay -PROG
 ‘I am sitting on a stool.’
- (33) *aŋ mura* =*ci* *muʔ -aydoŋa*
 1s stool =LOC stay -PROG
 ‘I am sitting on a stool.’ or ‘[X] am/is/are sitting on my stool.’

In (34) we again see an arch NP with a head that can be interpreted as having the semantic role of Location with respect to the predicate of the attributive clause, but, whereas in (30) above, the clause precedes the head, below, the attributive clause follows the head. We see that the noun *nok* ‘house’ is the head of an arch NP with an intransitive attributive clause of which the predicate is *muʔ* ‘to stay’. The head is not marked for semantic role because it is neither a constituent of the attributive clause nor of the matrix clause. The arch NP as a whole functions as UNDERGOER (in this case a Patient) argument in the matrix clause, which is an

adverbial-marked subordinate clause. The head should be interpreted as a Location in relation to the attributive clause given its semantics in combination with the semantics of the predicate of the attributive clause. The arch NP is unmarked for semantic role. The first person personal pronoun *aŋ*, which is the ACTOR of the attributive clause, is in the same position as in the example above, i.e. in argument position, immediately preceding the predicate.

- matrix clause -----
 ----- arch NP -----
 -- AC --
- (34) [*nok*_{Location} |*aŋ muʔ*|=*gaba*]_{UNDERGOER} *gurum -ok*
 house 1s stay =ATTR collapse -PERF
 ‘The house in which I lived has collapsed.’

In (36), the most likely interpretation of the semantic role of the noun *bostu* ‘thing’ with respect to the predicate of attributive clause AC3 is that of Patient, i.e. the thing eaten and not the thing doing the eating. Note that, in example (36), the head of the arch NP is not only modified by the attributive clause, but also by a genitive-marked Possessor.

Nouns can be modified by more than one attributive clause. In example (35) the head of the arch NP, *wa* ‘tooth’, is modified by an attributive clause on either side. In addition the head noun is modified by another noun in apposition, viz. *munma* ‘elephant’. The semantic relationship of the head of the arch NP to the predicate of the first attributive clause (AC1) can be conceived as Patient, and to that of the second attributive clause (AC2) Attributant. The whole arch NP functions as UNDERGOER argument in the matrix clause.

- (35) [...] *nokphanday doʔkhakhuci khacapay tangaba monmawa dora bəʔəy doŋʔgabaaw raʔay jaləŋokno.*
- AC 1 -----
 [|*nokphanday doʔkhakhu =ci kha -cap -ay tan*|=*gaba*
 bachelors.house king.post =LOC tie -ALONG.WITH -ADV put =ATTR
*munma wa*_{Patient/Attributant}
 elephant tooth
 ----- AC 2 -----
 [*dora bəʔəy doŋʔ*|=*gaba*]_{UNDERGOER} =*aw*
 weight.of.5kg four IE.be =ATTR =REF
raʔ =ay jal -aŋ -ok =no
 take =ADV run.away -AWAY -PERF =QUOT
 ‘[...they] ran away taking the four *dora* (20 kg) weighing elephant tusk which was tied to the king post of the bachelors’ house, it is said.

In example (36), all attributive clauses are grouped to the left of the noun they modify.¹² The head of the arch NP can be conceived to have a certain semantic relationship to the predicates of the attributive clauses AC1 and AC2 and another to the predicate of AC3. To AC1 and AC2 the head could be *Attributant*. The relationship between the head of the arch NP and AC3 could be conceived as *Patient*.

- (36) *thawgaba səmgaba phaŋnan saʔroŋcagaba jilami bostudəraŋaw raay hənʔaymuŋ* [...]
- | | | | | | | |
|---------|---|--|---------------------------------|-------------|----------------------------|------------|
| arch NP | { | -AC1- | -AC2- | ----- | AC 3 | ----- |
| | | [<i>thaw</i> = <i>gaba</i> <i>səm</i> = <i>gaba</i> <i>phaŋnan saʔ-roŋ</i> - <i>ca</i> = <i>gaba</i> | | | | |
| | | tasty =ATTR | sweet =ATTR | always | eat -USUALLY | -NEG =ATTR |
| | | <i>jila</i> = <i>mi</i> <i>bostu</i> | Attributant/Attributant/Patient | } UNDERGOER | = <i>dəraŋ</i> = <i>aw</i> | |
| | | district =GEN | thing | | =p | =REF |
| | | <i>ra</i> = <i>ay</i> <i>hənʔ</i> = <i>ay</i> = <i>məŋ</i> | | | | |
| | | bring =ADV | give =ADV | =SEQ | | |
- ‘Having brought and given tasty, sweet things from the district, which are usually never eaten...’

In examples like (37), it is not the noun *ram* ‘road’ that functions as topicalised UNDERGOER in the matrix clause, but the NP *dajoŋsaŋ reʔeŋgaba ram* ‘the road that goes to Dajong’ as a whole. The noun *ram* ‘road’ is not a constituent of any clause but functions as phrasal constituent, i.e. as head of an arch NP. The semantic relation of the head of the arch NP to the predicate of the attributive clause can be conceived as *Actor*.

- | | | |
|-------|---------------|-------|
| ----- | matrix clause | ----- |
| ----- | arch NP | ----- |
| ----- | AC | ----- |
- (37) [|*dajoŋ* =*saŋ* *rayʔ*| =*gaba* ***ram***_{Actor}] =*do* *tuk* -*a*
- Dajong =MOB go =ATTR road =TOP overgrown-CUST
- ‘The road which goes to Dajong is overgrown.’

Examples like (35) and (36) show that an attributive clause does not need to be in direct proximity to the head of the arch NP, like in, for instance, Rawang (La-Polla 2008: 801). Other modifiers can intervene between the attributive clause and the head, as we have seen above in (35), where the noun *mongma* ‘elephant’ intervenes, and (36), where the genitive modifier *jila=mi* (district=GEN) ‘from the district’ intervenes. The marking of the attributive clause with the clausal enclitic (<=*gaba* ~ =*ga*>) is enough for the addressee to identify the clause as a modifier.

To recapitulate, the arch NP contains an attributive clause and a modified noun, which is the head of the arch NP. This analysis is also discussed by Lehmann (1984). Although he did not invent the term *arch NP*, Lehmann describes

the relative/attributive clause construction as being a complex NP, which he calls *Relativkonstruktion*, consisting of a modifying relative clause, the *Relativsatz*, and the head, i.e. the noun modified by the relative clause, which Lehmann calls the *Bezugsnominal*. Thus, Lehmann's *Relativkonstruktion* and the 'arch NP' describe the same type of NP, viz. one containing a clause modifying the NP head. Given the great relevance of his work to the analysis proposed in this article, Lehmann is worth quoting extensively:

[...] nennen wir das Nominal, das von Bezugsnominal und RS [Relativsatz] konstituiert wird, das höhere Nominal. Dieses, d.h. jedes Nominal, das einen RS als unmittelbare Konstituente hat, heißt Relativkonstruktion [...] Es handelt sich hier um ein **endozentrische Konstruktion**; das Bezugsnomen ist ihr Nukleus, der RS ihr **Satellit**. Ein Satellit ist, semantisch gesprochen, ein **Modifikator**. Ein Satellit, der ein Nominal modifiziert und also ein (komplexes) Nominal mitkonstituiert, ist ein **Attribut**. Daher sind RSe [...] Attribute und heißen auch Attributsätze. (1984: 44)¹³

In Atong, the head of the arch NP does not function as syntactic constituent of either the attributive clause or the matrix clause;¹⁴ therefore, it cannot be marked for semantic role. The arch NP, as a whole, functions as an argument or adjunct (peripheral argument) in the matrix clause, and can be marked for its semantic function in the matrix clause when appropriate (see above). The semantic relationship between the predicate of the attributive clause and the head of the arch NP needs to be inferred pragmatically. There are no grammatical constraints that force any semantic interpretation, nor indeed the presence of a semantic relationship. The arch NP functions in all respects as a prototypical NP and there are no restrictions on the inflection or semantic functions that it can have in the matrix clause.

4. No gapping and no obligatory syntactic/semantic relationship

One of the characteristics of Atong attributive clauses is the fact that the head of the arch NP cannot be represented "inside" the attributive clause as an argument of the attributive clause predicate. As we have seen above, the head of the arch NP participates neither in the argument structure of the attributive clause nor in that of the matrix clause. There are also no relative pronouns in Atong, nor any "stranded" prepositions (such as in English *the friend I gave my bike to*). The head of the arch NP cannot be represented by a personal pronoun inside the attributive clause, thus Atong does not have the pronoun-retention type relative clause. This will tempt us to believe that Atong uses the gap strategy. As was mentioned above, a gap is where the "shared argument" is represented by a gap or zero in either the matrix or relative clause rather than appearing overtly in both. A constituent can

only be gapped when it is believed that it somehow had to be in the clause it was taken out of.

Gapping might be a useful concept in a framework in which a certain main/independent clause type is taken as the basis on which other clause types are formed, a framework in which one believes in “extraction”. In languages like English, we could say that a noun which is modified by a relative clause has been somehow “extracted” from the main clause equivalent of the modifying relative clause. In languages like English, prototypical main clauses always contain an overt representation of all core arguments. A relative clause, being just a transformed main clause, should also have all the core arguments represented in it for it to be grammatically correct. However, since the modified noun has been extracted from the clause that is now modifying it, something needs to fill the syntactic void that is thought to be left behind. A relative pronoun can be used as the representation of the modified noun in the relative clause, or, in case there is no relative pronoun, a gap or a zero, e.g. *the book the student bought* \emptyset , where the \emptyset represents the gap left behind by *the book*. Thus a gap ensures that the non-audible argument in the relative clause is still represented and therefore makes the relative clause grammatically similar to a prototypical main clause.

I adopt Matsumoto (1988/97) and Comrie’s (1998 a) point of view that certain languages, like Korean and Japanese and other languages in the “Asian Attributive clause area” (Comrie 1998 a: 59), do not need a gap in the attributive clause to account for any missing argument.¹⁵ Like Korean and Japanese, Atong makes extensive use of zero anaphora; any argument can be left out of the clause when it is retrievable from the context. Clauses without any arguments are perfectly grammatical in Atong. Moreover, in languages like Atong it is very difficult to determine which arguments should be conceptualised as core arguments of any potentially multivalent verb, since all arguments can be omitted and then transitive or intransitive interpretation depends on the context in which a clause occurs. When we look at (30) and (31) above, we have no reason to assume that the head has to be gapped in the attributive clause. A speaker could say ‘I sit on the chair’ with both the ACTOR and Location expressed, but because arguments can be omitted in the language anyway, there is no reason to imagine an argument being there. The clause *ay muʔ-aydoŋ* (1s stay-PROG) ‘I am sitting/I’m staying (not leaving)’ is perfectly grammatical and there is no syntactic proof that a Locative argument has to be obligatorily conceptualised by the speaker, i.e. that it is a core argument. Moreover, it is possible, in specific contexts, to interpret the chair in an Actor relation to the attributive clause predicate. The word *mura* ‘chair’ is not marked for semantic role and therefore its role has to be inferred reference to the context in which the utterance appears.

Even with possibly omitted ACTORS or UNDERGOERS there is no syntactic constraint that forces us to posit a gap in the attributive clause in Atong. Semantically we could imagine numerous participants, but none of these are grammaticalised in Atong, to the point that there are syntactic constraints on their occurrence in a clause. In English, for example, the S (intransitive subject) argument has to be expressed in intransitive and A (transitive subject) and O (transitive object) in transitive clauses and the A, O and Location all must be expressed in a clause with the verb *to put*. In Atong we could multiply the gaps ad infinitum for lack of syntactic proof of what should be conceived of as a core argument and therefore should be present in a clause. In reality, the appearance of arguments in a clause is pragmatically conditioned. Any construction has to be interpreted in a context, which is when the relationship between the head of the arch NP and the attributive clause becomes clear. The utterance in (38) (person kill=ATTR) can be interpreted in three ways:

- (38) *morot soʔot =gaba*
 person kill =ATTR
- The verb *soʔot* 'to kill' can be interpreted as intransitive: 'a person who kills', where the stated NP is the Agent, or the S argument of the intransitive verb.
 - The verb can be interpreted as transitive: 'a person/someone/something who/that kills persons', in which, according to my consultants, the stated NP is most likely to be interpreted as the Patient and the Agent is implied.
 - The stated noun can be interpreted as Patient and no Agent is implied: 'a killed person.'

The construction in (38) can only be interpreted, i.e. gets a meaning, in a context. In the context of (39), the different interpretations are listed in order from more to less felicitous; interpretation c) is not felicitous in this context, whereas if we would change the verb to, for example, 'hit', it could be felicitous.

- (39) *morot soʔot =gaba =aw gobormen soʔot -siga -ni*
 person kill =ATTR =REF government kill -ALT -FUT
- 'A person who kills, the government will kill in turn.'
 - '[A person/someone/something] who/that kills persons, the government will kill in turn.'
 - *'A killed person, the government will kill in turn'

So we see that in Atong arch NPs, as Matsumoto (1988/97) has already argued for Japanese noun-modifying clause, a possible role of the modified noun in relation to the attributive clause has to be determined by the meaning of the constituents

within the arch NP and the context in which the arch NP is used, not by the syntactic requirement to fill a missing argument position in the attributive clause.

It was already mentioned above that a semantic relationship between the head of the arch NP and the predicate of the attributive clause is not obligatory. In (40) we see an arch NP where there is no semantic relationship between the predicate of the attributive clause and the head.

- arch NP -----
 ---- AC ----
 (40) [|*kam paŋʔ*| =*gaba morot*]
 work much/many =ATTR person
 ‘a person whose work is much’, alternatively: ‘a person who has a lot of work’

The predicate of the attributive clause, *paŋʔ* ‘to be much/many’ is intransitive and is already saturated with its Attribute argument *kam* ‘work’. There could not even be a gap in the attributive clause if one was deemed necessary, since the verb *paŋʔ* ‘be much/many’ can have only one argument. One could, ultimately, argue whether the head, *morot* ‘person’, would have been represented as a Possessor of the noun *kam* ‘work’, viz. *morot=məŋ kam paŋʔ-a* (person=GEN work much/many) ‘the person’s work is many’, or as a Location adjunct, viz. *morot=ci kam paŋʔ-a* (person=LOC work much/many) ‘the person has a lot of work’, in a conceivable “main clause equivalent” of the arch NP, i.e. a hypothetical clause in which all elements we find in the arch NP are represented, but which means something different. However, this is not the way in which, I believe, the Atong language works. The speaker did not use a main clause, he used (40) and in that NP the noun *morot* ‘person’ is not part of the argument structure of the predicate of the attributive clause.

Note that in the type of clausal attribution described in this paper, since there is no extraction and no gap, and the relation between the head of the arch NP and the predicate of the attributive clause is semantic, purely interpretational and unrestricted, we **cannot** do what is done in analyses of European-type relative clauses, namely talk about “restrictions on relativisation”, also termed “accessibility constraints” (Keenan & Comrie 1977, Comrie 1985 etc.), since this notion is not applicable. These accessibility constraints have to do with the possible syntactic role(s) a modified noun can have in relation to the predicate of the modifying clause in a certain language. That Atong does not have such constraints is precisely what is expected of languages that depend heavily, if not entirely, on semantic relations instead of syntactic ones (Foley & Van Valin, 1977: 312–3 and LaPolla, 1993, who argues that this is the case for Chinese).

5. Genitive-marked Agent or Possessor?

As was mentioned in the introduction, in some Tibeto-Burman languages, e.g. Galo (Post 1997:747), Apatani (Abraham, 1985:132), other Tani languages (Post, p. c.) and Garo (Burling 2004:299), “Subjects” in nominalised clauses are genitive-marked. In Atong, a genitive-marked noun preceding a transitive attributive clause predicate can be *interpreted* as being coreferential with an implied Agent, but this cannot be the case when the Agent is overtly stated in the attributive clause.

Consider example (41), where we see an arch NP with a post head attributive clause. It is important to note that the predicate of the attributive clause, *hən?* ‘to give’, can be used transitively. The noun *mola* ‘tobacco’ is the head of the arch NP.

- (41) [*ie aŋ =mi mola dol =ay hən =gaba*] =*aw*
 this 1s =GEN tobacco roll.up =ADV give =ATTR =REF
nan? -təm i =aw rəŋ =na man? =ci =do
 2s -ppp this =REF drink =DAT be.able =LOC =TOP
 ‘If you^P can smoke this tobacco of mine that [I] give [you^P] rolled up, [...]’

The constituent order in the example above is Demonstrative — Possessor — Head — Attributive clause. It is important to note that the constituent order Head — Possessor — Attributive clause does not occur in corpus of recorded material. This is in line with the observation elsewhere in the grammar that Possessors always precede the Possessed. The head of the arch NP is *mola* ‘tobacco’. This constituent is modified to the left by a personal pronoun, which is a genitive-marked Possessor, *aŋ=mi* (1s=GEN) ‘my’. The head is modified to the right by the attributive clause. As we argued above, a semantic relationship between the predicate of the attributive clause and the head of the arch NP may be inferred; in this case the relationship is that of UNDERGOER. Since the predicate of the attributive clause can be conceived of as transitive, an Agent can be implied, which, given the context in which the sentence appears, is the same as the genitive-marked constituent, i.e. first person singular. When the attributive clause is pre-head, the genitive-marked constituent always precedes the attributive clause, as we can see in (42).

- arch NP -----
 --AC--
 (42) [[*baba*] =*mi* |*hanti*] =*gaba gam jəm*] =*aw*
 father =GEN divide =ATTR wealth riches =REF
 ‘father’s divided wealth [and] riches’

I have no recorded textual examples of transitive attributive clauses in which the implied Agent is not coreferential with the genitive-marked constituent in the arch NP. This might lead us to believe that the genitive-marked constituent is the Agent

argument of the attributive clause. This would be remarkable, since this Agent is otherwise unmarked in the language. Elicitation shows that it is possible to have arch NPs where the genitive-marked constituent cannot be interpreted as co-referential with the Agent of the attributive clause, namely when this argument is overtly stated. Example (43) is illustrative. In this example we see that the genitive-marked constituent *ama* ‘mother’ functions as a Possessor in an arch NP headed by *taŋka* ‘money’. The attributive clause predicate has one argument, an Agent, viz. the second person singular *naŋ?* ‘you’, which is unmarked for semantic role, as it is everywhere else in the grammar.

- AC -----
- (43) [[*ama*] =*məŋ* |*naŋ?* *saʔkhaw*] =*gaba taŋka*] =*aw hən?* -*phin* =*bo*
 mother =GEN 2s steal =ATTR money =REF give -BACK =IMP
 ‘Give back mother’s money that you have stolen.’

There is another reason why a genitive-marked noun cannot be interpreted as coreferential with the subject of the attributive clause. Genitive-marked nouns also occur in arch NPs with intransitive attributive clauses, in which case it is very easy to see that they are Possessors and not Agents. Example (44) is illustrative (see also (56)). In this example, the horse, *gore*, is the one that runs and not the genitive-marked second person singular *naŋ?*=*məŋ*.

- (44) *naʔa aŋ* =*na*
 2s 1s =DAT
 ----- arch NP -----
 ----- AC -----
 [*naŋ?* =*məŋ* *gore* |*jal* =*na rak -khal*] =*gaba*] =*aw*
 2s =GEN horse run =DAT strong -COMP/SUP =ATTR =REF
hən? -*et* -*ari* =*bo*
 give -CAUS/TRANS -SIMP =IMP
 ‘You just give me your horse that is strongest in running.’ i.e. ‘You just give me your fastest running horse.’

We can conclude that genitive-marked constituents within an arch NP are in fact modifiers to the head and not clausal constituents of the attributive clause. Contextual inference may permit an interpretation where the genitive-marked element is coreferential with an implied Agent of the attributive clause.

The genitive can limit the range of possible interpretations of an arch NP, for instance when the arch NP only has one overtly stated noun in it, which could be interpreted as its head. In (45) we see how the genitive-marked noun *dəkhi* (a person’s name) modifies the ellipsed head of the arch NP. Since *dəkhi* is genitive-marked, it cannot be interpreted as the head.

- arch NP -----
 -AC-
 (45) [*dəkhi =mi* |*bal*| =*gaba*] =*təkəy*
 name =GEN speak =ATTR =LIKE
khaʔsin kadəm =ay reʔeŋ -ca
 slow slow =ADV go.away -NEG
 ‘Like [the words] Dəkhi had spoken, [Bandi] does not go slowly.’
 Impossible interpretation: *‘Like Dəkhi who had spoken...’

The arch NP in (46) is similar to the one in (45), but we see that the only noun in the arch NP below is not genitive-marked. This can engender multiple interpretations, as we can see from the translations. In the first interpretation, *bandi* is the head; in the second, an ellipsed referent is the head. The context from which the example was taken prompts the first interpretation.

- arch NP -----
 ----- AC -----
 (46) [*bandi*_{Agent} |*pay -aŋ*| =*gaba*]¹⁶ =*aw*
 name carry.by.hand -AWAY =ATTR =REF
məkren waʔthok soŋ -phin? =*ay*
 eye bamboo.stick raise -COMPLETELY =ADV
grəŋgrəŋ cay +səm -aydoŋa =no
 name look.at +follow -PROG =QUOT
 Interpretation in the context from which the example was taken: ‘Grəŋgrəŋ is watching the carrying Bandi (alternatively: Bandi who is carrying) with eyes raised on bamboo sticks (i.e. attentively), it is said.’
 Alternative interpretation, not intended in the context of the narrative:
 ‘Grəŋgrəŋ is watching [the one who] Bandi is carrying...’

When there is another animate candidate for head within the arch NP, i.e. if both potential arguments of a transitive attributive clause predicate are expressed and both are animate nouns, we get a situation as in (47). This example shows us an arch NP where the Agent, *phulis* ‘police’, is the head; *mobin* (the phonological representation of an existing person’s name spelt Mobbin), which is the Patient of the attributive clause, is marked as being referential.

- arch NP -----
 ----- AC -----
 (47) [*phulis*_{Agent} | [*mobin*]_{Patient} =*aw tok*| =*ga*] =*aw*
 police name =REF beat =ATTR =REF
 [*aŋ*] *kaʔpet -aydoŋ*
 1s be.angry.with -PROG
 ‘I am angry with the police who beat Mobbin.’

In the example above it would be difficult to perceive the police as modifier of *mobin* (in juxtaposition the first noun can be interpreted as modifying the second) and the most felicitous interpretation is thus for the police to be the head and *mobin* to be the argument of the predicate of the attributive clause.

In (47) both nouns in the arch NP are animate and the Agent is the head of the arch NP. If the Patient is the head, as in (48), it cannot be marked for referentiality, because of the impossibility of heads of arch NPs to be marked in this way (since they are only phrasal constituents and can thus not be referential by themselves, whereas the NP can be), but the Agent can also not be genitive-marked, or it would be a Possessor modifying the head. In example (48), *mobin*, the inferred Patient of the predicate of the attributive clause, is the head of the arch NP and is therefore not marked for semantic role. The head is the left-most phrasal constituent. The Agent of the attributive clause, *phulis* 'police', is unmarked for semantic role, just as Agents in all other clauses, and is positioned after the head, directly in front of the predicate. These are the expected role markings and positions for the head of the arch NP and the argument of any clause.

- arch NP -----
 ----- AC -----
 (48) [*mobin*_{Patient} | [*phulis*]_{Agent} *tok* | =*gaba*] [*ha?*] =*ci mu? -aron*
 name police beat =ATTR ground =LOC stay -PROG
 'Mobbin, who has been beaten by the police, is sitting on the ground.'

6. Headless arch NPs

When the noun that the attributive clause modifies is only implied, the arch NP is headless. The ellipsed noun and any conceivably intended relation to the predicate of the attributive clause must be deduced from the context and the restrictional properties on semantic roles of the predicate of the attributive clause. In most of the recorded cases, the ellipsed head of the arch NP is in an Agent role relationship to the predicate of the attributive clause. Other semantic roles can of course also be implied, of which some are shown in the examples below, where the attributive clauses are underlined.

- Implying a Location noun:
 ----- arch NP -----
 (49) *phaynan* [|*rupek mu?* | =*gaba*] =*ci =do tøy ganay*
 always frog stay =ATTR =LOC =TOP water exist
 'At [the place where] a frog stays, is always water.'
 Incorrect interpretation in the context of the story this example is taken from: *'On the sitting frog is always water.'

Implying an Agent noun with transitive attributive clause predicate:

----- arch NP -----

- (50) [*i* =*aw bal*] =*gaba*] =*e derus ar marak*
 this =REF tell =ATTR =CTOP Derus R Marak
 ‘The one who tells this [is] Derus R Marak.’

Implying a Patient noun:

--- arch NP ---

- (51) *i =an* [*bal*] =*gaba*] =*aw jam -et -ari -naka*
 this =FC/ID speak =ATTR =REF finish -CAUS/TRANS -SIMP -IFT
 ‘This, which [I] told, [I] will now just make it come to an end.’

Implying an Attributant¹⁷ noun:

--- arch NP ---

- (52) *jal -aŋ =ay =məŋ kənsaŋ =do* [*jan?*] =*gaba*] =*məŋ*
 run.away -AWAY =ADV =SEQ after =TOP be.far =ATTR =GEN
ətəkəy ol -ruk -ok =no
 like.this speak -RC -PERF =QUOT
 ‘After having run away, from [a place which is] far, [they] spoke to each other like this, it is said.’

Headless arch NPs are the most frequently attested form in the collected fieldwork data, followed closely by post-head attributive clauses, while both of these types greatly outnumber pre-head attributive clauses in the language.¹⁸

Sometimes a construction can be truly ambiguous between a headless or headed arch NP, even in context, as in (53), repeated from (39). In this example the noun *morot* ‘person’ can be seen as the head of the arch NP, as in translation (a), or as the Patient argument of the verb *soʔot* ‘to kill’ in a headless arch NP where an agentive head is implied, as in translation (b). The third possibility, that *morot* ‘person’ is the head of the arch NP but no Agent is implied, is not felicitous in the context of the utterance.

- (53) *morot soʔot =gaba =aw gobormen soʔot -siga -ni*
 person kill =ATTR =REF government kill -ALT -FUT
 a. ‘A person who kills, the government will kill in turn.’
 b. ‘[A person] who kills persons, the government will kill in turn.’
 c. *‘A killed person, the government will kill in turn’

7. Lexicalised nominalisations

There are constructions that look like headless arch NPs, but without any implied noun that could have been ellipsed. These constructions can be interpreted as lexicalised nominalisations. As lexicalisations, verb-plus-*gaba*(*ba*) constructions have a fixed, unpredictable meaning and the verb seems to have lost most of its predicative properties, i.e. no lexicalisation has been attested with an adverbial modifier or expressing aspect or modality, although some do seem to have retained an argument. Here we see that although verbs in attributive clauses are full-fledged predicates, they are not in lexicalisations, which is precisely what one would expect.

Nominalisations with the attributive morpheme ⟨*gaba* ~ *ga*⟩ (ATTR) can be participant or abstract nominals, body parts, objects, artefacts, locations or persons. Examples of lexicalised nominalised verbs with the attributive morpheme ⟨*gaba* ~ *ga*⟩ (ATTR) are listed in Table 4. Since the morpheme attaches to the verbal stem and not to a whole clause, has scope only over the verb and derives a lexical noun, we can say that the attributive morpheme functions as a suffix instead of an enclitic.

Not all verbs carrying the attributive morpheme can be interpreted as lexicalised nominalisations. The construction *thəy=gaba* (die=ATTR), for instance, cannot be interpreted as ‘death’, but only as ‘the one who died’. To obtain a deverbal noun meaning ‘death’ the factitive+genitive construction has to be used, viz. *thəy-wa-mi* (die-FACT-GEN) ‘death’.

Table 4. Examples of nominalised and lexicalised attributivised verbs

Lexical item	Gloss of parts	Meaning
<i>məkca-gaba</i>	fancy-ATTR	‘sweetheart, someone you fancy’
<i>khəm-gaba</i>	marry-ATTR	‘spouse’
<i>cicu-gaba</i>	blister-ATTR	‘a blister’
<i>nanthay-gaba</i>	swell-ATTR	‘abscess’
<i>rin-gaba</i>	keep.as.domestic.animal-ATTR	‘fishery’
<i>kəŋ-gaba</i>	make.noise-ATTR	‘sound’
<i>okgənaŋ-gaba</i>	pregnant-ATTR	‘pregnancy’
<i>haʔbacəŋ-gaba</i>	begin-ATTR	‘beginning’
<i>tak-sak-gaba</i>	do-APPROPRIATELY-ATTR	‘help’
<i>khele-gaba</i>	play-ATTR	‘game’
<i>saʔ-gaba</i>	eat-ATTR	‘food’
<i>rəŋ-gaba</i>	drink-ATTR	‘drink’
<i>bas neŋ+tak-gaba</i>	bus rest+do-ATTR	‘bus stop’

Sometimes verbs marked with the attributive morpheme occur in what Genetti et al. (2008:108) term compound noun-verb nominalisations, e.g. *bas neŋtakgaba* ‘bus stop’. This expression consists of an actor noun *bas* ‘bus’ and the nominalised compound verb *neŋ+tak* (rest+do), which is the head of the compound. It is the context that has to indicate whether a verb carrying the morpheme ⟨*gaba ~ ga*⟩ (ATTR) has to be interpreted as a lexicalisation with a specific meaning or as a headless arch NP; structurally the two are the same. Thus, whether *saʔgaba* must be interpreted as a lexicalisation meaning ‘food’ or as a headless noun phrase meaning ‘X which is eaten’ or ‘X which eats’ depends on the contextual environment. The relationship between headless arch NPs and nominalisations is very similar to the relationship Genetti et al. (2008) describe between relative clause constructions and derivational nominalisation in Dolakha Newar, where headless relative clauses can also be analysed as nominalisations. Genetti et al. state that “[s]uch structural ambiguities pave the way for a reanalysis of function” (2008 107–8). This is exactly what happens in Atong.

One example has been recorded of a construction where the verb has to be interpreted as nominalised but still seems to take an adjunct: a dative-marked one. The meaning of *khaʔgal=gaba* (love=ATTR), in example (54), denotes the abstract notion ‘love’ and is therefore an abstract nominalisation. The nominalised verb is the head of the NP, but the noun *naŋʔ* ‘you’ is dative marked just like other NPs referring to the object of affection (the one loved) if the verb would be in a main clause, e.g. (55).

- (54) *o came [aŋ =mi naŋʔ =na khaʔgal -gaba] =aw*
 interj sweetheart 1s =GEN 2s =DAT love -ATTR =REF
naŋʔ =mi khaʔthoŋ =ci daŋ -et =na
 2s =GEN heart =LOC enter -CAUS/TRANS =DAT
manʔ -pha -ni =ma
 be.able -IN.ADDITION -FUT =Q
 ‘O sweetheart, will you also be able to insert my love for you into your heart?’

- (55) *aŋ naŋʔ =na khaʔgal -a*
 1s 2s =DAT love -CUST
 ‘I love you.’

In the case of an attributive clause with the verb *khaʔgal-* ‘to love’ as a predicate, the head of the arch NP, the one loved, would not be case marked, as we can see below.

- (56) *[[aŋ jaŋgi] =mi |khaʔgal| =gaba baju]*
 1s life =GEN love =ATTR friend
 ‘the friend of my life whom I love’

The construction in (54) looks like what Genetti et al. (2008:99) define as an action nominalisation, i.e. a construction which contains “in addition to a noun derived from a verb, one or more reflexes of a proposition or predicate”. In the case of example (54), the nominalised verb would still have an adjunct, i.e. *naŋ=na* (2S=DAT).

8. The morpheme ⟨-gaba ~ -ga⟩ as attributive morpheme on other word classes

An important reason to call noun-modifying clauses in Atong “attributive clauses” and not “relative clauses” is that the same morpheme ⟨gaba ~ ga⟩ is used as attributiviser for some word classes. The morpheme ⟨-gaba ~ -ga⟩ as attributive suffix occurs on (i) numerals, (ii) interrogatives and (iii) the time word *dakaŋ* ‘before, in the past’. The reason that the morpheme ⟨-gaba ~ -ga⟩ is analysed as a suffix in this section and not as enclitic, is that the morpheme only has scope over the lexical item itself and not over a phrase or clause. We will now look at examples of this suffix on the three different word classes mentioned above.

i. Numerals

Suffixed to numerals, the morpheme ⟨-gaba ~ -ga⟩ (ATTR) derives ordinal numbers e.g. *bəɾəy* ‘four’ → *bəɾəy-ga* (four-ATTR) ‘fourth’. Ordinal numbers are adnominal modifiers. This means that the suffix ⟨-gaba ~ -ga⟩ (ATTR) has an attributivising function, transforming a numeral into an entity that can modify nouns. Example (57) is illustrative. In this example the modifying numeral *sa-gaba* (one-ATTR) is not ordinal, but participates in the biclausal contrastive construction *sagaba... sagaba...* ‘one... the other...’.

- (57) [*soŋ sa -gaba*] =aw *soŋmoŋ məŋ -wa =nowa*
 village one -ATTR =REF Songmong call.a.name -FACT =QUOT
 [*soŋ sa -gaba*] =aw *soŋgadal məŋ -wa =nowa*
 village one -ATTR =REF Songgadal call.a.name -FACT =QUOT
 One village was called Songmong, the other village was called Songgadal.

Interestingly, ordinal numerals in Mongsen Ao (Coupe 2007) are derived from cardinal numerals using the bisyllabic morpheme *-p̄p̄aʔ*. The origin and meaning of the first syllable of this suffix are unknown, however, “the final syllable *p̄aʔ* of the ordinal suffix is highly likely to be the ubiquitous general nominaliser” (idem: 277) which is also used to form relative clauses (idem: 219ff).

ii. The bound interrogative formant

The suffix ⟨-gaba ~ -ga⟩ (ATTR) can be combined with the bound interrogative formant morpheme ⟨bi⟩ (QF) to form the interrogative *bi-gaba ~ bi-ga* ‘which?’, e.g. in (58). The suffix has an attributivising function in this case, just as with the numerals.

- (58) *bi-ga =aw biskut raʔ -ni =ma*¹⁹
 QF-ATTR=REF biscuit buy-FUT=Q
 Which biscuits shall [I] buy?

iii. The time word *dakaŋ*

The time word *dakaŋ* ‘before, in the past’, but not *kəŋsaŋ* ‘after’, has frequently been attested with the suffix ⟨-gaba ~ -ga⟩ (ATTR). The lexeme *dakaŋ-gaba* (before-ATTR) means ‘the first’, and can thus function attributively to nouns, as we can see in example (59).

- (59) [*dakaŋ-gaba boba*] *alu kayʔ =ay =məŋ*
 before-ATTR fool potatoes plant =ADV =SEQ
 ‘The first fool, having planted his potatoes [...]’

9. Conclusion

In this paper I have shown that attributive clauses in Atong are adnominal modifiers rather than nominalisations that can function as head of an NP. The attributive morpheme ⟨gaba ~ ga⟩ (ATTR), which signals their function, also has an attributivising function on other word classes. In cases where an arch NP seems headless, but no head can be retrieved from the context, the arch NP can be interpreted as a lexicalised nominalisation. I have introduced the term *arch NP* to refer to a noun phrase that contains an attributive clause, so that we have a separate term for the noun-modifying clause and the noun-phrase in which it occurs, which is not the case with the term *relative clause*. Headless arch NPs can, in the right context, be interpreted as lexicalised nominalisations with a specific, often unpredictable meaning. We have seen that lexicalised verbs have lost most of their verbal properties while in attributive clauses verbs function as full-fledged predicates, taking arguments, adverbial modifiers and even aspect and modality marking.

I have demonstrated that it would be a mistake to analyse a *common argument* for attributive constructions in Atong, since the head of the arch NP does not take part in the argument structure of the attributive clause predicate or in that of the matrix clause predicate. This is most apparent in those cases where heads of arch NPs are not marked for semantic role in relation to the predicate of the attributive clause in situations where this marking would be compulsory in

main clauses. Nonetheless, we have seen that a semantic relationship can still be inferred between the predicate of the attributive clause and the head of the arch NP. I have also argued that, just as in languages like Japanese and Korean, it is not necessary to analyse a gap to account for any missing argument in the attributive clause in Atong. The language makes extensive use of zero anaphora and there are no grammatical restrictions on the omission of any NP from a clause. Therefore it is impossible to prove the obligatory conceptualisation of any NP, stated or implied, as core argument. Theoretically, the number of possible gaps in a clause can be driven up *ad infinitum*, since we can imagine ever more participants, none of which are, however, grammaticalised as syntactically obligatory. The interpretation of any arch NP depends on the constituents of the NP as well as the context in which the arch NP occurs, and is not determined by the requirement to fill a missing argument position in the attributive clause. Moreover, I have demonstrated that there are cases in which a gap could not even be analysed, because there is no argument slot left for one to occur in the argument structure of the predicate of the attributive clause.

I confirm what Matsumoto and Comrie have already demonstrated in a monograph and various articles, namely that there are important differences between 'European' type relative clauses and 'Asian' attributive clauses. Whereas European relative clause constructions have to be interpreted according to syntactic constraints, the meaning of an arch NP with an attributive clause only becomes apparent in the context in which it is uttered.

Abbreviations

[...]	phrase, inferred words (in translations)	IMP	imperative
...	clause	INDEF	indefinite
AC	attributive clause	IRR	irrealis
ADD	additive	LIKE	similative
ADV	adverbial	LOC	locative
ALT	alternative	MOB	mobilitative
ATTR	attributive	NEG	negative
CAUS/TRANS	causative/transitive	P	plural (also used in superscript to disambiguate English glosses)
CLF	classifier	PERF	perfective aspect
COMP/SUP	comparative/superlative	PPP	personal pronoun plural
CUST	customary aspect	PROG	progressive
DAT	dative	Q	interrogative

DCL	declarative	QF	interrogative formant
FACT	factive	QUOT	quotative
FC	focus	RC	reciprocal
FC/ID	focus/identifier	REF	referential
FUT	future	SEQ	sequential
GEN	genitive	SIMP	simplicative
IE.be	identity/equation copula	TOP	topic
IFT	imperative future		

Notes

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1. Whereas attributive clauses are a separate type of noun-modifying construction for Comrie (1998 a), for Lehmann (1984:44) relative clauses and attributive clauses are synonyms. Post (2008:357–8), who does not refer to Comrie (1998 a) or Lehmann (1984), uses the term attributive clause to describe a clausal adnominal modifier in Thai consisting of a “gapped relative clause-like structure, directly postposed to the modified noun”, as opposed to *relative clauses*, which are “marked” clausal adnominal modifiers, also containing a gap “but linked to the head noun by a dedicated relativiser”.

2. Keenan (1985), for example, tells the reader that a restrictive relative clause (RC) is an NP (see page 141) and that such an NP consists of an optional determiner, an omissible “common noun” also called the “domain noun” and a restrictive clause (S_{rel}) that modifies the domain noun (see p.142). The domain noun is said to be the “head” of the RC (see p.145). It is confusing to have the same name or abbreviation ((restrictive) relative clause (RC), restrictive clause (S_{rel})) for the NP in which the modified noun occurs and the clause that modifies it. Regretfully, Keenan’s terminology has had many reverberations in later literature and so the confusion has been perpetuated.

3. In my PhD thesis (van Breugel 2008 b) I still use the syntactic terms S, A and O, but I have since come to realize that the best way to describe the language is from a semantic point of view.

4. Atong is not as underspecified for syntactic categories as, for example, Riau Indonesian (Gil 2007), where the words for chicken, *ayam*, and eat, *makan*, belong to the same word class and where more interpretations of the combination *ayam makan* are possible than in Atong. Atong distinguishes a fairly large array of different word classes (see van Breugel 2008 b), two of which are verbs and nouns.

5. Inherently locational nouns are normally not marked with the mobilative morpheme (<=saŋ) (MOB) when they function as Direction, e.g. *nəgəl rezeŋ-ni* (market go.away-FUT) ‘[I] will go to the market’.

6. Type 2 adjectives can modify nouns non-predicatively and as adnominal modifier within an NP, unlike Type 1 adjectives, which need to be attributivised to be able to function as adnominal

modifiers. Sohn (1999: 314) explicitly states this behaviour of adjectives in Korean, only he calls it *relativisation*.

7. The form of the factitive morpheme is ⟨-a⟩ after /m/ or /p/ and ⟨-wa⟩ elsewhere.
8. (Andrews 2007: 2006) calls an NP whose reference is being restricted by a relative clause the “NP_{mat}”, because this NP occurs in the matrix clause. I find this term to be unsatisfactory. An NP containing a noun-modifying clause can occur embedded as a modifier in a higher NP (e.g. (9)), which could in that case be the matrix NP, and we would still have terminological confusion.
9. The arch NP *phalgəm cunḡaba* could also be translated into English as ‘an/the eagle which is big’. The attributive-clause construction differs from a clause in which *cunḡ-* ‘to be big’ is a main-clause predicate, e.g. *phalgəm cunḡ-a* (eagle be.big-CUST), which means ‘an/the eagle is big’.
10. The word *morot* ‘human, person’ is an Indic loan, cf. Hindi *mard* /mard/ ‘man, male’.
11. It seems almost redundant to state that even in languages that have relative clause constructions of the pronoun-retention type (see Comrie 1981: 140–1 and Creissels 2006: 211–3) there is no “common argument” in the sense that the matrix clause and the arch NP syntactically “share” one. In this construction, neither the pronoun within the noun-modifying clause nor the head of the arch NP are clausal constituents of the matrix clause. Examples of the pronoun-retention type can be found in non-standard English (see also Comrie 1981: 147), e.g. *he used [a word that I don’t know where he got it from]*_{ARCH NP}. In this example, *word* is the head of the arch NP in which *that I don’t know where he got it from* is the modifying clause. The pronoun *it*, which is the “retained” pronoun within the noun-modifying clause, is coreferential with the head of the arch NP, but neither the head nor the pronoun are a constituent of the matrix clause.
12. LaPolla (1993: 14, example 2.17m) describes a similar structure in Chinese, where a noun is modified by two preceding clauses in relation to which this noun fulfils two different semantic roles.
13. English Translation: “[...] we call the NP that consists of the head and the relative clause a higher NP. This, i.e. every NP that has a relative clause as constituent, is called a relative construction. The construction is endocentric; the noun modified by the relative clause is the nucleus, the relative clause is its satellite. A satellite is, in semantic terms, a modifier. A satellite that modifies a nucleus and therefore participates in the construction of a higher (complex) NP is an attribute. Therefore relative clauses are attributes, and are also called attributive clauses.”
14. Here my analysis also concurs with Lehmann (1984: 45) who says: “Eine Subkonstituente eines [Nominalsyntaxma]s — hier der Nukleus des [Relativsatz]es in Gestalt des Bezugsnomens — kann keine eigene syntaktische Funktion im Matrixsatz haben.” English translation: “A sub-constituent of an NP — in this case the nucleus of the relative clause in the form of the modified head — cannot have a syntactic function of its own in the matrix clause.”
15. Sohn (1999), who describes noun-modifying constructions in Korean in detail, distinguishes four subtypes of *relative clause* “depending on how the modifying clause and the head are related” (p. 310). In his analysis, only *relative clauses proper* contain a gap, while the other types do not, although they are otherwise structurally the same.

16. The attributive clause in example (46) is non-restrictive; the head of the arch NP has unique reference, as there is only one Bandi in the context. This example, then, shows that non-restrictive and restrictive attributive clauses have the same structure.
17. An Attributant is the semantic microrole of the argument of a Type 1 adjectival predicate that is attributed the quality referred to by this predicate. As was mentioned before, Type 1 adjectives are intransitive, stative verbs denoting a quality or property concept.
18. Out of the 317 arch NPs counted for this article, 146 are headless (46%), 120 are post-head (38%), and 51 are pre-head (16%). I did not count elicited and incomprehensible examples.
19. The prosody of example (58) is that of a normal clause without any pause or hesitation.

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