

The syntax of nouns and noun phrases in dated pre-Angkorian inscriptions*

Chhany SAK-HUMPHRY
University of Hawaii at Manoa

1. Introduction

1.1 Background

Any diachronic analysis of Khmer must be based on the extensive corpus of inscriptions.¹ According to Jacob (1960: 351; 1965: 143; *1991), conventionally recognized periods in the development of Khmer are 'Old Khmer', 'Middle Khmer', and 'Modern Khmer'. The Old Khmer period includes the pre-Angkorian Khmer of the earliest inscriptions to A.D. 802 and Angkorian Khmer, attested from 802 to 1431 (the fall of Angkor). 'Middle Khmer' covers the period of transition from Old to Modern Khmer, from approximately 1431 to 1800, and marks the culmination of various complex changes in both the phonology and grammar. 'Modern Khmer' is considered to extend from about 1800 to the present. All three periods are, of course, historical fictions, or rather historical-linguistic constructs, in the sense that there were no abrupt demarcations between one stage of the language and the next.

1.2 Previous analyses of pre-Angkorian syntax

Whilst a number of scholars have contributed significantly to—and indeed laid the foundations of—the historical study of Old Khmer, there are so far no syntactic analyses of Old Khmer based on a generative framework.² Jenner

* This work is a revision of my master's thesis in linguistics at the University of Hawaii, Manoa.

I would like to express my sincere gratitude to Professor Stanley Starosta, who is the founder of lexcase dependency grammar. He introduced me to this theory and has provided continuous support and scholarly comments on this manuscript. My warmhearted appreciation also goes to Professor Philip N. Jenner, who taught me Old Khmer, and who has supported and encouraged me to pursue a career in linguistics. I also would like to thank Gary Y. Takeuchi for his careful review and editing of the English text.

¹ The Founan period is a historical period. The inscriptions from this period are in Sanskrit; the vernacular language of Founan is unknown.

² Cœdes 1955; Jacob 1960, 1963, 1970; Dupont 1953; Jacques 1976; Jenner 1980a, 1980b, 1981; Jenner and Pou 1980–81; Pou 1970a, 1970b; Long Seam 1973.

published a series of articles on Old Khmer syntax, and we possess now a diachronic survey of Khmer function words by Jacob.³

Texts of most of the pre-Angkorian inscriptions can be found in Cœdes' eight-volume *Inscriptions du Cambodge* (1937–66) or scattered throughout the *Bulletin de l'École Française d'Extrême-Orient* [BEFEO]

1.3 Primary sources

The pre-Angkorian corpus can be divided into dated and undated inscriptions.⁴ The data used in this investigation of the syntax of nouns and noun phrases of the pre-Angkorian dated inscriptions are not drawn from the original texts, but rather from the transliterated versions found in Jenner's (1983–84) unpublished work. Sixty-six texts have been taken from two volumes of Jenner's work and are listed in Appendix A.

Working with data from an ancient language imposes serious limitations on the analysis. The compilation and interpretation of the texts, the primary data for the analysis, is itself a major analytical task. As Jenner put it: "The linguistic archæologist must first consider the orthographic shape of each item; he must then translate that shape into phonological terms, analyze its morphology, determine its syntactic function, identify it with later or cognate forms, and eventually set up a hypothesis regarding its meaning" (Jenner *CPAK* 1981–82: iv). All this work must be done without a co-operative native-speaking consultant whose intuition can be accessed to confirm or discount a particular hypothesis.

1.4 Goals and objective of this study

The purpose of this study is twofold: (1) to apply lexicase dependency theory to the analysis of certain grammatical aspects of nouns and noun phrases of dated pre-Angkorian inscriptions to determine whether the grammatical properties of these inscriptions can be insightfully described and illuminated within this formal and explicit theory, and (2) to identify any areas in which the data prove to be incompatible with the claims made by the theory, thereby possibly necessitating a modification of the theory itself.⁵ It is to be expected that in the absence of a native-speaking consultant, a narrowly constrained universal linguistic theory will provide assistance in choosing among alternative hypotheses about the correct analysis of particular constructions. At the same time, data from a natural text from another non-Indo-European language will be helpful in developing a theory that can seriously claim to be universal.

³ The latter was not available to me at the time of writing; Jenner's contribution to the London Shorto Festschrift concerns Angkorian Khmer. Pou contributed a survey of some basic OKhm. constructions to this journal (1980).

⁴ Jenner says that "the dated inscriptions are those which contain their own internal dating" (Jenner 1982).

⁵ See Tesnière 1959 for a general reference on dependency grammar and Starosta 1988 for an introduction to the lexicase implementation of this theory.

1.5 Methodology

The corpus of this study is composed of the texts presented in Philip N. Jenner's unpublished work, "*Textes Vieux Khmers faisant partie du Corpus des Inscriptions du pays khmer*" (*Tome 1.1 et 2, Tome 1.3, 1983–4*). I began analyzing the texts of the earliest of the dated inscriptions, which had already been segmented into their constituent sentences by Jenner's translations of each text in French. Each example cited in this thesis is labeled with a number identifying its location in these texts. Each word in the texts was checked against Jenner's pre-Angkorian lexicon and labeled in terms of the categories made available by the lexicase theory, and an explicit lexicase dependency representation was drawn for each sentence. These representations conform to the constraints imposed by the lexicase theory. The purpose of this task was not to check on Jenner's translation of the text, but rather to investigate the structure of the sentences of the pre-Angkorian dated inscriptions within the lexicase framework. However, this study indicates places where the requirements of the theory suggested alternative translations or analyses that differ from those proposed by Jenner.

1.6 The Lexicase model

This investigation of nouns and noun phrases of pre-Angkorian dated inscriptions is formulated within the lexicase dependency grammar framework developed over the last twenty years, primarily by Stanley Starosta and was carried out in accordance with the principles and constraints of this theory.

A lexicase grammar is a grammar of words. It has no deep structure, no transformations, and no phrase structure rules. It represents the structure of a sentence solely in terms of a network of dependency relations obtaining among pairs of words in the sentence. Co-reference relationships are described in terms of coindexing words. The syntactic and semantic properties of words are characterized in terms of contextual and non-contextual features of lexical entries (Starosta [forthcoming]). This theory attempts to capture cross-linguistic generalizations, and makes a claim about human language in general.

A lexicase grammar is a set of generalizations about the internal compositions, external distributions, and lexical relationships of the words in the language (Starosta 1988: 2). The relationship among lexicase rules can be represented in terms of the flow chart in Appendix B.

The analysis presented here does not include the set of formalized rules that would be required by a complete grammar. It does, however, provide fully specified dependency representations of a broad range of example sentences relevant to a description of the nouns and noun phrases of the Old Khmer dated inscriptions. For each representation, the functional label of each binary dependency relationship is specified in terms of an indexed contextual feature in the matrix of the regent term of the relation. Such labels include case relations [CRs], case forms [CFs], predication [prdc], or finiteness [fint] of the dependents.

This study is divided into the following sections:

Section 1—Introduction

Section 2—Overview of Dated pre-Angkorian syntax

Section 3—Noun phrases with a single noun and no dependents

Section 4—Noun phrases with a single noun and one / multiple dependents

Section 5—Multiple dependent constructions; possessive, locative, equative and prepositional phrases

Section 6—Conclusion

Appendices

References

2. Overview of dated pre-Angkorian syntax

The focus of this analysis is on noun and noun phrase structures. Because so many examples of the constructions in the data presented here are non-sentential, and since this is an accurate reflection of the language of Old Khmer inscriptions, a brief description of the overall structure of sentence patterns of the dated pre-Angkorian inscriptions is needed to set the foundation of this work. This overall description provides a sketch of the general syntactic properties of the Old Khmer language, many of which are relevant to a description of the constructions which depend on N[oun]s in N[oun]P[hrase] structures. In this study, the term ‘Old Khmer’ [OKhm.] is used to mean ‘Old Khmer dated pre-Angkorian’.

2.1 Basic sentence patterns

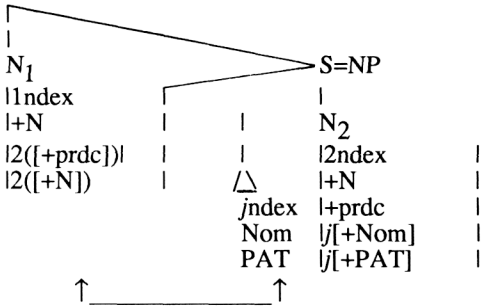
A basic sentence structure has only one clause. A sentence is any phrase that has a word marked [+prdc] as its lexical head, that is, a verb, or a prdc-inflected preposition or a noun. The focus of this section is on the analysis of sentences with and without verbs. The outline of this presentation is: (1) a brief description of verbless sentences and their subcategorization, (2) verbal sentences, and (3) conjoined sentences.

2.1.1 Verbless sentences

This section examines sentences without verbs as the head of the constructions. In principle, lexicase allows two types of verbless sentence constructions: (1) the nominal predicate where the regent noun N_2 is the head of the construction, bears the feature [+prdc], and has N_1 as its nominative patient dependent; and (2) the predicate prepositional phrase where the preposition P_1 itself bears the [+prdc] feature.

The Old Khmer pre-Angkorian dated inscriptions have only one example of an independent clause with a nominal predicate NP (see example 8 of section 4.2.2.1) and no examples of prepositional predicate phrases as described above. Instead, most of the verbless sentences occur as relative clauses in NPs composed minimally of two nouns, a regent noun N_1 and a nominal dependent N_2 , which is

the head of a verbless relative clause and which bears the feature [+prdc]. As is the case in relative clauses generally, the non-verbal relative clause lacks one of its NPs, in this case its subject (+Nom, PAT); this missing NP, in turn, is interpreted as coreferential with the regent N₁. The significance of this nominal predicate is that the noun N₂ is a relative clause of the NP-predicate clause pattern described in general terms above. A schematic representation of this pattern is shown below. A more detailed analysis of this nominal predicate relative clause construction can be found in section 4.4.4.



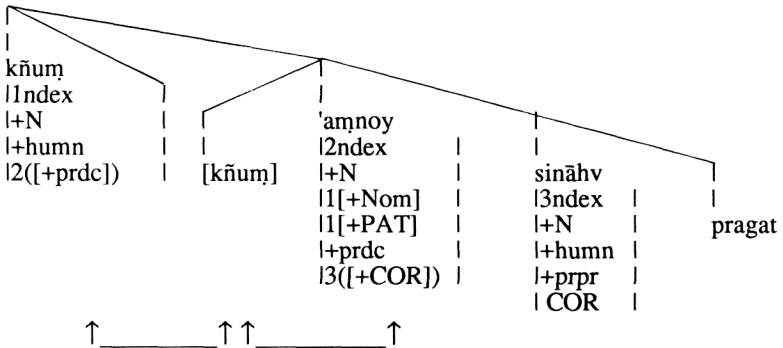
Nominal predicate in the relative clause construction.

Here [S_{[NP N] N₂[+prdc]] is the form which the verbless relative clause would be expected to take if it were not functioning as an attribute of a regent N₁. The implied subject N[jindex] is missing and is coreferential with the regent N₁. The relative clause has the predicate N₂ as head, and N₂ is the dependent of N₁.}

The following is an additional schematic example:

1. (K.54:12)

kñum 'amnoy sināhv pragat
 slaves gift hermit pious
 'Slaves the gift of pious hermit'

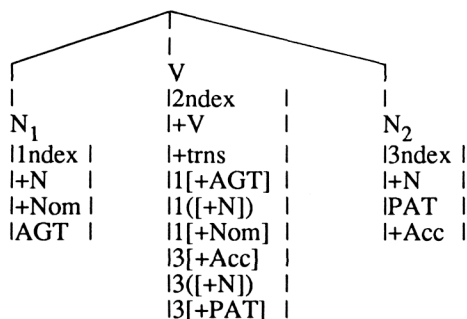


The missing but implied [*kñum*] is the nominative patient of the regent predicate noun '*aṃnoy*' and is interpreted as coreferential with the regent NP *kñum*; in turn *kñum* is the regent of the relative clause '*aṃnoy sināhv pragat*'.

2.1.2 Verbal Sentences

A verbal sentence has as its construction head a verb that bears the [+prdc] predicate lexical feature. Due to the nature of the data, some of the verbal S types are only attested in relative clause constructions. The word order of the S constituents is subject–verb–object. The verb is subcategorized into transitive and intransitive types. Old Khmer transitive verbal sentences will be examined next.

2.1.2.1 Transitive verbal sentences

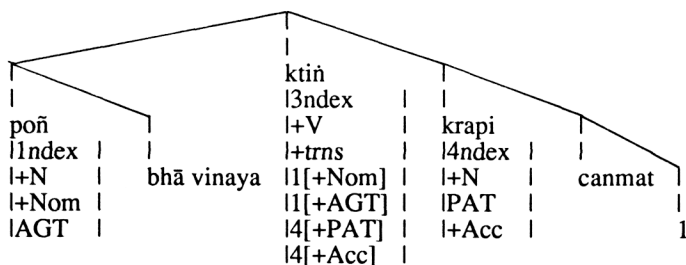


In the transitive clause the V [+trns] is the head of the construction. It implies an Agent subject N₁ indicated by the features [1([+N]), 1[+AGT], 1[+Nom]], and a Patient object N₂ indicated by the features [3([+N]), 3[+PAT], 3[+Acc]]. This is an example of an Old Khmer transitive clause:

2. (K.493:19)

poñ bhā vinaya ktiñ krapī canmat 1
 Sir Bhā Vinaya owe carabao uncastrated 1

'Sir Bhā Vinaya owed one uncastrated carabao'



In the lexibase dependency representation, a vertical line indicates the head of the construction, the slanted lines indicate the dependents which are written two steps below the level of the head word to its right or its left. Each constituent word is indexed to establish the dependency link to one other word. The verb *ktiñ* [+trns] is the head of the clause, the NP *poñ bhā vinaya* is to the left, and the NP *krapi canmat l* is to the right.

The grammatical functions of this tree are shown by linking the contextual features on the head of V to the index of the dependent attributes. The [1[+Nom]] and [1[+AGT]] imply that the verb *ktiñ* expects an [1index] dependent to be marked by the ‘nominative’ case form [+Nom], and interprets it as bearing an ‘agent’ case relation [AGT]. The [4[+PAT]] and [4[+Acc]] imply that the head word *ktiñ* requires its [4index] dependent to bear an ‘accusative’ case form [+Acc], and interprets it as having a ‘patient’ case relation [PAT]. Thus the transitive verb *ktiñ* identifies *poñ*[1index] as its subject [AGT, +Nom] and *krapi*[4index] as its object [PAT, +Acc]. The subject *poñ* is a title [+titl] noun and has the proper [+prpr] noun *bhā vinaya* as its predicate [+prdc] dependent attribute. The patient object *krapi* is the regent of the predicate classifier [+clsf] noun *canmat*, and the predicate number noun 1.

The following shows that the grammatical representations of this verbal sentence are stated not in terms of layers of constituents, but in terms of pairwise dependency relations between a dominant regent *ktiñ* and dependent adjuncts *poñ* and *krapi*; regent *poñ*, adjunct *bhā vinaya*; regent *krapi* and adjunct *canmat*; and regent *canmat* and adjunct number 1.

The transitive verbs can be subcategorized in terms of whether they take locational or non–locational dependents.

2.1.2.1.1 *Non–locational transitive verbal sentence*

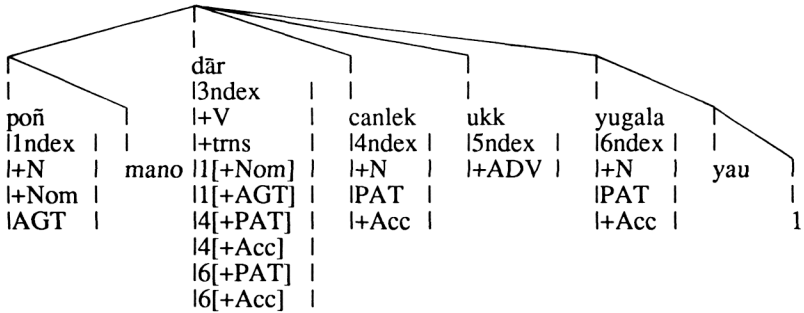
Previous examples have demonstrated where verbs act as case markers and expect [+AGT, +Nom], [+PAT, +Acc] and even [+LOC] as dependents. In this section the focus is on verbs that do not require LOC dependents.

Example 3 shows the non–locational transitive verb *dar* with an adverb *ukk* as its dependent.

3. (K79:19)

Poñ	mano	dār	canlek	ukk	yugala	yau	1
Sir	Mano	demand	cloth	in addition	double	unit	1

‘Sir Mano also demanded [a certain amount of] cloth in addition, [namely] 1 yau of double [cloth].’



In this sentence, the transitive verb *dār* ‘demand’ is the head of the clause. It has *poñ* as its nominative agent [+Nom, AGT], *canlek* as its accusative patient [+Acc, PAT], *ukk* as its adverb, and *yugala* as its other accusative patient [+Acc, PAT]. This construction is interesting because the transitive verb *dār* has two consecutive accusative patients, in violation of the lexibase 1/Sent constraint. Usually *yugala* (the second accusative patient) is the predicate dependent of the word *canlek* (the first accusative patient), but because of the presence of the adverb, it must be analyzed as a separate constituent in this example.

2.1.2.1.2 Locational transitive verbal sentences

In Old Khmer there are some ditransitive verbs like *oy* : ‘to give’, *jāhv* : ‘to acquire’, *dār* : ‘to demand’, and *jon* : ‘to offer’, which bear the semantic features [+goal] or [+source] and obligatorily expect one of their dependents to bear the [+lctn] case form and [+LOC] case relation as complement (allowing for zero anaphora).

The tree in example 4 illustrates a locational transitive sentence where the verb *oy* [+goal] implies a LOC dependent.

In example 4, the transitive verb *oy* [+goal] implies a LOC dependent, has a coordinate NP with the conjunction *dañ* as its dependent attribute.

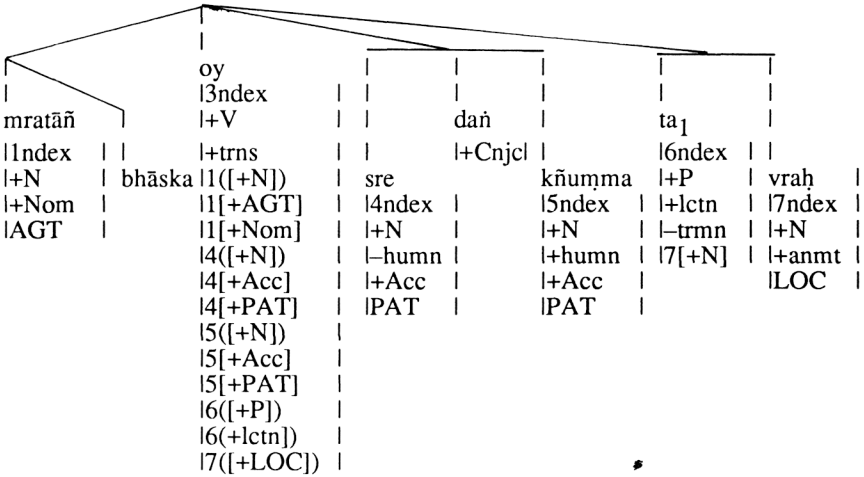
4. (K.18:3)

mratañ bhāskarapāla oy sre dañ kñumma
 Lord Bhāskarapāla give ricefield and slaves

ta⁶ vraḥ kamratān 'añ śrīsankaranārāyana
 to V. K. 'Añ Śrīsankaranarayana

‘The Lord Bhāskarapāla gave the ricefield and slaves to the V. K. ‘A. Śrīsankaranarayana.’

⁶ Jenner interprets *ta* as “subordinating conjunction, normally optional.” (Jenner, personal communication, February 17, 1992)



In this example the verb *oy*, the head of the construction, has three dependents, the nominative NP *mratāñ bhāskarapāla* [+Nom, AGT], the coordinate accusative NP *sre dañ kñuṃma*, with *dañ* as the coordinating conjunction [+Cnjl], and the locational PP *ta₁ vrah*, where the noun *vrah* bears the LOC complement to the verb *oy*.

2.1.2.2 *Intransitive verbal sentences*

In the intransitive clause construction, the V as head of the clause, requires only a patient subject [PAT, +Nom]. The intransitive verbs are subcategorized into the copula and non-copula classes.

2.1.2.2.1 *Intransitive sentences with copula verbs*

A copula is an intransitive verb that takes a patient subject and a predicate noun, stative verb, or predicative PP as its complement (Starosta 1991). Here we are looking at the nominal predicate dependent of the copula verb *gui*.⁷

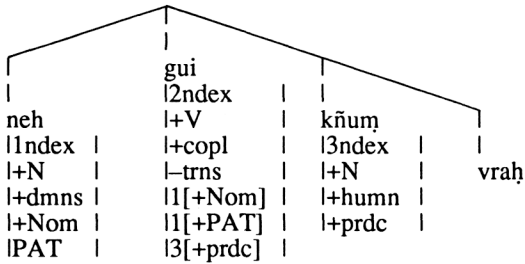
In example 5, the copula verb *gui* equates the patient subject *neh*, which is a demonstrative noun, to its human predicate object *kñuṃ vrah*.

⁷ Jenner interprets *gi* as “a weak demonstrative pronoun commonly standing before a zero copula so that its proper function became blurred by the Middle Khmer period.” (Jenner, personal communication, February 17, 1992)

5. (K.388C:7)

neh gui kñum vrah
 these be slaves Vrah

‘These are the slaves of the Vrah.’



The copula verb *gui* [+copl] has a demonstrative noun *neh* [+dmns] as patient subject and a predicate NP *kñum* [+humn] as dependent attribute.

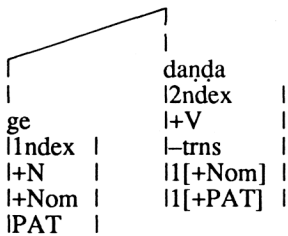
2.1.2.2.2 Intransitive clauses with non-copula verbs

The intransitive non-copula verb is examined next. The intransitive non-copula verb *daᅇᅇa* has a nominative patient pronoun *ge*.

6. (K.49:17)

ge daᅇᅇa
 they be punished

‘They shall be punished.’



The intransitive verb *daᅇᅇa* is the head of the clause where the pronoun *ge* [+Nom, PAT] is its subject.

This type of construction can be further subcategorized into verbs requiring or not requiring locational nouns as dependent attributes.

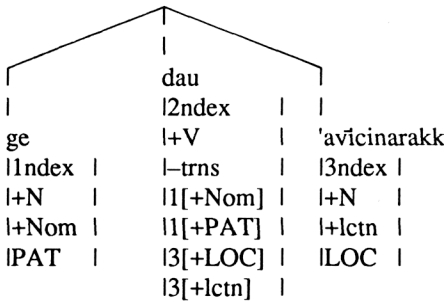
2.1.2.2.2.1 *Intransitive verb with location noun as dependent*

An example of an intransitive verb with a locational noun dependent is shown in example 7.

7. (K.561:21)

ge dau 'avīcinarakk
 they go 'Avīcinarakk

‘They go to the ‘Avīcinarakk.’



This intransitive clause has the movement verb *dau* as the head, the pronoun *ge* as subject, and the locational noun *'avīcinarakk* as LOC complement. The intransitive verb *dau* requires a LOC complement as dependent. Its LOC complement can be either a [+lctn] location noun, as in this case, or a relator noun as demonstrated in the following section.

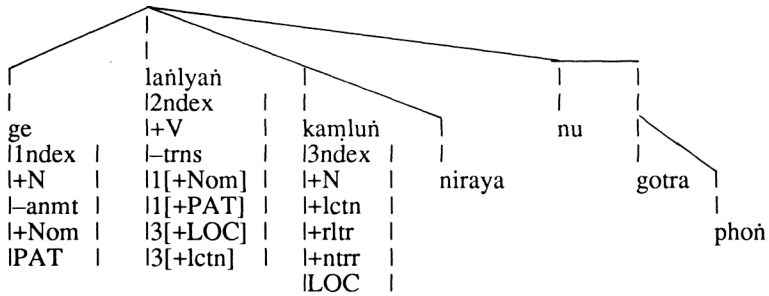
2.1.2.2.2.2 *Intransitive verb with relator noun as dependent*

Example 8 shows the intransitive verb *lanlyan* ‘bur’ is the head of the clause. In this section the relator noun is the dependent of a verb in the sentence.

8. (K.341N:11–2)

ge lanlyañ kamluñ niraya nu gotra phon
 they burn in Hell with kinsmen all

‘They [shall] burn in Hell together with their kinsmen.’



Here the relator noun *kaṃluñ* is the dependent attribute of the intransitive verb *lañlyañ*. *Kaṃluñ* has the localistic feature [+ntrr], which characterizes the specific kind of relationship associated between the regent verb *lañlyañ*. ‘burn’ and the dependent noun *niraya* ‘hell’.

2.2 Conjoined sentences

This study assumes that full sentences in Old Khmer could be conjoined by using the coordinate conjunctions *doñ* or *dañ* or *dron* or *drañ* [+Cnjc]. Following lexicase dependency grammar principles, the coordinate conjunction is the lexical head of the conjoined constructions, not the S or the NP. These conjunctions presumably were able to join two complete independent sentences. So far, probably because of the nature of the texts, examples of full sentences joined with a coordinate conjunction have not been found. As stated previously, the absence of such examples is an accurate reflection of the language of the inscriptions, in that most of them are in the form of NPs. Coordinate NPs with and without a conjunction are discussed in section 4.1.

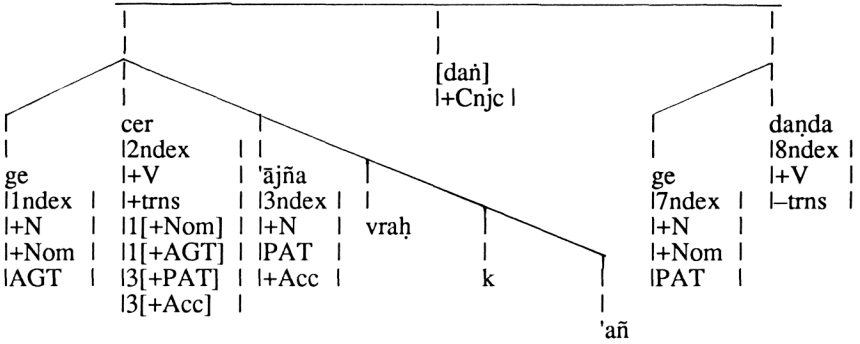
2.2.1 Fulls with *doñ/dañ* gap

Example 9 illustrates a full sentence with the missing coordinate conjunction *doñ/dañ*.

9. (K.49:17)

ge	cer	'ājña	vrah	kaṃratāñ	'añ	ge	daṅḍa
they	disobey	order	V.	K.	'A.	they	be punished

‘They [thereby] disobey the order of the V.K.‘A. [and] they shall be punished.’



Example 9 is potentially two independent sentences. The verb *cer* [+V, +trns] is the head of the transitive verbal sentence where *ge* [+Nom, AGT] is the nominative agent, and *'ājña* [+Acc, PAT], is the accusative patient. The intransitive verbal sentence *ge daṇḍa* has *ge* [+Nom, PAT] as the nominative patient of the intransitive verb *daṇḍa*.

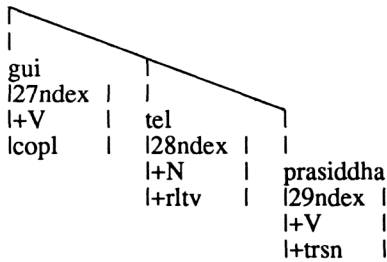
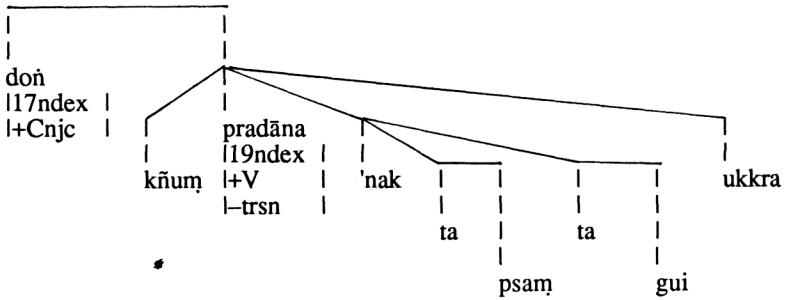
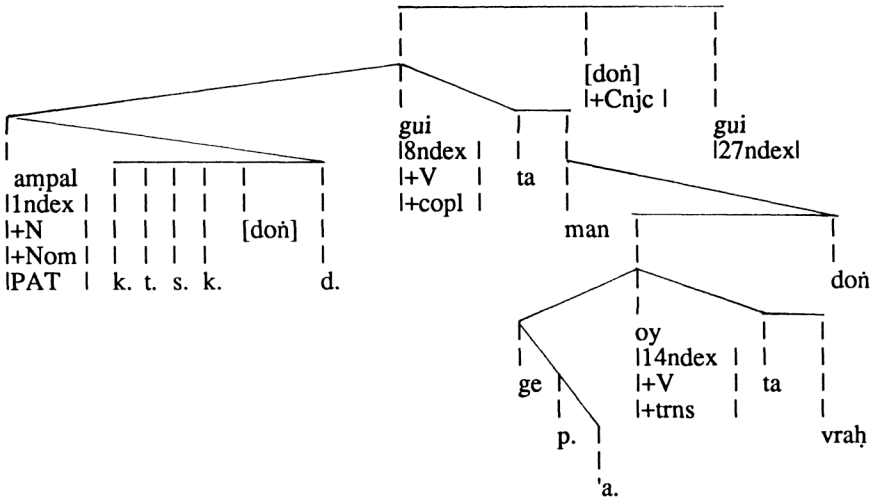
These sentences can be considered coordinate rather than independent sentences because both share the same subject *ge*, as it is this *ge* that does not obey the order of the V.K.'A. These two verbal sentences are analyzed here as being conjoined with the missing coordinate conjunction [*doñ/dañ*]. This is necessary because of the lexicase dependency grammar requirement that every phrase, including sentences, have a word that acts as the head of the whole construction. This is not a very intuitively satisfying analysis, but no alternative is made available by the theory at this point in time.

Before closing this section on an overview of Dated pre-Angkorian Inscriptions syntax, I would like to illustrate a complex verbal sentence from the data.

10. (K.49:13)

'ampal	kñuṃ	tmur	krapī	sre	damriṅ			
all	slaves	cattle	buffaloes	ricefields	plantation			
gui	ta	man	ge	pu caḥ	'añ	oy	ta	vraḥ
be	of	what	they	Elder Lord	Our	give	to	Vrah
doṅ	kñuṃ	pradāna	'nak	ta	psam			
and	slaves	to be given	by people	who	contribute			
ta	gui	ukkra	gui	tel	prasiddha			
that	who	be	also	be	which	convey		

'All [these] slaves, cattle, buffaloes, ricefields and plantations—those things which Our Elder Lords have given to the shining one—as well as the slaves presented by persons also contributing to [this pious work] are conveyed.



The copula verb *gui* [8ndex] is the main verb of this sentence and has *'ampal* as its subject and *ta₄ man* as its predicate. The noun *'ampal* is the regent of the predicate relative clauses *kñum*, *tmur*, *krapi*, *sre*, *damriñ*. The predicate PP *ta₄ man* has *ta₄*[9ndex] as complementizer of the relative clauses *ge pu caḥ 'añ oy ta₁ vrah doñ kñum pradāna 'nak ta₄ psam ta₄ gui ukkra*. The coordinate

conjunction *don* [17ndex] conjoins the verbal relative clauses *ge pu caḥ 'añ oy taḥ vraḥ* and *kñuṃ pradāna 'nak taḥ psam taḥ gui ukkra*. If the verb *gui* [8ndex] and the *gui* [27ndex] are conjoined with the missing conjunction [*doḥ*] then the head of the S is the missing [*doḥ*].

The predicate relative clauses with *'ampal* as the regent list all gifts that are involved in the transaction. The second relative clause with *taḥ man* as regent gives the description and information about the source of these gifts and its recipients.

3. Noun phrases with a single noun and no dependents

A noun phrase is headed by a noun. In nominal attribution, the head noun may have zero, one, or more dependent modifiers.

The purpose here is to analyze the structure of nominal attribution in noun phrases, by establishing: (1) the grammatical classification of Pre–Angkorian nouns, (2) the classification of noun dependency relationships, and (3) the multiple noun dependency relationships.

In this section noun phrases without reference to their dependent attributes will be examined. Nouns in Old Khmer, as in many other Southeast Asian languages, do not require a determiner as attributes.

Based on syntactic function and morphological criteria, eight pre–Angkorian noun classes can be distinguished.

Except for relative nouns, nouns that can occur without attributes are: pronouns, demonstrative nouns, common nouns, number nouns, classifier nouns, and proper nouns.

Noun phrase modifiers are optional in all seven types of head nouns; they also depend upon the context of the sentences. In this section, analysis focuses only on zero–attributes. Cases where attributions are allowed in the structure are analyzed in Chapters IV and V.

3.1 *Pronouns*

It is not clear whether pronouns constitute a syntactically definable subclass of nouns in Old Khmer pre–Angkorian language. In this thesis the term ‘pronoun’ is used as a notional label to refer to a small set of nouns used as substitutes for other nouns, whose reference is set or constant for a given discourse. They are marked by the feature [+prnn] here.

Following the criteria of X–bar syntax, pronouns in lexibase are identified as a subset of nouns since they are lexical heads of NP. All personal pronouns such as *'añ* ‘I, me, my, our’, and *ge* ‘he, she, they’ are lexically definite, and bear the features [+N, +prnn, +dfnt]. They will be examined first.

3.1.1 'aṅ and ge as personal pronouns

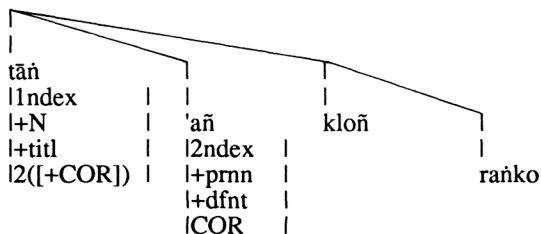
The personal pronouns in Old Khmer are: 'aṅ for first person and ge for third person. These pronouns have many syntactical functions based upon the dependency relationship to their regent as shown in the following examples.

In examples 1 and 2, the pronouns 'aṅ and ge function as the COR 'possessor' to their regent nouns.

1. (K.44:8)

tān	'aṅ	kloñ	raṅko
retainer	our	Commissioner	Rice
+N	COR		

'our retainer the Commissioner of Rice'



2. (K.451S:3)

jmaḥ	ge
names	3rd
+N	COR

'their names'

In examples 3 and 4, 'aṅ and ge function as the Locus LOC complement to their regents respectively.

3. (K.54:16)

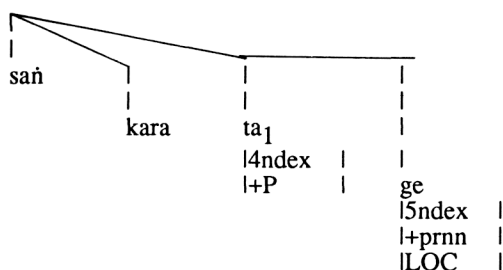
spid dik	tān	prājñāsen	'ay	ta ₁	'aṅ
libation	retainer	Prājñāsen	at	to	me
+N					LOC

'the libation of the retainer Prajñāsen to me'

4. (K.493:23)

nu	man	gui	sañ	kara	ta ₁	ge
with	which	be	pay back	tax	to	him
			+V			LOC

'with which to pay back the tax to him'

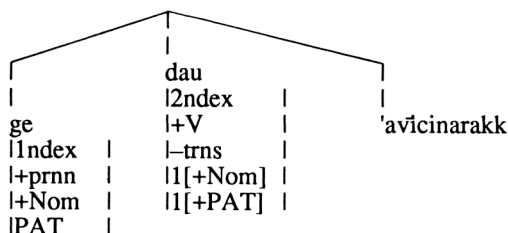


In example 5, the pronoun *ge* functions as nominative patient to the directional verb *dau*.

5. (K.561:21)

ge *dau* 'avīcinarakk
 they go Avīci Hell

'they [shall] go to Avīci Hell'



In summary, in the no–dependent construction, the personal pronoun '*añ*' or *ge* can be the dependent attribute of a noun, verb, or preposition. *Ge* or '*añ*' can function as the subject or Agent, object or Patient or the localistic LOC complement of a verb. *Ge* or '*añ*' can bear [+Nom] or [+Acc] case forms, or [COR], [PAT] or [LOC] case relations to its regent.

The pronouns '*añ*' or *ge* can be singular or plural and are not dependent upon the syntactic relationship to their regent, but this plurality is based upon the semantics of the regent and the context.

3.1.2 *Derived pronouns*

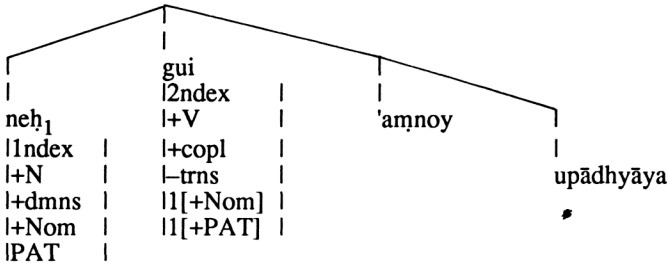
Observation indicates that the language of the pre–Angkorian period has so few true pronouns that titles and kinship terms seem to do double duty. Based upon the position of these nouns, which are attributes of the head NPs, they can be identified as derived pronouns, analyzed as carrying the features [+titl, +prnn, +dfnt]. Derived pronouns are title nouns that have no dependents and always bear the Correspondent case relation optionally allowed by their regents. The differences between a title noun and a derived pronoun are that a title can be: (1)

In example 8, *neh₁* is the nominative subject [+Nom, PAT] of the copula verb *gi ~ gui*.

8. (K.388C:15)

neh₁ gui 'amnoy upādhyāya
 these be gift Upādhyāya

‘these are the gifts of Upādhyāya’



3.3 Common nouns

The following examples show the various syntactic relationship between the common nouns (with no–attributes) and their regents.

In example 9, *kantai* functions as predicate to its regent noun *kñum*. In example 10, *kñum* functions as accusative patient to its regent verb *oy*. In example 11, *pitr* functions as LOC to its regent verb *oy*.

9. (K.18:6)

kñum kantai ku kmer 1 kon 4
 slave female female slave Kmer 1 child 4
 +N +prdc

‘the female slaves: one female slave Kmer [and] four children’

10. (K.600:1)

poñ uy oy kñum ai ta kpoñ kamratāñ 'añ
 Sir Uy give slaves at to Kpoñ K 'A
 +V +Acc
 PAT

‘Sir Uy gave slaves to the Kpoñ K. ‘A’

11. (K.561:21)

kñum	man	poñ	candrānna	oy	ta	piṭṭ
slaves	whom	Sir	Candrānna	give	to	dead
				+V		LOC

‘the slaves whom Sir Candrānna has given to the dead’

3.4 *Number nouns*

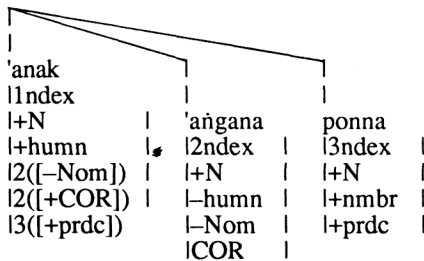
Number nouns can be predicate dependent attributes of countable nouns and classifier nouns. The analysis of number nouns is presented in section 4.4.4.3.

Example 12 shows the number noun *ponna* functions as predicate to its regent ‘*anak*, and the common noun ‘*angana*’ functions as COR to the same regent.

12. (K.1004:8)

'anak	'aṅgana	ponna
people	court	four

‘four people of the court’



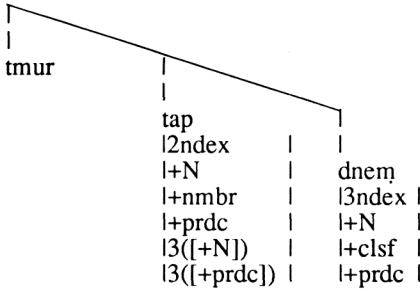
3.5 *Classifier nouns*

For Old Khmer, it is an unusual pattern for a number noun to be the regent of a regular classifier noun. However, this is the way they appear in data (detail see section 4.4.4.3).

13. (K.388C:5)

tmur	tap	dnem
cow	10	yoke

‘10 yokes of cows’



The regular classifier *dnem* [+clsf] usually has a number noun as its dependent attribute. However, in this example the number *tap* is the head of the NP and the regent of the classifier noun *dnem*. *Dnem* has no dependent.

3.6 Proper nouns

Proper nouns in Old Khmer Dated Pre–Angkorian are divided into locational nouns and non–locational nouns. Locational proper nouns consist of place names as well as temporal nouns, i.e., the days of the week and months of the year. These nouns, which are marked with the localistic location feature [+lctn] and can serve as immediate LOC complements of words requiring [+lctn] dependents are discussed in section 4.4.2 of Chapter IV.

The next section focuses only on non–locational proper nouns. Non–locational proper nouns can be subcategorized into deity or non–deity proper nouns. The non–deity proper nouns are subdivided into human or non–human proper nouns. Deity proper nouns are names of the *Vrah*, human proper nouns are everyone’s names, including slaves, and non–human proper nouns are names of institutions, administrations, or things.

In general, most proper nouns are predicate attributes of the regent title nouns or kinship nouns. In some cases, when the title is mentioned once at the beginning of a paragraph, the proper name is not preceded by the title for the second or third references.

Example 14 has a human proper noun *jñanaprakasa* [+prdc] as dependent of the regent title noun *poñ*.

14. (K.561:13–14)

satra	poñ	jñanaprakasa
oblation	Sir	Jñanaprakasa
	+N	+prdc

‘the oblation of Sir Jñanarakasa’

The category of compound nouns is defined morphologically rather than syntactically. A detailed investigation of pre–Angkorian word formation has not

been done; however nouns tentatively identified during the course of the analysis are described in this section.

Examples 15 and 16 show that the compound nouns *'nak sre* and *tnai vraḥ* have different syntactic functions [COR] and [PAT], respectively, in relation to their regents nouns.

15. (K.600E:3)

jmaḥ	'nak	sre
names	ricefield	workers
+N	COR	

'names of the ricefield workers'

16. (K.557/600N:3)

ta ₄	cuḥ	tnai	vraḥ
that which	keep record	days	holy
	+V		+Acc
			PAT

'that which keeps record of the holy days'

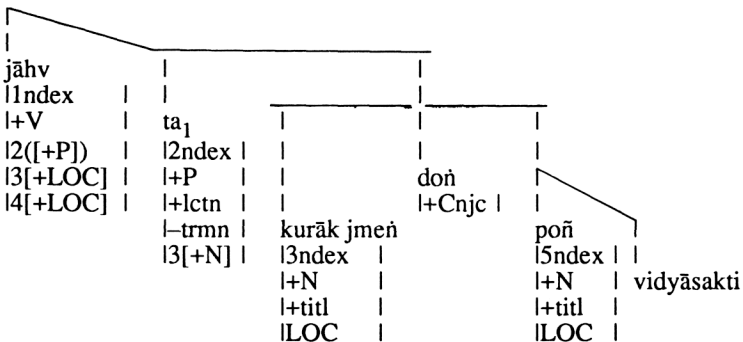
In example 17, the title compound noun *kurāk jmeñ* functions as the LOC complement to its regent verb *jāhv*.

17. (K.943:20)

sre	phalada	man	jāhv	ta
ricefield	Phalada	which [he]	acquire	from

kurāk	jmeñ	doñ	poñ	vidyāsakti
lieutenant	governor	and	Sir	Vidyasakti

The Phalada ricefield, which [he] acquired from the lieutenant governor and Sir Vidyāsakti



Examples 1-17 show that pronouns, demonstrative nouns, common nouns, number nouns, classifier nouns, and proper nouns can all occur without attributes and have various syntactic functions: case forms (Acc, Nom, or lctn) and either case relations (AGT, PAT, LOC, COR), or predicate (prdc), based upon the dependency relationship with their regents.

4. Noun phrases with a single noun and one / multiple dependents

4.1 Introduction

In lexicase representation each phrase must have a lexical head. The lexical head of the construction is written under a vertical line, and the dependents are written below the level of the head word on a line slanted either to the right or to the left. Based on my analysis of Old Khmer as a language with no determiner or adjective, and on the structure of Old Khmer noun phrases, the slant is always to the right; that is, Old Khmer noun phrases are right-branching. This is true of other syntactic constructions as well, with the exception of subjects of verbs, which slant to the left. The grammatical functions in a lexicase representation are shown by chaining a contextual feature on the head to the index of the appropriate dependent. A classification of the dependent modifier of nouns is presented first. Next, types of relationships that can obtain between a head noun and a dependent modifier are examined and described.

4.1.1 Classification of NP-Internal dependency relationships

A noun phrase can have as its immediate dependent modifier a sentence, a prepositional phrase, or another NP. These three categories are illustrated in the following tree diagrams:

Diagram #1



Diagram #2

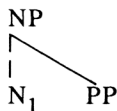
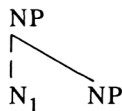


Diagram #3

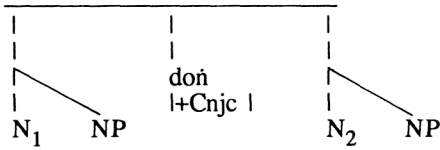


Noun phrases with Ss as dependent attributes (diagram #1) are examined in section 4.2. Noun phrases with PPs as dependent attributes (diagram #2) are investigated in section 4.3. Noun phrases with other NPs as dependent attributes (diagram #3) are studied in section 4.4.

4.1.2 Conjoined noun phrases

Noun phrases can be conjoined by using the coordinate conjunctions *doni*, *dañ*, *dron* or *drañ*, as shown in diagram #4.

Diagram #4



In diagram #4, in accordance with strict dependency principles, the coordinate conjunction *doñ* is the lexical head, not N_1 or N_2 .

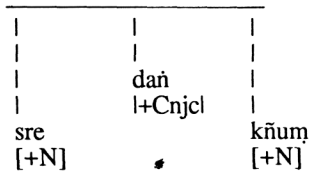
4.1.2.1 Conjoined noun phrases with an overt coordinating conjunction

Example 1 shows a coordinate conjunction NP with *dañ* as its lexical head.

1. (K.18:21)

sre dañ kñum
ricefield and slaves

‘ricefields and slaves’

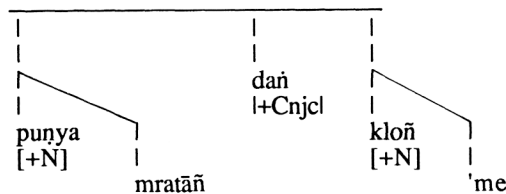


Example 2 illustrates two possessive noun phrases *punya mratāñ* and *kloñ me* conjoined with the coordinate conjunction *dañ* as their lexical head.

2. (K.18:23)

punya mratāñ dañ kloñ 'me
pious work lord and his mother

‘the pious work of the lord and his mother the baroness’

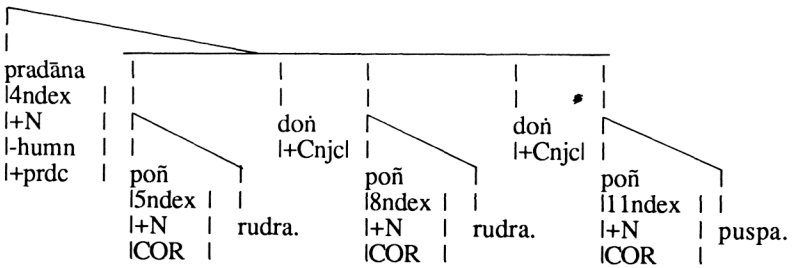


Example 3 exhibits two coordinate conjunctions *doñ*. The *doñ*'s are the regents of the conjoined title possessive noun phrases *poñ rudrabhava*, *poñ rudrantakila*, and *poñ puspananda*.

3. (K.30:6-7)

sre 'āy travañ vo pradāna poñ rudrabhava doñ poñ
 ricefields at Travañ Vo gift Sir Rudrabhava and Sir
 rudrantakila doñ poñ puspananda
 Rudrantakila and Sir Puspananda

'ricefields at Travañ Vo the gift of Sir Rudrabhava and Sir Rudrantakila and Sir Puspananda'



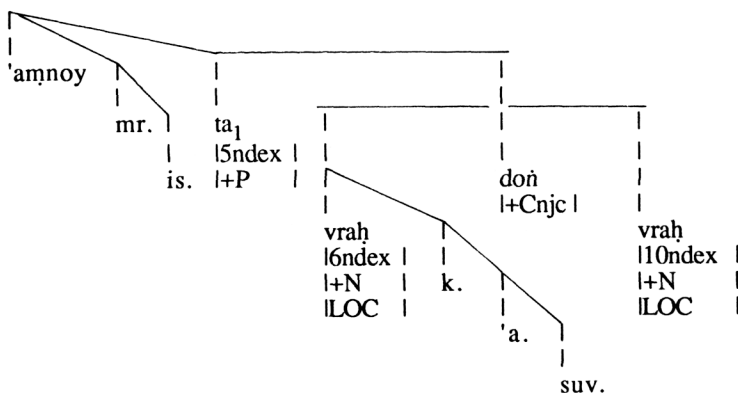
Example 4 shows NP coordination within the PP exocentric construction. The coordinate conjunction *doñ* is the lexical regent of the Locus noun *vraḥ*.

4. (k127:14)

kñum 'amnoy mratañ iśvaravindu ta vraḥ kaṃratañ 'añ
 slaves gift Lord Iśvaravindu to V. K. 'A.

suvarṇaliṅga doñ vraḥ kaṃratañ 'añ maṇiśiva
 Suvarṇaliṅga and V. K 'A Maṇiśiva

'slaves the gift of the Lord Iśvaravindu to V. K.'A. Suvarṇaliṅga and V. K. 'A Maṇiśiva'



In this example, the preposition ta_1 is the lexical head of the exocentric construction, and the coordinate conjunction $doñ$ is its co-lexical head. $Doñ$, in turn, is the regent of the locational noun phrases $vrah\ kamratāñ\ 'añ\ suvarṇalinga$ and $vrah\ kamratāñ\ 'añ\ mañiśiva$.

4.1.2.2 Conjoined noun phrases with a gapped coordinating conjunction

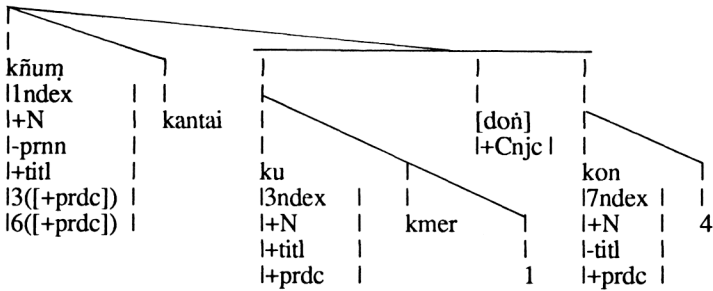
Lexicase, as a type of dependency grammar, requires that every phrase have a lexical head. Phrases such as the one in example 5 below are apparent counterexamples to this claim, and the only way to reconcile these data with the theory is to assume that the coordinating conjunction in each case has been gapped by a performance rule. The $[doñ]$ or $[dañ]$ indicates the assumed position of the gapped conjunction. This is not a very intuitively satisfying analysis and is only adopted in this work pending supporting evidence from a parallel construction in some language with living speakers to consult, or the discovery of an improved dependency analysis for coordinate constructions.

Example 5 illustrates a coordinate predicate NP with a missing conjunction $[doñ]$.

5. (K.18:6)

kñuṃ	kantai	ku	kmer	1	kon	4
slave	female	female slave	Kmer	1	child	4

'the female slaves: 1 female slave Kmer (and) 4 children'

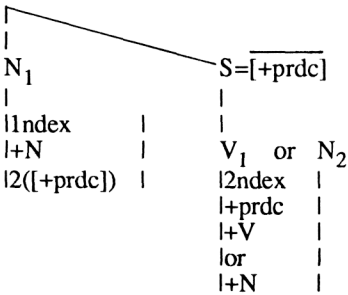


The regent noun *kñum* has two dependent predicate noun phrases, the predicate NP *kantai* and a predicate coordinate NP *ku kmer l kon 4*, with a missing conjunction [*doñ*].

4.2 Sentences as dependents of noun phrases

Noun phrases with S as a dependent attribute are examined and analyzed here to show the syntactic dependency relationships between the regent N and the dependent S. As described in section 2.1.1 (verbless sentences), this type of dependency relationship is analyzed as a relative clause. A summary of the types of relative clause constructions found in Old Khmer follows.

Diagram #5: Relative clause



The regent noun N_1 allows a prdc-bar dependent, which means that the lexical head of this dependent constituent must bear the lexical feature [+prdc]. The prdc-bar dependent can be either a Verb-bar [+V, +prdc]', which is referred to here as a verbal relative clause, or a Noun-bar [+N, +prdc]', which is called a nominal relative clause.

The tree representations of direct relative clauses are shown in diagrams #6 and #7.

marked as coreferential with the relative noun N_2 by the Relative Clause Chaining Rule (RCCR). N_2 , in turn, is marked as coreferential with a missing NP in the domain of $S=[+V]'$ by the same rule.

In diagram #9, the complementizer preposition ta_4 or nu is the regent of $S=[+V]'$. The preposition ta_4 or nu plus $S=[+V]'$ form an exocentric construction, with ta_4 or nu as lexical head and V_1 as secondary lexical head.

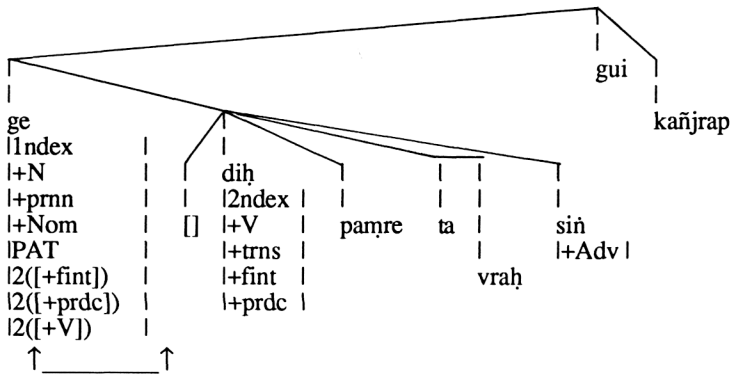
Diagram #10 is a composite structure with the complementizer preposition ta_4 or nu introducing an indirect relative clause construction headed by the relative noun man or tel , which is the regent of $S=[+V]'$. The prepositional phrase composed of ta_4 or nu plus $S=[+V]'$ also forms an exocentric construction with ta_4 or nu as the lexical head and the relative noun man or tel as secondary lexical head. Man or tel is the regent of the $S=[+V]'$. Examples of these constructions are presented in the following two sections.

4.2.1 Direct verbal relative clauses

6. (K.561:34)

ge	dih	pamre	ta	vrah	sih		
they	perform	service	to	vrah	at	present	
gui	kañjrap		ta man	varta	nā	vrah	kaṃmratañ 'añ
be	prisoners of war		who	dwell	place	V.	K. 'A
śrī	kailāseśvara						
Śrī	Kailāseśvara						

'They who perform service to the shining one [Śri Khandaliṅga] at present are prisoners of war who dwell [at the sanctuary of] the shining one Our High Lord Sri Kailāseśvara.'

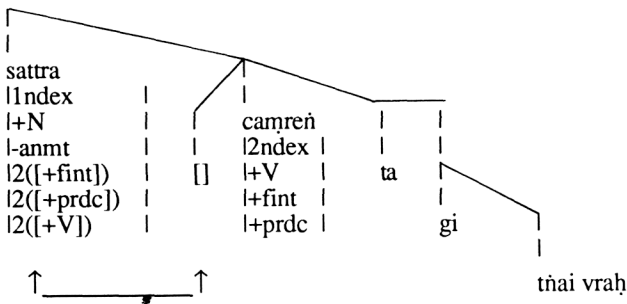


The copula verb *gui* has *ge* as Patient subject and *kañjrap* as predicate noun. The Patient subject *ge*, in turn, is the head of a verbal relative clause *ge diḥ pamre ta vraḥ siñ*. The transitive verb *diḥ* has *pamre* as its direct object and a missing subject interpreted as coreferential with *ge*. In a formalized analysis, this type of coreference relationship would be shown by the Relative Clause Chaining Rule (RCCR). In this investigation, however the [] in the tree diagram is used instead as a convenient way of indicating the position of the missing NP. It is not part of a formal lexicase representation and is not an empty category in the Chomskyan sense. The arrows are used to point out the coreference relationship between a word and an implied word within the constructions.

7 (K.451N:10)

sattra camreñ ta gi tñai vraḥ
 oblation to be made which be days holy

‘the oblation to be made on the holy days’



In example 7, the noun *sattra* is the regent of the relative clause *camreñ ta gi tñai vraḥ*. The coreference between *sattra* and the missing subject of the verb *camreñ* would be shown by RCCR.

4.2.2 Indirect verbal relative clauses

As shown in diagrams #8, #9 and #10, the indirect relative clause construction is subcategorized into three types based on the dependency relationships between the regent N_1 and dependent S, outlined as: (1) relative nouns as regents of S, (2) prepositions as regents of S, and (3) prepositions and relative nouns as (indirect and direct) regents of S.

4.2.2.1 *Relative nouns as regents of s*

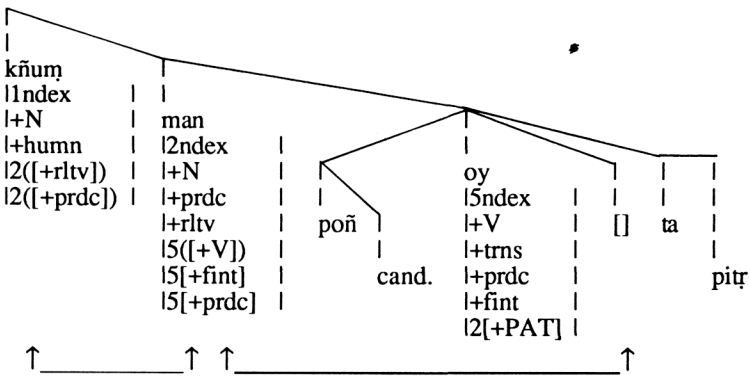
The dependency relationship between the regent *man* and *tel* and its dependent attribute S is briefly examined in this section. A detailed analysis of the relative nouns *man* and *tel* is provided in section 4.4.4.5.3.

In example 8, *man* is coreferential both with the head noun NP and with the missing object of the verbal relative clause, which thereby establishes a link of coreferentiality between the head noun and the missing argument of the verb.

8. (K.561:27-28)

kñuṃ man poñ candrāṇṇa oy ta piṭṭ
 slave whom Sir Candrāṇṇa give to dead

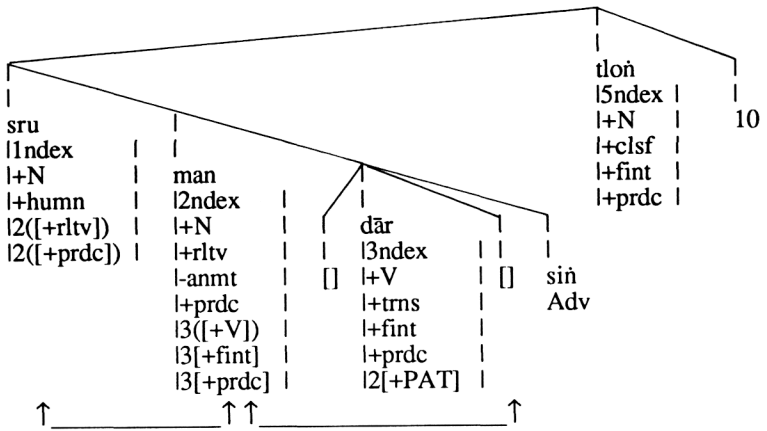
‘slaves whom Sir Candrāṇṇa gave to the Dead’



9. (K.79:10)

dmār gui poñ śveta sru man dār siñ tloñ 10
 claimant be Sir Śveta paddy which demanded also tloñ 10

‘The claimant is Sir Sveta. Paddy which [he] also demanded:10 tloñ.’



Example 9 presents a free [+N, +prdc] sentence with *tloñ* as the head of the sentence. The relative noun *man* is interpreted as its missing object of the lower clause and, in addition, *man* is coreferential with its antecedent in the higher clause.

4.2.2.2 Preposition *ta₄* as regent of *S=[+V]*'

As discussed under diagram #9, section 4.2, the PP [*ta₄* +V] is in an exocentric construction with *ta₄* [+P, +xtns] as the lexical head and [+V] as the secondary lexical head. *Ta₄* functions as the complementizer of S, as shown example 10.

10. (K.127:20)

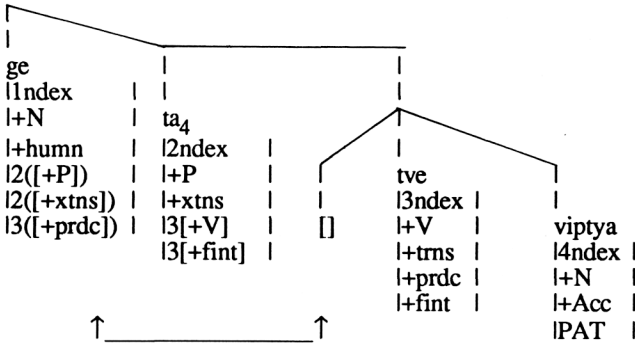
ge ta tve vitya gi
they who commit vandalism are

saptapitā
fathers and forefathers to the seventh generation

saptamatā
mothers and grandmothers to the seventh generation

pañcamaharau ravanarakāḥ patañti
Five Great Raurava Hells fall

'They who commit vandalism on these premises, [their] fathers and mothers to the seventh generation [shall] fall into the Five Great Rauva Hells.'



In example 11, *ge* is the regent of the preposition *ta₄* [+xtns]. The preposition *ta₄* [+xtns] functions as the complementizer of its regent *ge* and also acts a regent of the verbs *vom* and *dap* respectively.

11 (K.154A:16)

<i>ge</i>	<i>ta</i>	<i>vom</i>	<i>oy</i>	<i>gi</i>	<i>ge</i>	<i>ta</i>	<i>dap</i>
they	who	do not	give	be	they	who	practice sorcery
+N	+P	+V			+N	+P	+V
	+xtns	+fint				+xtns	+fint.

‘They who do not give are they who practice sorcery.’

4.2.2.3 *Preposition and noun as regents of S=[+V]'*

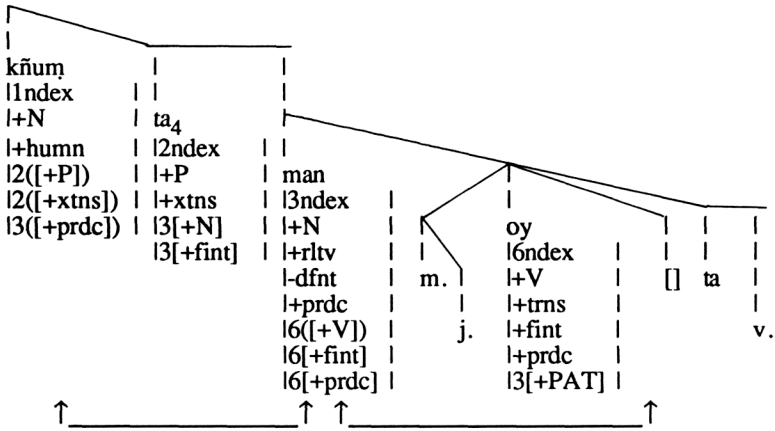
There are three combinations of a preposition plus a relative noun, *ta man*, *ta tel* (see diagram #10, section 4.2, and detailed analysis in section 4.3.1.3.3), and *nu man*, which function as the (indirect and direct) regents of a verbal relative clause.

In example 12, the preposition *ta₄* commands the relative noun *man* which, in turn, bears the lexical feature [+prdc] required by the regent NP. *Man* functions as the missing object the lower clause S=[+V]’.

12. (K.561:30)

<i>kñum</i>	<i>ta</i>	<i>man</i>	<i>mratāñ</i>	<i>jānavin</i>	<i>oy</i>	<i>ta</i>	<i>vrah</i>
slave	that	whom	Lord	Jānavin	give	to	Vrah

‘slaves whom Lord Jānavin has bestowed upon the Vrah’

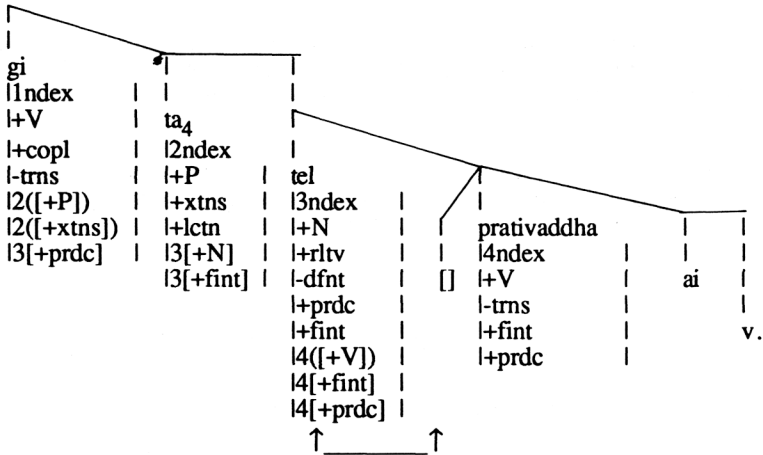


In example 13, the preposition *ta*₄ commands the relative noun *tel*. *Tel* [+prdc] functions as the missing subject of the lower clause S=[+V].

13. (K.341N:3-4)

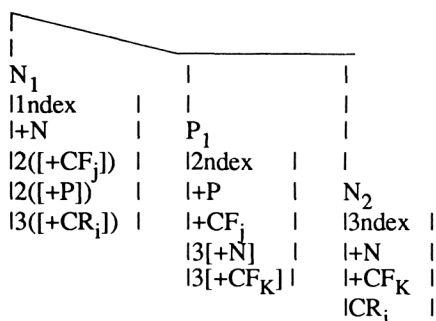
gi ta tel prativaddha ai vrah kammraten 'añ
 are that who devoted to V. K. our

'those who are ever devoted to the shining one Our High Lord'



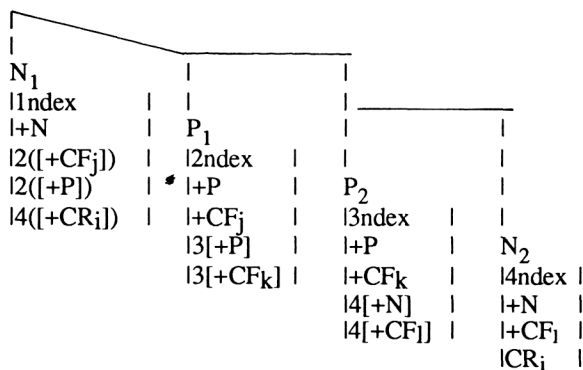
In example 14, the preposition *nu* is the regent of the relative noun *man*. *Man* is interpreted as a missing oblique dependent in the verbal relative clause.

Diagram #11



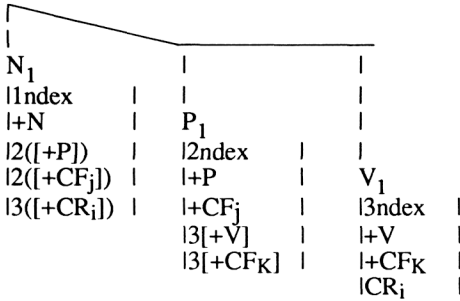
In diagram #11, the N₁ is the head of the NP and the regent of the prepositional phrase PP (the regent of P₁, but not of N₂). It cap-commands the preposition P₁ and commands the N₂ within the prepositional phrase. N₂ bears the case relation required by the N₁, the head of the NP, and P₁ functions as a case marker signaling the presence of the case relation CR_i on N₂.

Diagram #12



In the structural diagram #12, the N₁ is the head of the NP and the regent of the PP constituent. It cap-commands the preposition P₁ and commands the preposition P₂. P₁ cap-commands the P₂ and N₂. P₂ is the dependent of P₁ and the regent of N₂. Therefore in this structure, a preposition can have (1) another preposition as dependent attribute or (2) a nominal dependent attribute. A preposition cannot assign a case relation to its nominal dependent, so N₂ must have its case relation assigned by the N₁.

Diagram #13



In the structural diagram #13, the N_1 is the head of the NP and the regent of the PP constituent. The preposition P_1 cap-commands the secondary lexical head verb V_1 , and V_1 is commanded by the N_1 .

The following portion of the analysis will describe the dependency relations between a dominant word, the regent N_1 , and its dependent word P_1 , and other constituents which depend on N_1 and P_1 . First, the dependency relationship between the regent of a prepositional phrase and its attribute is examined.

4.3.1 Prepositional phrases with NP co-heads as attributes

4.3.1.1 *ai* as a locational preposition

The preposition *ai* will be examined in sections 4.4.2 (locational noun phrases) and section 4.4.3 (relator noun phrases). The preposition *ai* is subcategorized into ai_1 and ai_2 based on its distributional and syntactic functions.

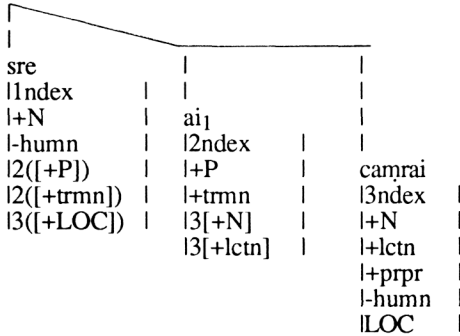
In this section, the focus is on the structure of noun phrases in exocentric construction with the locational preposition ai_1 , and on the dependency relationship between the regent P and the dependent N_2 , as shown in diagram #11. Structures containing ai_2 will be covered in section 4.3.2.2.

In example 15, the preposition ai_1 [+lctn, +trmn] is the regent of N_2 *camrai* [+lctn]. N_2 functions as a Locus [LOC] adjunct to N_1 , the head of the NP.

15. (K.600E:2)

sre ai₁ caṃrai
 ricefield at Caṃrai

‘the ricefield at Caṃrai’



4.3.1.2 'amvi as a preposition

In example 16, the preposition 'amvi [+sorc] has the locational noun *kāla* as dependent. The noun *kāla* bears the LOC case relation required by the regent of the phrase.⁹

16. (K.44A:9-10)

'amṇoy tāñ 'añ kloñ raṅko
 gift Retainer our Commissioner Husked Rice
 +N

doñ poñ varāhasena ai ta vraḥ kaṃratāñ 'añ
 and Sir Varāhasena at to V. K. 'A.

'amvi kāla vraḥ kaṃratāñ 'añ śrī raudravarmma
 from time V. K. 'A. Śrī Raudravarmma
 +P LOC

‘The gift of Our Retainer the Commissioner of Husked Rice and Sir Varāhasena to the V. K. 'A. from the [life] time of the V. K. 'A. Śrī Raudravarmma.’

⁹ Time adjuncts have been treated as a type of Locus in lexicase analyses, but this analysis has not yet been investigated and justified in detail.

4.3.1.3 *ta* as preposition

The following section examines the preposition *ta* functioning as a locational preposition marking the destination of something or someone. Before examining this portion, the different distributions and functions of the word *ta* in Old Khmer Dated Inscriptions are discussed.

The analysis of *ta* in this investigation remains unsatisfying in several respects and needs further study. According to Jenner (1981), scholars have not yet reached a consensus as to what wordclass the mysterious word *ta* belongs, due to its multiple functions (in both Old Khmer and Modern Khmer). Jenner (1981: 90) proposes to call *ta* a ligature,¹⁰ by analogy with the ligature element which has been described in Western Austronesian languages such as Tagalog.

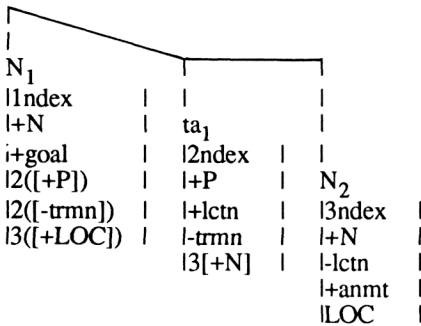
This descriptive analysis investigates the functions of *ta* in a dependency relationship to its regent and attribute and assigns a wordclass that best fits the criteria of lexicase theory, which is in some cases different from the conclusions reached by previous scholars working outside of any formal and explicit framework. Based upon this analysis, *ta* is a preposition and has four different syntactic functions. The distributional categories and functions of each of the prepositions *ta*₁, *ta*₂, *ta*₃, and *ta*₄ are illustrated in the following section.

4.3.1.3.1 Preposition *ta*₁ with [LOC] as a dependent attribute

The preposition *ta*₁ with [+lctn, -trmn] as lexical features can be found (1) as the lexical head of an exocentric construction, or (2) as the secondary lexical head of an exocentric construction cap-commanded by the preposition *ai*₂.

The construction of preposition *ta*₁ with [LOC] as a dependent attribute is shown in diagram #14.

Diagram #14



¹⁰ Jenner defines *ta* as ligature and defines its function as “subordinating conjunction serving to conjoin words and phrases as well as clauses.”

In diagram #14, the noun N_1 has an inherent goal [+goal] meaning, and expects its adjacent constituent to bear the non-terminus [-trmn] lexical feature. N_1 cap-commands ta_1 and commands N_2 . N_2 is the ‘co-lexical head’ or co-head of this PP exocentric construction. N_2 is not a locational noun [+N, +lctn], which is why it must cooccur with a [P, +lctn] ta_1 to satisfy N_1 ’s requirements and be interpreted as bearing the LOC case relation expected by N_1 , the regent of the PP.

In example 17, ta_1 has *vrah*, a non-locational noun, as an adjunct. This noun functions as LOC case relation dependent of its regent NP *kñum*.

17. (K.54:12)

kñum	'amnoy	kurāk	hvār	ta	vrah
slave	gift	governor	Hvar	to	Vrah
+N				+lctn	-lctn
				-trmn	LOC

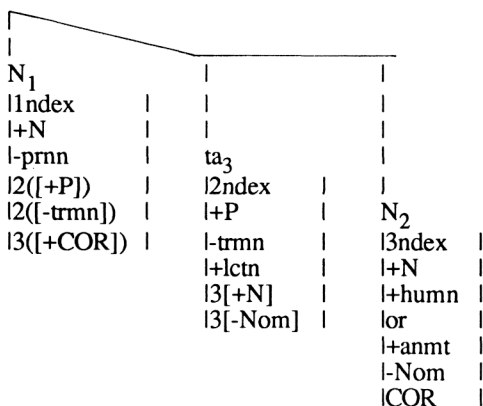
‘slave the gift of Governor Hvār to the Vrah’

The preposition ta_2 is the attribute of the regent noun N_1 and also is the lexical head of a double exocentric construction where the preposition ai_1 is its co-head. Therefore the discussion of the syntactical relationship between the head and the dependency attribute of ta_2 is postponed until section 4.3.2.1.

4.3.1.3.2 Preposition ta_3 with [COR] as dependent attribute

The NP structure containing the preposition ta_3 with a [COR] noun as dependent attribute is called the ‘indirect possessive NP’ and is examined in more detail in the discussion on indirect possession (section 4.4.4.4).

Diagram #15



In diagram #15, the noun N_1 is the regent of the PP possessive prepositional phrase. It cap-commands the preposition ta_3 , the lexical head, and commands N_2 , the co-head of this exocentric construction. The lexical head ta_3 requires a nominal dependent attribute N_2 . N_2 functions as the possessor of N_1 , the regent of the PP, and accordingly bears the Correspondent [COR] case relation required by it.

Example 18 shows the preposition ta_3 as the head of the exocentric construction, where *mratañ* is its dependent and bears the Correspondent case relation expected by *'nak*, the regent of the PP.

18. (K.689A:17)

'nak	ta_3	mratañ	'añ	guru	le	tmo	l	kaṃvāla
people	of	Lord	our	Guru	Le	Tmo	l	kaṃvāla
+N	+P	COR						
	-trmn	-Nom						

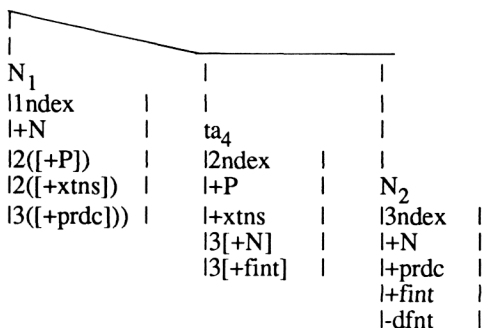
'the people of Our Lord: one Guru Le Tmo [and] Kaṃvāla'

The presence of the preposition ta_3 is necessary in this phrase. Without ta_3 , this phrase becomes *'nak mratañ 'añ guru le tmo l kaṃvāla*, and would be interpreted as 'the people who are Our Lord', where *mratañ* functions as predicate attribute to the regent noun *'nak*.

4.3.1.3.3 Preposition ta_4 with [+prdc] noun as dependent attribute

The preposition ta_4 bears the feature [+xtns] 'extension', a feature that marks words that take [+prdc] complements. The noun N_1 is the regent of the prepositional phrase ta_4 N_2 , where the preposition ta_4 [+xtns] is the lexical head of this exocentric construction and expects a predicate (verbal or nominal) as dependent. The predicate dependent can be either (1) a regular noun (see diagram #16), (2) the relative noun *mān* or *tel* (also discussed in section 4.4.4.5), or (3) a verbal relative clause S (discussed in section 4.3.3).

Diagram #16



ta_4 is the lexical head of an exocentric construction, where its lexical co-head can be a common noun bearing the [+prdc] lexical feature. This predicative prepositional phrase functions as an adjunct of the head N_1 of the NP. Additional discussion of a NP with a predicate dependent attribute can be found in sections 4.2 and 4.4.4.

In the analysis of diagram #16, ta_4 with a predicate dependent is an indefinite 'descriptive' predicate, stating a property of the head rather than equating one entity with another independently registered one.

In example 19, ta_4 [+xtns] is the complementizer for the regent noun $kñum$, and its nominal dependent si functions as [+prdc] to $kñum$, the regent of the PP. Example 20 shows ta_4 as the lexical head of the relative noun man .

19. (K.109N:12)

$kñum$	ta_4	si
slaves	(who are)	male
+N	+P	+N
	+xtns	+prdc

'the male slaves'

20. (K.561:28)

$kñum$	ta_4	man	$poñ$	$janaprakāśa$	oy	ta	$vrah$
slaves	that	whom	Sir	Janaprakāśa	give	to	Vrah
+N	+P	+rltv					
	+xtns	+prdc					

'the slaves whom Sir Janaprakāśa has given to the Vrah'

In the PP exocentric construction, the prepositions encountered so far are: ai , 'amvi, and ta . The preposition ai cap-commands a location noun or a relator noun, and these nouns function as LOC adjuncts to the noun regent. Prepositions ta_1 , ta_3 and ta_4 cap-command a locational or a common noun, or the relative noun man or tel , and, in turn, these nouns function as LOC or COR or predicate adjuncts to the nominal head of the NP.

4.3.2 Noun phrases with double preposition phrases as attributes

Up to this point the analysis has focused on a NP with one immediate prepositional phrase dependent. The following analysis examines the NP that has a double prepositional phrase as an adjunct.

Below are the combinations of P_1 and P_2 which have been found in the data.

or human [+humn] nouns never take *ai* plus a locational noun as an immediate dependent attribute. This hypothetical phrase is apparently ungrammatical, thus the presence of *ta*₂ is required to act as a buffer to link the animate or human head noun of the NP to a locational PP.

In example 22, *ta*₂, dependent of a human noun, functions as a buffer to avoid an ungrammatical collocation. In example 23, *ta*₂, a dependent of a non-animate noun, adds a territorial meaning to *ai*₁ *somyapura*.

22. (K.904B:19)

jmaḥ	ge	kñuṃ	tāñ	ta ₂	ai ₁	puran	ta	tel
name	they	slave	goodwives	to	at	Puran	that	whom
		+N		+P	+P	+lctn		
		+humn		-trmn	+trmn	LOC		
oy	ta	vraḥ						
give	to	Vraḥ						

'names of the slaves of the goodwives of Puran, whom [they] give to the Vraḥ'

23. (K.904B:15-6)

sruk	vraḥ	phoñ	ta ₂	ai ₁	somyapura
villages	Vraḥ	plr.	to	at	Somyapura
+N			+P	+P	+lctn
-anmt			-trmn	+trmn	LOC

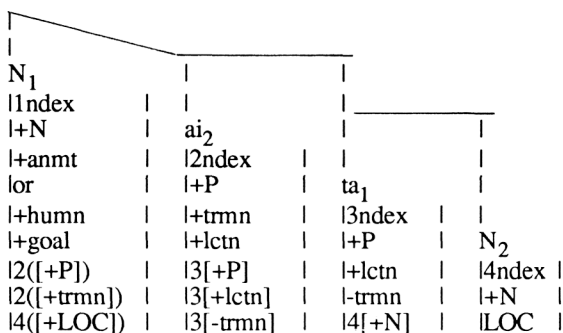
'the Vraḥ's villages in Somyapura'

In conclusion, the sequential cooccurrence of the prepositions *ta*₂ *ai*₁ may function: (1) to avoid the ambiguity of using *ta*₂ alone; (2) to use *ta*₂ as a buffer to avoid the ungrammatical combination of an animate or human noun followed immediately by the preposition *ai*₁ plus a locational noun; or (3) to provide additional semantic information in terms of 'space', which would not be present in a phrase headed by *ai*₁ alone.

Now we focus on the sequence *ai*₂ *ta*₁, where the regent *N*₁ is an animate or human noun and the dependent *N*₂ is non-locational.

4.3.2.2 *ai₂ ta₁ in double exocentric constructions*

Diagram #18



The assumed *ai₂* ~ '*ay₂* in this analysis differs from *ai₁* (section 4.3.1.1) in distribution: it takes a PP rather than an NP as its co-head. In diagram #18, the animate noun N₁ requires its adjacent constituent to bear the terminus [+trmn] feature. It does not require its other dependent prepositional attributes to carry the goal [+goal] feature, because the word N₁ itself has an inherent goal meaning. In *ai₂*[2ndex], the [3[+P], 3[+lctn], 3[-trmn]] tell us that *ai₂* requires its dependent preposition to bear the lexical features [+lctn, -trmn]. In *ta₁*[3ndex], the 4[+N] implies that *ta₁* requires an obligatory nominal dependent attribute, which functions as a LOC adjunct of N₁, regent of the PP.

The presence of the preposition *ta₁* is here only to satisfy the [?[+lctn] and [?[-trmn]] features of *ai₂* when N₂ is [-lctn].

Within this sequence N₁ - *ai₂* - *ta₁* - N₂, the preposition *ta₁* is followed by non-locational nouns which are divine, human, non-human, or relator nouns as shown in these examples.

24. (K.503:3)

'amnoy	tāñ	'añ	ai ₂	ta ₁	vrah	śrī	candakatyayini
gift	Tāñ	our	at	to	Vrah	Śrī	Candakatyayini
+N			+P	+lctn	-lctn		
-anmt			+trmn	-trmn	LOC		

'the gift of our Tāñ to the Vrah Śrī Candakatyayini'

Justification for my analysis of the sequential cooccurrence of *ai₂* and *ta₁* is as follows.

1. Without the preposition *ai₂*, the hypothetical phrase '*amnoy tāñ 'añ ta vrah śrī candakatyayini* could be interpreted in several ways:

- (a) *'amṇoy tāñ 'aṅ ta₁ vraḥ śrī candakatyayini*, 'the gift of our Tāñ to the Vraḥ Śrī Candakatyayini';
- (b) **'amṇoy tāñ 'aṅ ta₃ vraḥ śrī candakatyayini*, 'the gift of our Tāñ of the Vraḥ Śrī Candakatyayini';
- (c) **'amṇoy tāñ 'aṅ ta₄ vraḥ śrī candakatyayini*, 'the gift of our Tāñ which is the Vraḥ Śrī Candakatyayini'.

Sentence (b) is ungrammatical because it has two COR dependents of the same N, violating the One per Sent constraint, and sentence (c) is impossible for pragmatic reasons. Therefore, the presence of the locational preposition *ai₂* will help to clarify this construction.

2. Without preposition *ta₁*, the hypothetical phrase **'amṇoy tāñ 'aṅ ai vraḥ śrī candakatyayini* is ungrammatical because the preposition *ai* requires a location noun as a dependent attribute, but the noun *vraḥ* [-lctn] does not satisfy this requirement.

Thus preposition *ai₂* needs *ta₁* for its [+lctn, -trmn] requirement; and the preposition *ta₁* needs *ai₂* to rule out interpretations (b) and (c).

As shown here, this preposition *ta₁* can be the regent of an animate noun (example 25), or non-animate noun (example 26), or even a relator noun (example 27).

25. (K.54:14)

'amṇoy	candrodaya	'āy ₂	ta ₁	vraḥ
gift	Candrodaya	at	to	Vraḥ
+N		+P	+lctn	+anmt
-anmt	*	+trmn	-trmn	LOC

'the gift of Candrodaya to the Vraḥ (see diagram #18)'

26. (K.904B:18)

karom	ai ₂	ta ₁	dnel	śarvvapura
set of ricefields	at	to	granaries	Śarvvapura
+N	+P	+lctn	-anmt	
-anmt	+trmn	-trmn	LOC	

'the set of the ricefields at the granaries of Śarvvapura'

27. (K.341N:8)

'ampal	gana	pradana	'āy ₂	ta ₁	nā	vraḥ
total	multitude	gift	at	to	place	V.
			+P	+lctn	+rltr	
			+trmn	-trmn	LOC	

kaṃmrateṅ 'aṅ śrīśivapāda [list of gifts]
K. Our Śrīśivapāda [list of gifts]

'adhina 'āy ta ge paṃnvas 'cas
 be under jurisdiction of at of them senior cenobites

'All of the multitude of gifts [made] to sanctuary of the Shining One Our High Lord Śri Sivapāda [list of gifts] [they] are under the control of the senior cenobites'

4.3.2.3 'amvi₂ ta₁ in double exocentric constructions

As shown in example 28, the preposition ta₁ also is the dependent of the preposition 'amvi [+sorc].

28. (K.910:11)

sre	'amvi	ta ₁	poñ	vinayakīrtti	ai	teṃ	canloñ
ricefield	from	to	Poñ	Vinayakīrtti	at	Teṃ	Canloñ
	+P	+lctn	+anmt				
	+sorc	+trmn	LOC				

mratāñ duvau māś 2 ai sruk sanre
 Lord Duvau māś 2 at village ricefield

'the ricefields from Poñ Vinayakīrtti [one] at the tree Canlon of the Lord Duvau: 2 māś, [another] at the village' [x units].

4.3.3 Prepositional phrases with a verbal sentence and the preposition as ta₄ co-head

As mentioned in connection with diagram #9, section 4.2, and discussed under diagram #13, section 4.3, the preposition ta₄ [+xtns] is the regent of V₁.

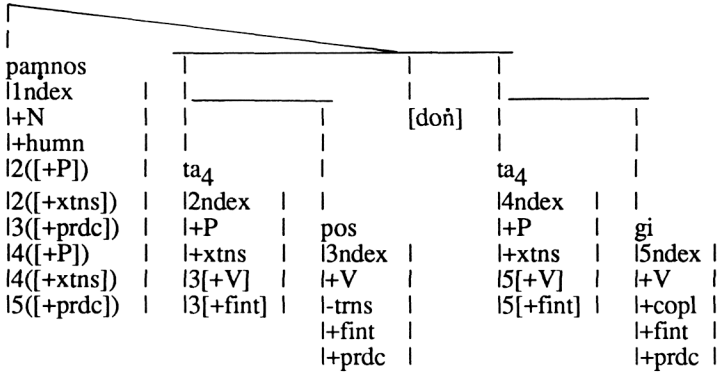
In example 29, ta₄ +V is in coordinate conjunction with a missing *doni*. The first ta₄ is the regent of the intransitive verb *pos*, the second ta₄ is the regent of a copula verb *gi*.

29. (K.44B:9-10)

paṃnos	ta ₄	pos	ta ₄	gi	noḥ	vnam
cenobites	that	enter orders	that	be [on]	that	hill

vrah	kaṃratāñ	'añ
V.	K.	'A.

'cenobites that who enter orders [and] that who are on that hill [Sanctuary] of the V. K. 'A.'



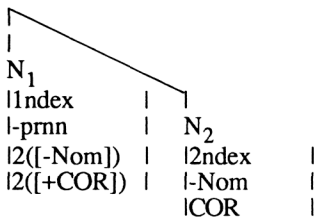
In conclusion, the preposition *ta₄* is used as a ‘complementizer’, the marker for a subordinate clause. This subordinate clause can be a verbal or nominal clause.

4.4 Noun phrases as dependents of nouns

4.4.1 Possessive nouns as dependents of nouns

A possessive noun phrase is marked with the feature non-nominative [-Nom]. It must have a nominal regent and is interpreted as bearing the case relation Correspondent allowed or required by its regent. Based on the Old Khmer Dated Inscriptions, there are two types of possessive noun phrases: direct and indirect. The indirect possessive NP is examined in section 4.4.4.4. The direct possessive NP is illustrated in diagram #19.

Diagram #19



‘N₁ corresponding to N₂’

The tree in diagram #19 shows the direct possessive relationship between the head N₁ and its immediate dependent sister, N₂. The head of the construction N₁ can be any noun that is not a pronoun [-prnn]. The feature [2([+COR])] indicates that the dependent word with the feature [2ndex] bears the case relation Correspondent to N₁. Note that the parentheses () refer to an optional Correspondent

noun. The [2([-Nom])] signifies that the dependent N₂ must be a non-nominative noun.

The dependent N₂ is marked with the non-nominative [-Nom] because if it were [+Nom], there would be no linking and the structure would not be generated. Although N₂ is already identified as bearing the case relationship Correspondent by virtue of the feature [2([+COR])] marked on the regent, this feature Correspondent [COR] feature will be redundantly marked on the N₂ in this investigation for ease of readability.

4.4.1.1 *Direct possessive noun phrases*

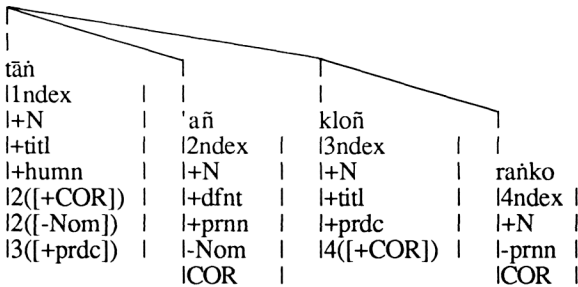
In the direct possessive noun phrase structure, the nominal that bears the Correspondent case relation can be: (1) a pronoun, (2) a derived pronoun or (3) a non-pronoun. The examples of direct possessor noun constructions are grouped according to the semantic features of the regent and dependent nouns. These groupings have no syntactic implications since all the examples are syntactically equivalent. Also the word ‘possession’ is used in a loose sense of ‘corresponding to’ rather than in the strict sense of ‘ownership of property’.

As shown in example 30, the pronoun ‘añ’ functions as COR to its regent noun *tāñ*, and the common noun *rañko* functions as COR to its regent *kloñ*.

30. (K.44:8-9)

tāñ	'añ	kloñ	rañko
Retainer	our	Commissioner	Husked Rice
	+prnn		-prnn
	COR		COR

‘our Retainer the Commissioner of Husked Rice’



Example 31 shows the second *ku* as a derived pronoun that functions as COR to regent noun *kon*.

31. (K.561:39)

ku	drahay	1	kon	ku	ku	krahvan	1
female slave	Drahay	1	child	her	female slave	Krahavan	1
			+N	+prnn			
				+titl			
				COR			

‘one female slave Drahay, her child, one female slave Krahvan’

As exhibited in examples 32 and 33, the compound noun *'nak sre* and the proper noun *mahanukrtavikhyata*, respectively, both function as COR to their regent nouns.

32. (K.600E:6)

jmah	'nak	sre
name	person	ricefield
+N	COR	

‘names of the ricefield workers’

33. (K.765:7)

'amnoy	mahanukrtavikhyata	ta	vrah
gift	mahanukrtavikhyata	to	Vrah
+N	+prpr		
	COR		

‘the gift of Mahanukrtavikhyata to the Vrah’

Example 34⁴ shows the ‘co-lexical head’ of a locational exocentric construction PP as the regent of a possessive title noun *ku*.

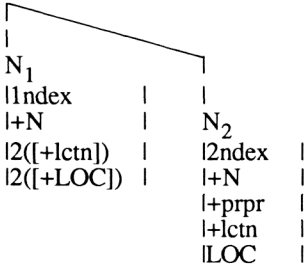
34. (K.561: 19)

'amvi	travañ	ku	kañcanna
from	pond	female slave	Kañcanna

‘from the pond of the female slave Kañcanna’

4.3.2.2 (*ai₁ ta₂* in double exocentric constructions).(3). $N_1 - N_2$ (see following diagram #20)

Diagram #20



In diagram #20, N_1 is the regent of N_2 , a locational proper noun [+prpr, +lctn] which is the immediately adjacent dependent of N_1 . N_2 can serve as the Locus of N_1 , which implies that the non-nominative N_2 bears the Locative case relation.

4.4.2.1 *Prepositions as the lexical regents of locational nouns*

In some languages there are ways to test for locational nouns. For instance in Thai, occurrence after the verb *yüu* serves as a test for locational nouns (Savetamalya 1989:201). In English the test is the absence of a determiner before a common singular count noun; e.g., ‘she went to the school₁’ [+N, -lctn] versus ‘she went to school₂’ [+N, +lctn, +dfnt, -[+Det]] (Starosta 1988:201). In Old Khmer the nouns that occur as dependent attributes of a preposition which requires dependents with the lexical feature [+lctn] are analyzed as locational nouns, and may serve as LOC complements of regent words requiring [+lctn] dependents.

In old Khmer dated inscriptions, only a limited number of (notionally locational) nouns appear as direct dependents of the locational preposition *ai₁*. Other nouns only occur there with an intervening *ta₁* (or relator noun) to carry the required [+lctn] feature. The [+lctn] analysis, then, is an attempt to explain this distribution.

All proper nouns are divided into locational [+lctn] and non-locational [-lctn] subcategories. Proper locational nouns [+lctn] marked [-humn] refer to the names of places, institutions or countries. Proper non-locational nouns marked human [+humn] refer to the names of people and [+humn, +divn] nouns are for deities. This first portion of the analysis focuses on the PP where the preposition P is the lexical head of the exocentric construction, and the locational noun is the secondary lexical head and bears the Locus [LOC] case relation required by the regent of the PP.

Examples 35 and 36 show that *ai₁* [+P, +lctn] requires its immediate dependent proper nouns *kantok* and *tñan* to bear the [+lctn] feature, and those proper place names such as *Kantok* or *tñan* are lexically marked for this feature [+lctn].

35. (K.600)

sre	ai ₁	kantok
ricefield	at	Kantok
	+P	+lctn
	+lctn	LOC

‘the ricefield at Kantok’

36. (K:9:30)

'amnoy	sugan	ai ₁	tñan
gift	Sugan	at	Tñan
		+P	+lctn
		+lctn	LOC

‘the gift of Sugan at Tñan’

According to its definition, a location noun is a noun that is marked with the localistic location feature [+lctn] and can serve as LOC complement of the word requiring a [+lctn] dependent.

4.4.2.2 *Locational nouns in double exocentric constructions after ta₂ ai₁*

The explanation of the sequential cooccurrence *ta₂ ai₁* is discussed in section 4.3.2.1. *Ta₂* is used in the N₁ - *ta₂ ai₁* - N₂ [+lctn] construction for the following reasons: (1) to avoid the ambiguity which would result from using *ta₂* alone; (2) as a buffer to avoid the ungrammatical combination of an animate or human noun followed immediately by the preposition *ai₁* plus a locational noun; or (3) to provide additional semantic information in terms of ‘space’ that would not be present in a phrase headed by *ai₁* alone. In addition N₁ can be an animate, non-animate, or human noun, and N₂ is a locational noun [+lctn], and the sequence of *ta₂ ai₁* is necessary for the construction.

4.4.2.3 *Locational proper noun functioning as cor to its regent noun*

Example 37 shows how *prañ kandal*, a proper noun adjacent to the regent noun *sre* [-anmt], has various possible grammatical functions.

37. (K.79:24)

sre	prañ	kandal	tloñ	1
ricefield	Central	Tower	tloñ	one
	+prpr			
	COR			

‘the ricefield of the Central Tower, one tloñ, or Pran Kandal ricefield: one tloñ, or the ricefield [in the vicinity] of the Central Tower, one tloñ’

Without context, this type of phrase can be interpreted with these three possible analyses, where the dependent attribute proper locational noun *prañ kandal* performs different syntactic functions: COR, predicate [+prdc] or LOC to its regent *sre*. A final decision as to the best fit between *prañ kandal* [+prpr, -humn, COR] and the adjacent constituents depends upon the context.

In example 38, the proper locational nouns *vikramapura* and *rajagrapha* function as COR to title nouns *kuruñ* and *kloñ* respectively.

38. (K38:11)

mratañ	kuruñ	vikramapura	pre	mratañ	kloñ	rājagrapha
Lord	prince	Vikramapura	order	Lord	chief	Rājagrapha
		+lctn	+V			+lctn
		COR				COR

‘the Lord, the prince of Vikramapura has ordered the Lord chief of Rājagrapha’

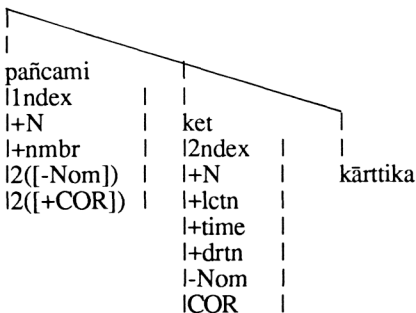
4.4.2.4 Temporal nouns

Temporal nouns are locational nouns marked with a specific localistic time [+time] feature that cannot be provided by their regent or dependent.

39. (K.44A:6)

pañcami	ket	kārttika
fifth	fortnight of the waxing moon	Kārttika

‘the fifth (lunar) day of the fortnight of the waxing moon of Kārttika’



The temporal noun *ket* has the localistic feature [+lctn, +time]. It is the dependent possessive attribute of the regent number noun *pañcami*, and functions as COR case relation rather than LOC to its regent.

4.4.2.5 Cardinal direction nouns

Example 40 lists all four cardinal directions: *pūrvva* ‘East’, *dakṣina* ‘South’, *paścima* ‘West’, and *uttara* ‘North’. They are locational nouns marking principal cardinal [+cdnl] points.

40. (K341N:1-3)

'ājña	vraḥ	kamratān	'añ	parigrapha		bhūmi	ta
order	V.	K.	'A.	to take possession of		lands	to
	vraḥ	kamraten	'añ	śriśivapāda	pūrvva	vañ	hareñ
	V.	K.	'A.	Śriśivapāda	East	Vañ	Hareñ
					+cdnl	+lctn	+cdnl
						COR	
lantau	paścima	tmo vṛk	uttara	tarañ	tañnot.		
Lantau	West	Tmo Vṛk	North	Tarañ	Tañnot		
+lctn	+cdnl	+lctn	+cdnl	+lctn			
COR		COR		COR			

‘The order of the V. K. 'A. taking [certain] lands unto the V. K. 'A. Śriśivapāda, the East of Vañ Hareñ, South of Lantau, West of Tmo Vṛk, North of Tarañ Toñnot’

In this example, ‘East’ *pūrvva* is the head of the NP and regent of the dependent Correspondent proper locational noun *vañ hareñ*.

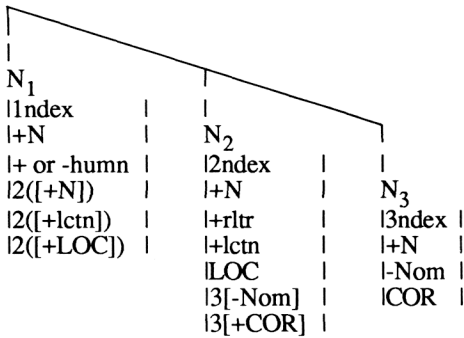
According to this study, locational nouns in old Khmer dated inscriptions need not always bear the Locus case relation. When they occur in syntactic positions other than as the attribute of *ai*₇, they can bear whatever case relation is required by the regent. However, the section on cardinal and temporal locational noun phrases needs further study.

4.4.3 Relator nouns as dependents of nouns

Relator nouns are marked with the localistic feature [+rltr] and provide other localistic features and/or other semantic information required by their regents (possibly) not available on a particular dependent. Relator nouns typically designate some aspect of the dependent that is associated with the regent, which can be a noun, a verb or a preposition.

In old Khmer dated inscriptions there are three types of constructions where relator nouns can be found as: (1) attributes of a noun, (2) a preposition or (3) a verb. They are illustrated in the following diagrams:

Diagram #21

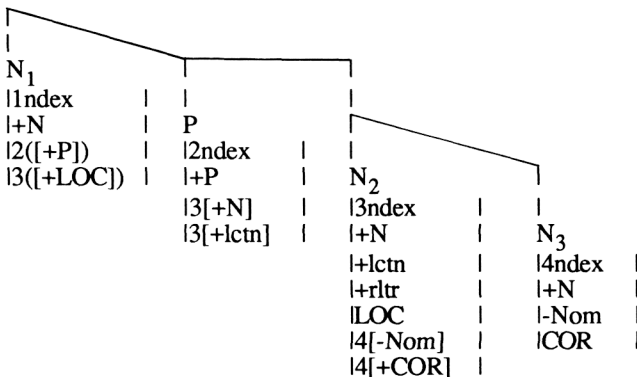


'N₁ at the N₂ of N₃'

In diagram #21, the regent noun N₁ can be either [+humn] or [-humn]. The [2([+lctn])] denotes that one kind of dependent N₂ must bear the localistic feature [+lctn], and [2([+LOC])] interprets the N₂ as bearing the LOC case relation. In addition, as a relator noun, N₂ supplies other semantic and localistic features allowed and/or required by the regent noun N₁. The [3[-Nom]] and [3[+COR]] features of N₂ tell us that this noun requires a nominal attribute N₃, which is marked as bearing the case relation Correspondent [COR] and the non-nominative case form feature [-Nom].

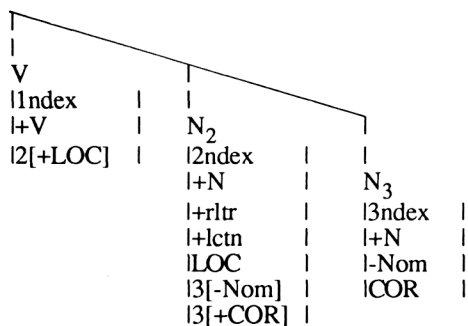
In addition to being the attribute of an NP, a relator noun can also be the attribute of a preposition. A preposition is the 'lexical head' of the prepositional phrase and the regent of the relator noun N₂. The noun N₂ is the 'secondary lexical head', the lexical head of a phrase which is the co-head in an exocentric construction.

Diagram #22



In diagram #22, the NP node which dominates the relator noun N_2 [+rltr, LOC] is the co-head of the exocentric PP construction, where the preposition P is the lexical head. Thus the preposition P cap-commands N_2 , while the regent noun N_1 cap-commands the preposition P and commands the relator noun N_2 . The [3 [+N]] and [3 [+lctn]] in the matrix of the preposition indicates that it must have a noun as its exocentric dependent and that the noun must be a location noun that bears the LOC case relation. The [4 [+COR]] means that the relator noun N_2 must have a dependent ‘possessor’ which is interpreted as bearing the Correspondent case relation, and that N_3 is its possessor. The relator noun is a dependent of V and its projection is the daughter of S.

Diagram #23



In diagram #23, the relator noun N_2 is a dependent attribute of a verb, not an NP. V is the regent of N_2 , and in turn N_2 is the regent of the possessor noun N_3 .

4.4.3.1 *Nouns as regents of relator nouns*

Relator nouns in old Khmer dated inscriptions are: *kaṃluñ* [+ntrr], *karom* [+undr], *krau* [+ntrr, +bynd], and *ñiñ* [+prxt]. The following examples illustrate the syntactic relationship between these relator nouns and their regents.

41. (K.493:26)

sre	kaṃluñ	tnal
ricefield	inside	road
	+rltr	COR
	LOC	

‘the ricefield inside of the elevated road’

43. (K.18:4)

sre	krau	dnal
ricefield	beyond	barrier
	+rltr	COR
	LOC	

‘the ricefield beyond the barrier’

In example 43, the relator noun *krau* provides the localistic features [+ntrr, +bynd] ‘interior and beyond’ and adds semantic information that neither its regent nor its dependent could. *Krau* is also the regent of the possessive noun *dnal*, which bears the Correspondent case relation, and links *dnal* to its regent *sre*.

4.4.3.2 Relator nouns with prepositional regents

The preceding explained the relationship between a relator noun and its regent where the regent is a noun. The focus on relator nouns as the ‘co-lexical head’ of a PP exocentric construction is follows.

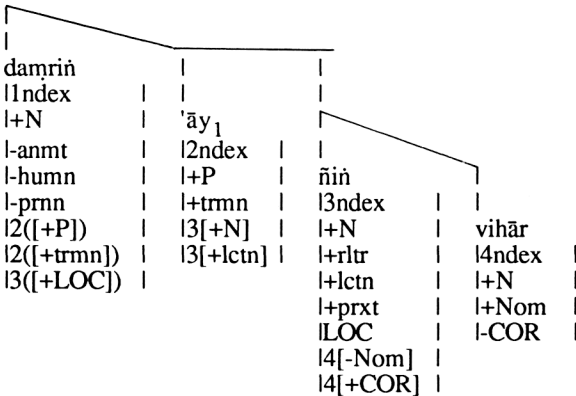
4.4.3.2.1 Relator nouns as dependents of prepositions

In this construction, a preposition is the lexical head of the prepositional phrase and the regent of the noun N₂. The noun N₂ is the co-lexical head of an exocentric construction.

44. (K.505:15)

damriñ	'āy ₁	ñiñ	vihār
plantation	at	side	temple

‘the plantation at the side of the temple’



In example 44, *damṛiñ* is the regent of the locative prepositional phrase ‘*āy₁ ñiñ vihār*. The preposition ‘*āy₁* is the lexical head of an exocentric construction, with the relator noun *ñiñ* as its co-head. The relator noun *ñiñ* also marks the proximity [+prxt] of the plantation in relation to the location of the temple. Notice that the relator noun *ñiñ* is found between the preposition ‘*āy₁* and the non-locational noun *vihār*.

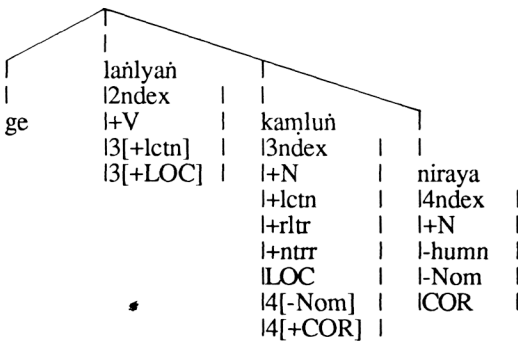
4.4.3.3 *Relator nouns as dependent of verbs*

In this section the relator noun is the dependent of a verb in a sentence.

45. (K.341N:11-2)

ge lañlyañ kaṃluñ niraya nu gotra phon
 they burn in Hell with kinsmen all

‘they [shall] burn in Hell together with their kinsmen’



Here the relator noun *kaṃluñ* is the dependent attribute of the intransitive verb *lañlyañ*. *Kaṃluñ* has the localistic feature [+ntrr], which characterizes the specific kind of relationship association between the regent verb *lañlyañ* ‘burn’ and the dependent noun *niraya* ‘hell’.

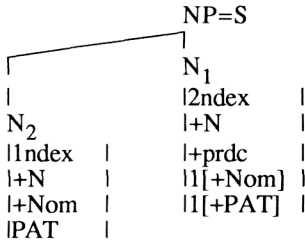
4.4.4 *Equative clause constructions*

In this portion, the focus is on noun phrases with one dependent attribute. Grammatical relationships between the head noun and its attribute are examined, including characteristics of equational attributes and their relationships with other sister dependents.

An equative clause construction has a noun or NP as topic or subject regent and is followed by a noun or NP as complement. It can be either marked or unmarked by a copula verb: *gui* ~ *gi*, or *ja* as in Modern Khmer. The marked equative clause construction is discussed briefly in section 4.2.

Unmarked equational clauses are verbless clauses where the regent noun N_1 bears the [+prdc] lexical feature and has a complement nominative patient N_2 as subject.

Diagram #24



‘noun N_1 predicated of noun N_2 ’

Technically, three types of relative clause structures are found in Old Khmer Dated Inscriptions, where N_1 is being modified by an attribute S (see diagrams below). In the first type, called the verbal relative clause (see section 4.2), the dependent S has a verb [+V] as the head of the construction. In the second type, called the nominal equative relative clause, the dependent construction is an NP whose head N_2 bears the lexical feature [+prdc] predicate. The construction in the third type is an NP whose head is the noun *man* or *tel* bearing the lexical feature [+rltv] relative. This final construction is called an indirect verbal relative clause (see section 4.4.4.5).

Verbal relative clause:

Diagram #25a

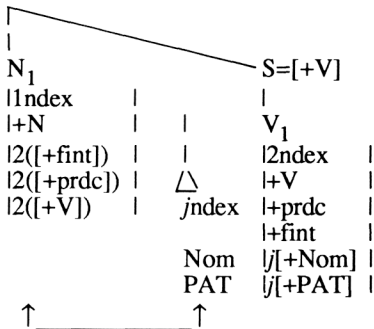
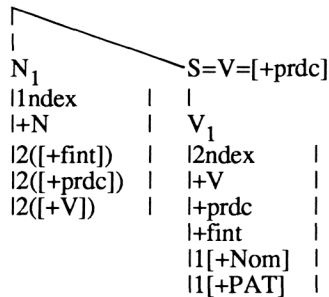


Diagram #25b



In this verbal relative clause construction (diagram #25a), the N_1 does not have to bear any case form or case relation. However, N_1 is coreferential with the implied subject of S. For the convenience of the reader, this implied subject is indicated as Δ , and the next structure (diagram #25b) is an abbreviation of this configuration.

Nominal equative predicate clause:

Diagram #26a

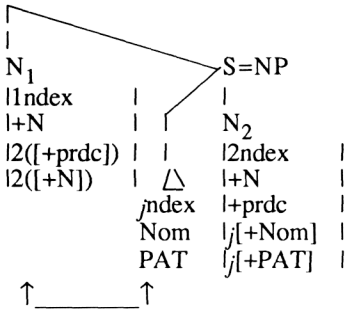
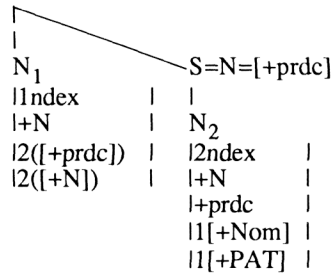
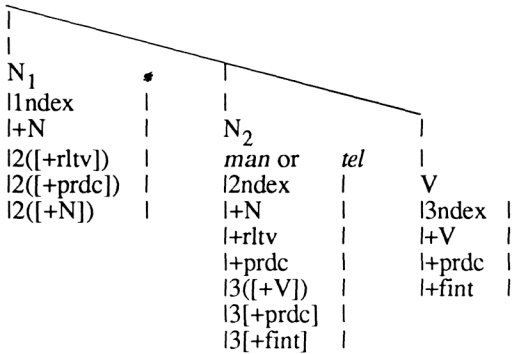


Diagram #26b



A verbless sentence (diagram #26a) with a nominal predicate is simultaneously a sentence in that its lexical head is marked [+prdc], and an NP in that its lexical head is [+N]. When a verbless sentence functions as a relative clause on a higher noun, the subject is omitted and is interpreted as coreferential with the regent N₁, following the normal relative clause pattern (see section 4.2.1). Again, the next structure (diagram #26b) may be used as an abbreviation for this configuration.

Diagram #27: Indirect verbal relative clause



In diagram #27, the relative N₂ [+rltv, +prdc] is the word *man* or *tel*, which is found between the head noun of the NP whose head is N₁ [+Nom, PAT] and a following verbal relative clause (see section 4.2.2).

4.4.4.1 Nominal equative predicate clauses

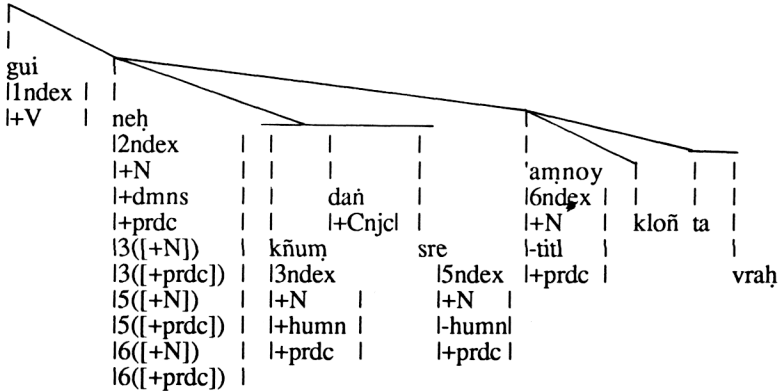
In this section, the syntactic features of only the nominal equative predicate clause are outlined. The regent N₁ of a nominal equative predicate clause can be either a demonstrative noun *neh* or *noh*, common noun, number noun, proper noun

or a title noun. The predicative dependent N_2 can be a common noun, personal proper noun, non-personal proper noun, number, classifier, or even a relator noun.

46. (K.18:30-10)

gi neh kñum dañ sre 'amnoy kloñ ta vrah
 are these slaves and ricefield gift his to Vrah

'These are the slaves and ricefields (which are) his gift to the Vrah.'



The entire sentence is an intransitive impersonal copula verb construction (see section 2.2 for details); however here I analyze the word *neh* [+dmns, +prdc] as the head noun of a NP with two dependent predicate NP attributes of its own: (1) the coordinate predicate NP *kñum dañ sre* and (2) the predicate NP *'amnoy kloñ ta vrah*. The predicate demonstrative pronoun *neh* 'these' is equated to *kñum* 'slaves' and *sre* 'ricefields', and to the *'amnoy* 'gifts', because the slaves and the ricefields are the gifts.

In example 47, *noh* [+dmns, +prdc] is the regent of the predicate location noun *kāla* [+time, +prdc].

47. (K.154B:7)

gi noh kāla mratāñ bhavāditya
 is that (life)time Lord Bhavāditya
 +V +prdc +time
 +prdc

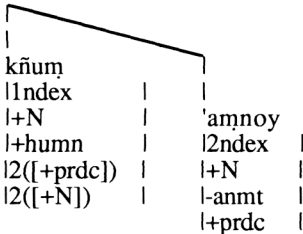
'That is (during) the (life) time of the Lord Bhavāditya'

In example 48, the common noun *kñum* [+humn] is the regent of the predicate common noun 'amnoy [-humn, +prdc].

48. (K.600N:2)

kñum	'amnoy	jam	'añ
slave	gift	Jam	'Añ
+humn	-anmt		
	+prdc		

'the slaves the gift of Jam 'añ'



Example 49 illustrates an NP with a title regent and a proper nominative equative predicate NP adjunct.

49. (K.79:7)

mratāñ	ĭśanapavitra
lord	ĭśanapavitra
+titl	+prpr
	+prdc

'Lord (who is called) ĭśanapavitra'

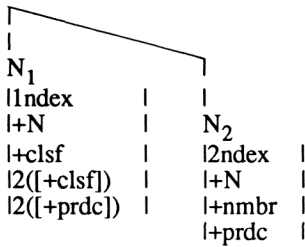
A detailed analysis of the equative noun phrases with various classifications of nouns is shown in: (1) classifier constructions (section 4.4.4.2); (2) number noun phrases (section 4.4.4.3); (3) indirect possessive noun phrases (section 4.4.4.4); and (4) indirect verbal relative clauses (section 4.4.4.5).

4.4.4.2 Classifier constructions

A classifier construction has a classifier [+N,+clsf] as its head and may or may not include a dependent sister.¹¹ There are four types of classifier constructions: (1) the classifier functions as the head of a free NP; (2) the classifier functions as the regent of a prepositional phrase; (3) the classifier functions as the attribute of a noun; and (4) the classifier functions as the attribute of a verb. These are illustrated in the four diagrams (#28 to #31) below.

¹¹ This structure is totally different from classifiers in Modern Khmer. In Modern Khmer the classifier is placed after the regent noun and may have no dependents.

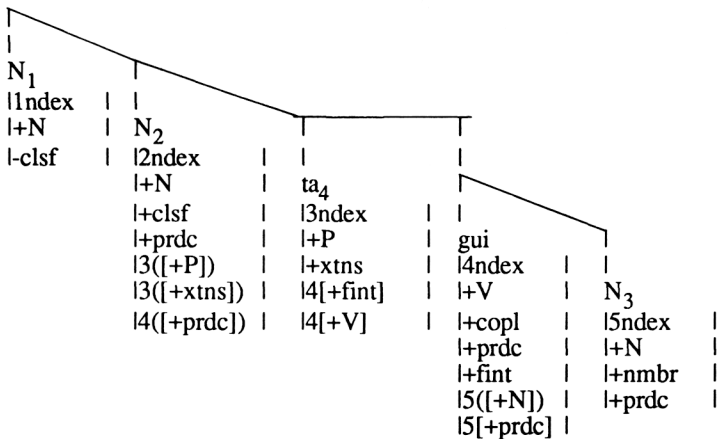
Diagram #28



In diagram #28, the [2([+prdc])] and [2([+nمبر])] indicate that the contextual features of the classifier are linked to an external constituent and refer to an adjunct, and that the regent that bears these contextual features expects the dependent to bear the features predicate [+prdc] and number [+nمبر] as lexical features. N₂ is a number noun, which is the predicate attribute of the classifier regent N₁.

A number is not the only possible attribute of a classifier noun. A prepositional phrase can also be the attribute of a classifier, as illustrated in diagram #29.

Diagram #29



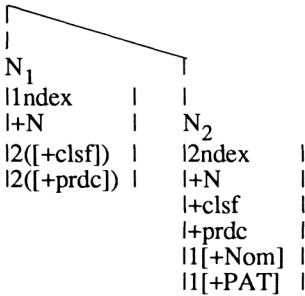
In diagram #29, N₂ is a classifier noun. Its contextual features [3([+P])], [3([+xtns])], and [4([+prdc])] imply that N₂ (1) expects its dependent attribute to be a preposition [+P] which has the extension feature [+xtns] and (2) expects its other dependent attribute to bear the feature [+prdc].

The prepositional phrase *ta₄ gui N₃* is the attribute of the classifier N₂. The classifier N₂ is the regent of the PP exocentric construction where *ta₄* is the lexical head, *gui* is the secondary lexical head, and N₂ commands the number N₃. The

preposition ta_4 requires a dependent finite verb. The verb *gui* is the dependent of the classifier noun and in turn is the regent of the predicate number N_3 .

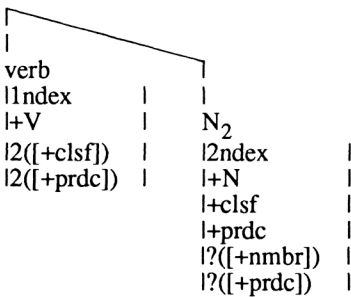
In addition to being regent of a number NP and a PP, a classifier may be a predicate dependent attribute of a noun and a verb. Diagram #30 shows a classifier noun as dependent of a noun and diagram #31 illustrates a classifier noun as a dependent attribute of a verb.

Diagram #30



In diagram #30, the contextual features [2(+clsf)] and [2(+prdc)] illustrate that the regent N_1 expects the adjunct dependent attribute to be a classifier, and that the classifier N_2 is the predicate optionally anticipated by the regent. That is, N_2 is a type of noun-headed relative clause. In matrix two, [1(+Nom)] and [1(+PAT)] cannot be indexed by linking directly to the regent. Instead these features obtain their index from the regent noun via the Relative Clause Chaining Rule. Thus a classifier as a nominal predicate implies a Patient subject coreferential with its regent noun.

Diagram #31



In diagram #31, the contextual features [2(+clsf)] and [2(+prdc)] imply that the verb has an adjunct which bears the lexical features [+clsf] and [+prdc]. The [?(+nmbr)] and [?(+prdc)] features of N_2 mean that N_2 optionally expresses a number and a predicate as dependent attributes. Since this classifier is a direct

dependent of a verb, we can conclude that classifiers are nouns rather than adjectives or a separate part of speech.

4.4.4.2.1 *Classifiers as regents of number noun phrases*

Classifier noun phrases have classifier nouns as heads and are followed by predicate number nouns.

Classifiers are used to represent measurements or amounts for a wide range of items: (1) measurement of land area: *tloñ*, *thvañ*, *je*, *mās*, *ma*, and *sanre*; (2) measurement of cloth: *yau* and *vlaḥ*; (3) capacity or measurement of rice or grains: *je*, *tloñ* and *lih*; (4) serving of set, suit, series or food: *vnaḥ*; (5) yokes or teams of draught animals: *dnem*; (6) counting trees or plants: *tem* and *tnem*; and (7) measurement of metal: *taḥliñ*.

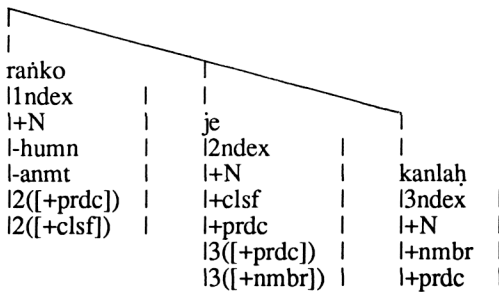
In the following sections, the focus is on the classification of classifier constructions in terms of the syntactic dependency relationships between the regent classifier and its number noun dependent.

4.4.4.2.1.1 *Non-conjoined classifiers*

50. (K.451N:10-1)

rañko	je	kanlaḥ
husked rice	je	one and half
+N	+clsf	
	+prdc	

‘one and a half je of husked rice’



The noun *rañko* ‘husked rice’ is the regent of the classifier *je*. The classifier NP *je* is the regent of the attribute noun *kanlaḥ*. This word occupies the number noun slot. It is obvious that *kanlaḥ* is a number and functions as the dependent predicate attribute of the classifier regent noun *je*.

54. (K726A:7-8)

prak tamliñ 10
 silver tamliñ 10
 +N +clsf
 +prdc

‘10 tamliñ of silver’

The word *tamliñ* is still used in modern khmer as a classifier for quantifying metal such as silver or gold. In this example, the noun *prak* ‘silver’ is the regent of the classifier word *tamliñ*, which in turn is the regent of the predicate number 10.

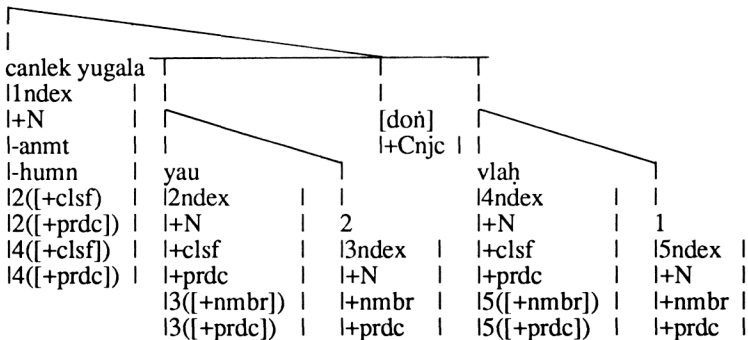
4.4.4.2.1.2 Conjoined classifiers

When two or more classifier noun phrases are dependents of a regent noun, together they form a coordinate classifier NP with a missing conjunction [*don*] or [*dañ*]. Then the regent noun becomes the regent of a missing conjunction, not the classifier NP directly.

55. (K.79:8)

canlek yugala yau 2 vlah 1
 double-cloth yau 2 vlah 1
 +clsf +clsf
 +prdc +prdc

‘2 yau [and] 1 vlah of double-cloth’



The coordinate classifier noun phrases *yau 2* and *vlah 1* are the dependent predicative attributes of the regent noun *canlek yugala*. The classifiers are interpreted as coordinated by a missing conjunction [*don*]. Each has its own dependent predicate number attribute.

In examples 56, 57 and 58, the classifiers *tlon*, *mās*; *je*, *lih*; and *tlon*, *je* are coordinated under the assumed missing conjunction [*don*] respectively.

56. (K.563:6)

sre	tloñ	10	mās	2
riceland	tloñ	10	mace	2
+N	+clsf		+clsf	
	+prdc		+prdc	

‘10 tloñ [and] 2 mace of riceland’

57. (K.124:12)

śunthī	je	3	liḥ	9
ginger	je	3	liḥ	9
+N	+clsf		+clsf	
	+prdc		+prdc	

‘3 je [and] 9 liḥ of ginger’

58. (K.79:16)

sru	tloñ	3	je	2
unhusked rice	tloñ	3	je	2

‘3 tloñ [and] 2 je of unhusked rice’

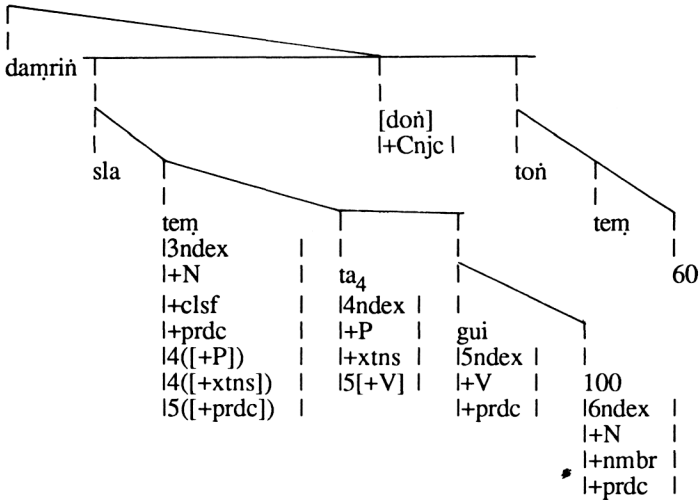
4.4.4.2.2 *Classifiers as regents of prepositional phrases*4.4.4.2.2.1 *Prepositional phrase ta₄ gui*

In the earlier portion of this section, classifier noun phrases were shown as regents of number noun phrases. Syntactically, a classifier regent expects its dependent attribute to bear the lexical features [+nubr, +prdc]. In addition to the nominal predicate as dependent attribute, a classifier regent may have the PP *ta₄ gui* as dependent attribute with *ta₄ [+xtns]* as its complementizer. A detailed analysis of this PP is discussed in section 4.3.

59. (K.54:16)

damriñ	slā	tem	ta ₄	gui	100
plantation	areca	clsf.	that which	be	100
toñ tem	60				
coconut tree	60				

‘the plantation of areca palm, which are 100 trees [and] 60 coconut trees’



In example 59, the PP *ta₄ gui 100* is the attribute of the classifier noun *tem*. The classifier *tem* is the regent of the PP exocentric construction where *ta₄* is the lexical head, *gui* is the secondary lexical head, and *tem* commands the number noun *100*. The classifier *tem* expects its attributes to bear the lexical features preposition [+P], extension [+xtns], and predicate [+prdc]. The preposition *ta₄* requires a finite verb attribute. The verb *gui* is the regent of the predicate number noun *100*.

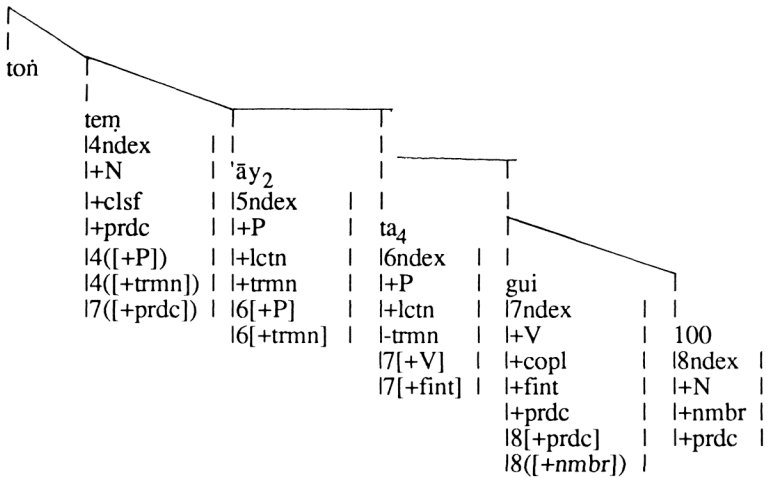
4.4.4.2.2.2 Prepositional phrase 'āy₂ ta₄ gui

The PP 'āy₂ ta₄ gui is a double exocentric construction where the locational preposition 'āy₂ is the lexical head and the preposition ta₄ is the co-lexical head and the regent of the copula verb gui. A more detailed analysis of this construction is given in section 4.3.

60. (K.54:7)

damrriñ	nirvvāna	ton	tem	'āy ₂	ta ₄	gui	100
plantation	Nirvvāna	coconut	clsf.	at	that	be	100

'Nirvvāna plantation, 100 coconut palms thereon'



In example 60, the classifier *tem* is the regent of the PP *'āy₂ ta₄ gui 100*. This is a double exocentric construction in which the locational preposition *'āy₂* is the lexical head, and *ta₄* is its secondary lexical head.

4.4.4.2.3 Classifiers as dependents of noun phrases

Nouns can be divided into two subclasses on the basis of the way in which they are counted: mass nouns [+N, +mass] and non-mass nouns, or 'count nouns' [+N, -mass]. In section 4.4.4.2.1, those classifier noun phrases are used to assist seven or eight general groups of nouns when they are measured or counted. The group of nouns including nouns such as riceland, animals, grain, cloth, food or metal, and trees or plants take classifiers as dependent attributes. There are only a few specific nouns that can be counted without classifiers; however, some classifiers are optional when counted.

Classifier noun phrases are not necessarily the sole adjunct of a noun; they can also precede or follow other co-dependents.

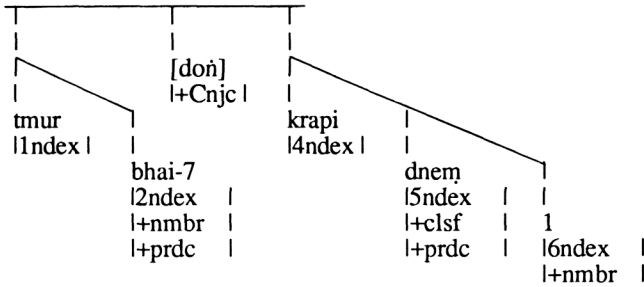
In Modern Khmer, cows, buffalo and some other animals are counted by heads with an optional classifier. In pre-Angkorian language there are so far no data on counting animals by 'head'. When animals are counted as a 'yoke' or as a 'team', then the classifiers *dnem* do cooccur with the head nouns. Therefore, all nouns referring to live animals have number nouns as immediate attributes when counted individually.

Example 61 shows that when a noun requires a classifier as dependent, that noun can no longer link directly to the number noun as dependent. Rather, the classifier takes precedence over the number noun.

61. (K:582:6)

tmur bhai 1-7 krapi dnem 1
 bull 27 carabao pair 1

‘27 bulls [and] one pair of carabao’



The noun *tmur* is the regent of the number noun *bhai-7*. But the noun *krapi* requires a classifier *dnem* as dependent when counted in terms of a pair; in turn, *dnem* is the regent of the predicate number 1.

4.4.4.2.4 Classifiers as dependents of verbs

As mentioned at the beginning of the classification section 4.4.4.2, classifiers can be lexical heads of dependent attributes of nouns and verbs. Example 62 presents good evidence for treating classifiers as nouns, since it would make no sense for classifiers to function as dependents of verbs if they were in fact members of a separate nominal word class.

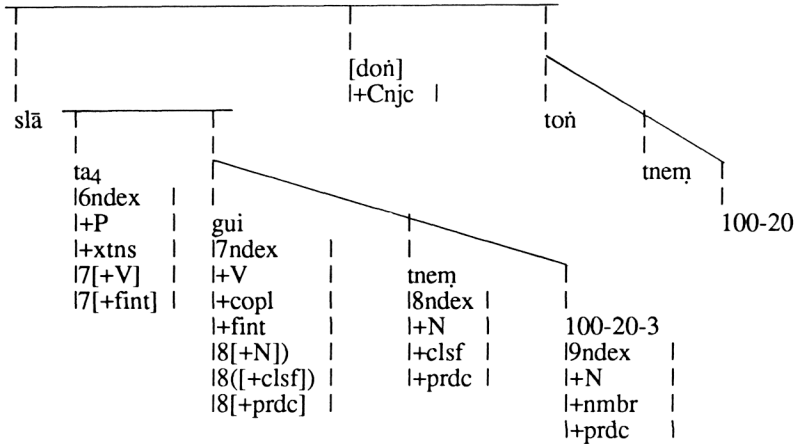
Example 62 shows two classifiers, one as an attribute of a verb and the other as an attribute of a noun.

62. (K.505:15)

damriñ 'āy ñiñ vihār slā ta gui tñem
 plantation at side temple areca that which be clsf.

100-20-3 toñ tñem 100-20
 123 coconut clsf. 120

‘the plantation at the side of the temple: 123 areca palms [and] 120 coconut palms’



In this example, the *slā ta gui tñem 100-20-3* is in coordination with *toñ tñem 100-20*, with a missing conjunction [*doñ*]. The classifier *tñem* in the first phrase is the predicate nominal dependent of the copula verb *gui* and the regent of the predicate number *100-20-3*. The second classifier *tñem* is the predicate attribute of the regent noun *toñ* and the regent of the number *100-20*. Notice that except for the *ta₄ gui*, the coordinated elements [*slā ta gui [tñem 100-20-3]*] and [*toñ [tñem 100-20]*] are identical in form and function, so that the simplest assumption is that they are identical in structure as well; that is, both conjuncts are [+N, +prdc].

In conclusion, classifiers are dependents of copula verbs, which means that they are predicate nouns.

4.4.4.3 Number noun phrases

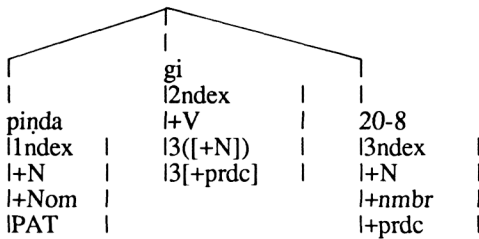
Number words are analyzed as adjectives in the grammars of many languages. However this analysis of Old Khmer proposes an analysis of numbers as nouns that have specific lexical features [+N, +nmbr]. This analysis is based upon the following observations: (1) the Old Khmer language does not otherwise have adjectives as a clearly definable syntactic wordclass; and (2) it is natural in Old Khmer to have nouns modifying other nouns. A number word can either be (a) an equational predicate dependent of another NP; or (b) the [+prdc] head of a free NP, as shown by its ability to occur as the direct non-subject dependent of a copula verb, a position which in the usual lexicase analysis selects a non-verb [+prdc].

Example 63 shows a number word as a clause-level predicate noun.

63. (K.134:17)

piṅda gi 20-8
total be 28

‘the total are 28’

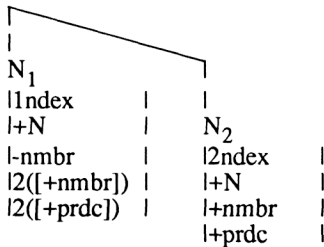


The copula verb *gi* has *pinda* as the Nominative Patient subject and *20-8* as predicate complement. Since *20-8* occupies the predicate complement position, it is assumed that *20-8* is a predicate noun. In this data only the predicate noun, the verb, and the predicative verbal clause can follow the copula verb *gi*. Since a number is a predicate and a dependent of a copula verb *gui ~ gi*, this implies that it functions as the nominal head of a free NP structure.

Noun phrases with just one immediate attribute are examined in this chapter. In this section, first the distribution of the number NP is examined, and second the types of relationships that obtain between the regent and the dependent attribute are analyzed and described.

A number noun can be (1) a dependent of the head noun of an NP (diagram #32), (2) the attribute of an intransitive copula verb *gui ~ gi* in an exocentric construction (diagram #33), or the regent of another NP (diagram #34).

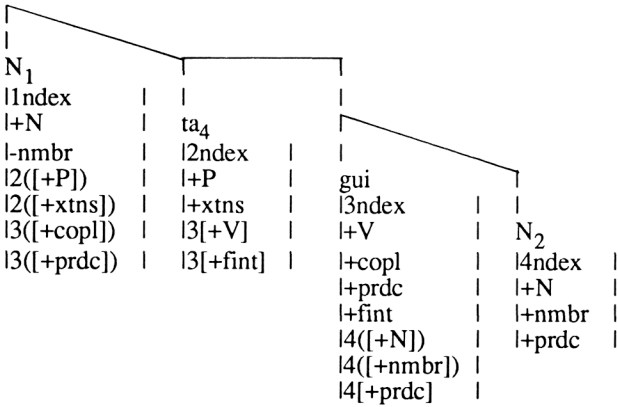
Diagram #32



In diagram #32, the word N_1 has $[2([+nmbr])]$ and $[2([+prdc])]$ as contextual features. These features indicate that N_1 expects its dependent attribute N_2 to bear $[+nmbr]$ and $[+prdc]$ as lexical features. The number N_2 functions as a predicate complement to its regent N_1 .

A number noun can also appear as the dependent of a copula verb *gui ~ gi*. The verb *gui ~ gi* is in an exocentric construction with the preposition ta_4 , as illustrated in diagram #33.

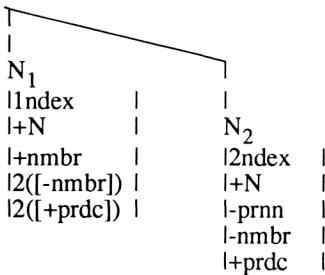
Diagram #33



In diagram #33, N_1 is the regent of the PP ta_4 *gui* which forms an exocentric construction. The word N_1 has these contextual features [2([+P]), 2([+xtns]), and 3([+copl]), 3([+prdc])], which imply that N_1 expects its dependent [2ndex] to be a preposition ta_4 [+xtns], and its [3ndex] to be a copula verb *gui* ~ *gi*. It also means that the following S is a relative clause with ta_4 as the complementizer. In *gui*[3ndex] the contextual features [4([+N]), 4([+nmbr]), 4[+prcd]] imply that it requires its dependent to be a predicate noun.

In addition to being an attribute, a number noun can be the head of a free NP and the regent of another noun, as shown in diagram #34.

Diagram #34



In this diagram, the regent N_1 is a number and has a predicate N_2 as its dependent attribute.

This study now examines these three types of constructions: (1) number nouns as dependent attributes of other nouns; (2) number nouns as dependent attributes of the copula verb *gui*; and (3) number nouns as the regents of certain types of nouns.

4.4.4.3.1 *Number nouns as dependents of nouns*

This portion of the paper focuses on number nouns as attributes of other nouns.

For the purpose of organizing the data, the examples are arranged based on the semantic and grammatical properties of the regent classifier noun (example 64), common nouns (examples 65 to 68), or proper nouns (example 69). It should be kept in mind that attribute number nouns always function as predicates to their regents.

64. (K.79:14)

sre	'amnoy	poñ	syam	je	2
ricefield	gift	Sir	Syam	je	2
				+N	+nmbr
				+clsf	+prdc

'ricefield the gift of Sir Syam: 2 je'

65. (K.607:18)

sre	'āy	jeñ	vnam	5
ricefield	at	Jen	Vnam	5
+N				+nmbr
-anmt				+prdc

'5 ricefields at Jen Vnam'

66. (K.582:6)

tmur	bhai 1-7
cow	20 + 7
+N	+nmbr
+anmt	+prdc

'27 cows'

The number *bhai 1-7* is the predicate attribute of the regent *tmur*. Notice the way this is written and the conventional interpretation of the data, where *bhai 1-7* means 20, multiplying by 1, plus 7.

67. (K.451S:11)

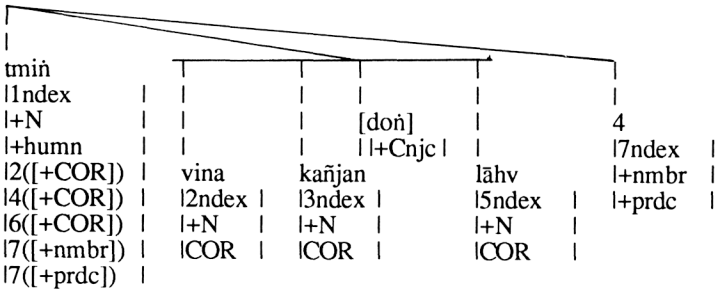
sarvvapinda	savālarvrdha	gi	tñam	40-10-8
total items	total young and old	be	slaves	58
			+N	+nmbr
			+humn	+prdc

'the total including young and old are 58 slaves'

68. (K.600E:1)

tmiñ	vina	kañjañ	lāhv	4
player	vina	kañjañ	lāhv	4

‘four players of vina, kañjañ and lāhv’



69. (K.600E:4)

jmah	ge ram	carumafi	1	priyasena	1
name	dancer	Carumafi	1	Priyasena	1
		+N	+nmbr	+N	+nmbr
		+prpr	+prdc	+prpr	+prdc

‘names of the dancers: one Carumati, one Priyasena’

Number nouns function as equative predicate attributes their regents. Possible nominal regents of number nouns are common nouns, mass nouns, proper nouns, and classifiers.

4.4.4.3.2 *Number nouns as dependents of the verb gui*

As mentioned at the beginning of section 4.4.4.3.1, in addition to being the dependent of other nouns, number nouns may be a dependent of the copula verb *gui* ~ *gi* with (1) *gui* as the main verb of the clause (see example 88) or (2) *gui* as co-head of *ta* in a prepositional exocentric construction.

In example 70, the number 100-20-3 is the predicate dependent of the copula verb *gui*.

70. (K.9:30)

'amñoy	sugan	ai	tñañ	tpal	1	slā	tem
gift	Sugan	at	Tñañ	grove	1	areca	clsf.

ta	gui	100-20-3
which	be	123

‘the gift of Sugan at Tñañ, 1 grove in which are 123 areca palms’

4.4.4.3.3 *Number nouns as dependents of preposition ta₄*

In this section, the preposition *ta₄* is the regent of the number noun. As mentioned in section 4.3, the preposition *ta₄* acts as a complementizer that cooccurs with two types of dependents: nominal predicate noun phrases with [+N, +prdc] heads, and verbal clauses with [+V, +fint] heads.

Example 71 illustrates the occurrence of *ta₄* functioning as regent of a number noun.

71. (K.90:8-10)

nivandha	ge	ta	gui	utsava	ta ₄	pon	hvat
purveyance	they	of which	be	utsava	of which	4	times
				+P			+nmbr
				+xtns			+prdc
ta	gui	cnam	ta ₄	moy			
of which	be	year	of	one			
			+P	+nmbr			
			+xtns	+prdc			

‘their purveyance which is Utsava of 4 times a year’

4.4.4.3.4 *Numbers as regent nouns*

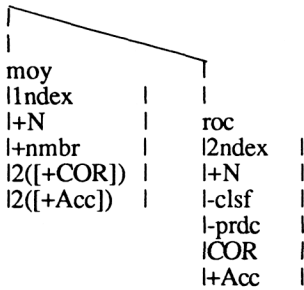
Number nouns can be subcategorized into ordinal numbers and cardinal numbers. The nouns that mark the calendar day may be called ordinal numbers: they are always the lexical heads of their NPs.

Jacob (1965:152) noticed that when the numeral is written as words (not in figures), the word-order of the numeral and the coefficient is switched.

72. (K.138:1)

moy	roc
1	waning moon

‘the first day of the waning moon’



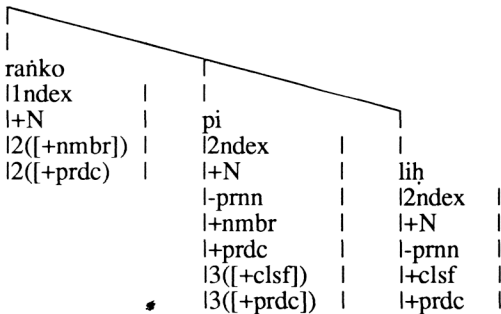
In Modern Khmer *moy roc* means ‘the first day of the waning moon’, and *tñai tii moy roc* means ‘the day (which) is the first day of the waning moon’. In example 97, the Old Khmer *moy roc* is the same as in Modern Khmer. The number *moy* functions as an ordinal number that is equivalent to the English ‘the first’. *Moy* is the regent of the word *roc*.

Most of the examples in the data have the number to the right of the classifier. The dependent of the classifier can be either a number NP or a PP. However, there are some data in this study that show that when a classifier noun functions as a dependent of a number noun, the classifier noun does not have a number noun as its dependent.

73. (K.154A:5)

raŋko pi lih
 husked rice 3 lih

‘3 lih of husked rice’



Typically, the classifier noun is followed by the number. But in example 97, the classifier *lih* follows the number ‘3’ *pi*. Three possible analyses for this example are explored here:

1. The noun *raŋko* is the regent of *pi lih* where the classifier *lih* is the regent of the dependent number noun *pi*. This analysis is not correct because it violates both the general restriction against left branching and the specific properties of classifiers established in section 4.4.4.2.

2. The noun *raŋko* is the regent of two separate predicate noun phrases: (1) the predicate NP *pi* and (2) the predicate NP *lih*. This analysis shows a number counting a mass noun with no intervening classifier, which is not interpretable. Thus this interpretation is not likely to be correct either.

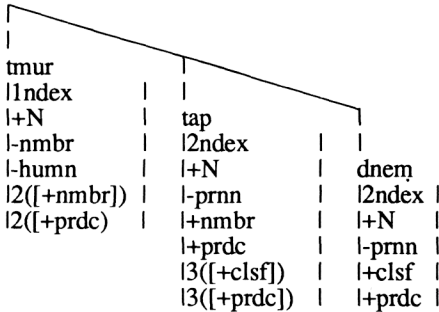
3. The noun *raŋko* is the regent of the predicate attribute *pi*, and *pi*, in turn, is the regent of the predicate attribute noun *lih*. This type of right-branching sequential nominal attribution is normal in our data. As seen in section 4.4.4.2, a classifier may be the predicate attribute of a noun, thus the noun *pi* can be the regent of the noun *lih*. This analysis is preferable because, although the mass noun regent

is counted directly, the ‘units’ are identified as mass units; i.e., ‘husked rice which is three units which are *lih*’.

74. (K.388C:5)

tmur tap dnm̄
 cow 10 yoke

‘10 yokes of cows’



In example 74, the word for number ‘ten’ is spelled out as *tap* and followed by the classifier *dnm̄*.

The number *tap* is the predicate attribute of the regent noun ‘cows’ *tmur*. The predicate noun *tmur* is the regent of the classifier noun *dnm̄*.

In examples 75 and 76, the words *tñai* and *hvat* are classifiers of days and time respectively. Since the classifier is counted by the regent, it does not need to be counted again by a dependent.

75. (K.904A:21)

Kpoñ	kammratañ	'añ	śrīsenamukhavijayā	oy
Sir	K.	'A	Śrīsenamukhavijayā	give
rañko	je	kanlahha	moy	tñai
rice	je	one-half	one	day
			+N	+clsf
			+nmbr	+prdc

‘Sir K. ‘A. Śrīsenāmukhavijayā gave one-half je of rice every or each day’

76. (K.904A:29)

moy	hvat
one	time
+N	+clsf
+nمبر	+prdc

‘one time or once’

These are some examples mentioned by Jacob (1965:152) which show that number nouns precede classifier nouns.

ku	moy 'nak	ku	moy 'nak	sin
female slave	one person	female slave	one person	more

‘one female slave, one female slave in addition’

ton	mvay	tem
coconut	one	tree

‘one coconut tree’

sre	mvay	pada
ricefield	one	foot

‘one foot of ricefield’

In example 77, the number ‘one’ *moy* precedes the classifier noun and, in turn, the classifier is followed by another number *l*.

77. (K.80:10)

sre	moy	sanre	l
ricefield	one	clsf.	1

‘one ricefield’

This clause can be interpreted in several ways:

1. ‘The ricefield one which is a single unit’. The NP *sre* is the regent of the single noun *moy* [+sngl, +prdc] and the NP *sanre l*. Syntactically, this structure is acceptable because as we have seen, the presence of the classifier is optional with *sre*. The classifier NP *sanre* [+prdc] is the regent of the dependent predicate number *l*. This is also correct because when these two words cooccur, the classifier takes the number as its dependent. The classifier NP *sanre l* is a relative clause to the regent noun *sre*.

2. ‘One ricefield (which is called) Moy’. *Moy* is treated as a proper noun and is the predicate attribute of the regent *sre*; the NP *sanre l* is treated as the classifier attribute of the same *sre*. This example implies that one can interpret the information in terms of the identity of the ricefield followed by its measurement.

3. ‘One ricefield’. ‘One [unit] of ricefield’. This interpretation shows that there are two independent NPs *sre moy*, and [*sre*] *sanre moy* by treating [*sre*] as a gapped regent of the second NP [*sre*] *sanre l*.

The first analysis is preferable because it is simple and consistent with the interpretation of the classifier *sanre* as a measure of area rather than unit.

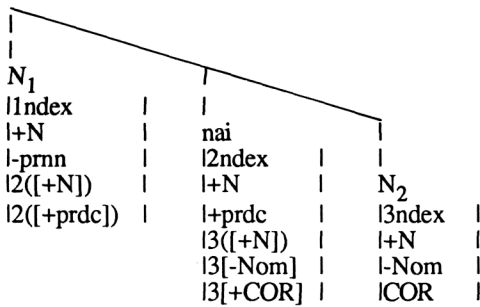
All of these examples show that a number noun can be the head of its own NP, thus it is a noun, not an adjective.

4.4.4.4 *Indirect possessive noun phrases*

Based on the Old Khmer Dated Inscriptions, there are two categories of possessive NPs: the direct possessive NP and the indirect *nai*-mediated possessive NP. The direct possessive NP is discussed in section 4.4.1.1. This section focuses on the indirect possessive NP.

A possessive NP is marked with the case form *feature non-nominative [-Nom]*. It must have a nominal regent, and is interpreted as bearing the case relation Correspondent allowed or required by its regent. In the indirect possessive NP, the regent of the possessive NP is the noun *nai* ‘possession of’. *Nai* is used optionally to clearly mark a possessive construction in ambiguous contexts, and links the possessor noun N_2 to the possessed noun N_1 . The Old Khmer word *nai* and the Modern Khmer word *nai* are the same (Jenner 1981:175). This structure is illustrated in diagram #35.

Diagram #35



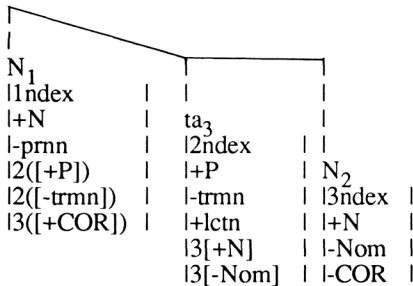
‘ N_1 which is the possessed (*nai*) of N_2 ’

In diagram #35, the noun N_1 is the head of the NP and the regent of *nai*. As its dependent, *nai* bears the required [+prdc] feature. In the *nai*[2ndex] matrix, the contextual features [3[-Nom], 3[+COR]] mean that *nai* obligatorily requires a non-nominative dependent that bears the Correspondent case relation. N_2 is the dependent of *nai*. N_2 bears the COR case relation and is the dependent possessive complement of its regent *nai* [+N, +prdc] ‘possession of’. *Nai* is used optionally

to clearly mark possessive constructions in ambiguous contexts. It links its possessor, N_2 , to the higher regent N_1 , since N_2 is the possessor of *nai* and *nai* is equated with N_1 . The word *nai* is syntactically similar to the Thai word *khǒng*₂, the descriptive nominal predicate attribute (Savetamalya 1989:191).

In addition to the construction in diagram #35, the possessor N_2 cooccurs with the preposition *ta*₃ as the secondary lexical head of the PP (see section 4.3.1.3.2). This prepositional NP is illustrated in diagram #36.

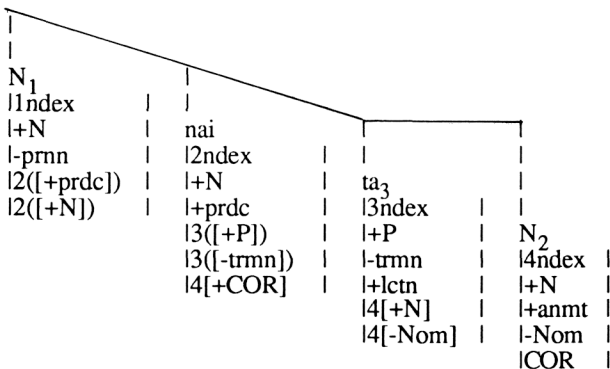
Diagram #36



In diagram #36, N_1 is the regent of the PP exocentric construction, where *ta*₃ is its lexical head and N_2 is the secondary lexical head of the construction. The regent N_1 expects a non-terminus preposition dependent and a prepositional object that bears the COR case relation. *Ta*₃ is the dependent of N_1 and the regent of N_2 . N_2 functions as the possessor of N_1 , the regent of the PP, and bears the COR case relation required by the nominal regent of the second NP.

In addition to these two types of structures, the possessive NP in Old Khmer Dated Inscriptions allows one more structure, represented in diagram #37, which is the combination of diagrams #35 and #36.

Diagram #37



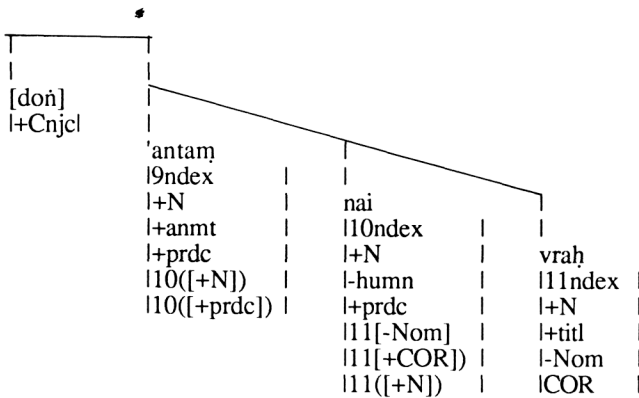
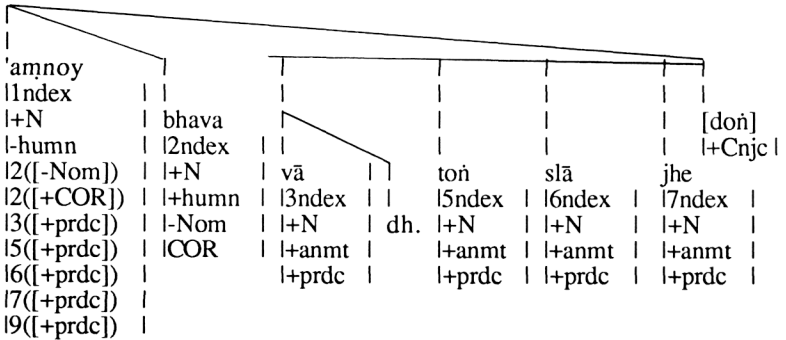
80. (K.54:17-8)

'amñoy bhavakumāra vā dharmmasāra toñ
 gift Bhavakumāra male slave Dharmmasāra coconut

slā jhe 'antamñ nai vrah kamratāñ
 areca palms trees plants belonging to V. K.

'añ daiy kamluñ gui rudrāsrama
 'A. other inside Rudrāsrama

'the gift of Bhavakumāra: male slave Dharmmasāra, coconut trees, areca palms, trees, [and other] plants belonging to other V. K. 'A. inside Rudrāsrama'



In example 80, the regent 'amñoy has *bhavakumāra* [COR] as its possessive dependent attribute. The gift already has one possessor, which is *Bhavakumāra*. The gift is the coordinate predicate NP which is *vā dharmmasāra, toñ, slā, jhe, 'antamñ* 'slave, coconut trees, areca palms, trees and plants'. This coordinate predicate NP with missing a coordinate conjunction [*doñ*] is the regent of the word

nai. *Nai* is the regent of the possessor noun *vraḥ* [COR]. Notice that the direct possessive NP *bhavakumāra* is followed by the indirect possessive NP, and the presence of *nai* is needed to clearly mark the second possessor at the end of a long list of gifts.

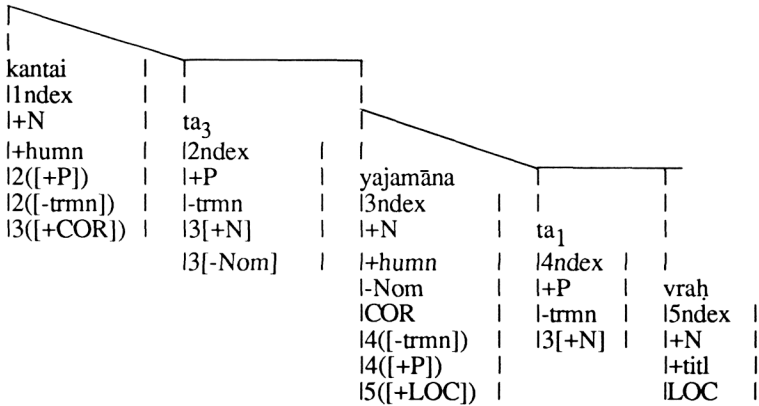
4.4.4.4.2 *Possessor noun phrases cooccurring with ta₃*

The focus here is to examine the relationship between the possessor N₃ and its regent *ta₃*. As demonstrated in the preposition section 4.3.1.3.2, *ta₃* has location and non-terminus [+lctn, -trmn] as lexical features and [?(+N)] as a contextual feature, which means that it is the lexical head of an exocentric construction whose phrasal co-head must be a NP. Examples 81 to 83 illustrate this type of construction.

81. (K.926:15)

kantai	ta ₃	yajamāna	ta	vraḥ					
woman	of	sacrificer	to	vraḥ					
kloñ	mratañ	vrau	1	kloñ	yāñ	au	1	ge	2
Kloñ	Mratañ	Vrau	1	Kloñ	Yāñ	Au	1	they	2

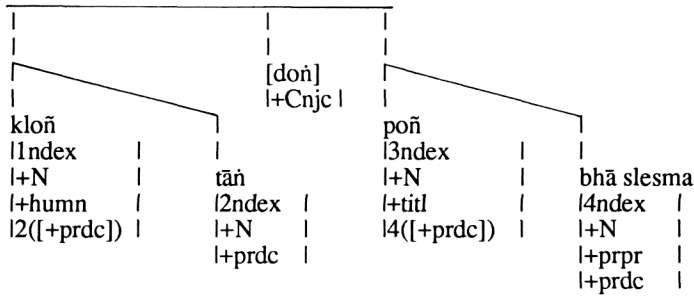
‘the women of the sacrificer to the Vraḥ, one Kloñ Mratañ Vrau [and] one Kloñ Yāñ Au, they: 2’



82. (K.154A:10)

sabhā	ta	mār	ta	tāñ	gi	mratañ	purusapala	bhāga
council	of	Mar	of	Tāñ	be	Lord	Purusapala	Holy
mratañ	sudarśana	bhāgavata	mratañ	bhavāditya				
Lord	Sudarśana	Holy	Lord	Bhavāditya				

‘the council of Mār [and] of Tāñ consisting of the Holy Lord Purasapala, the Holy Lord Sudarśana, [and] the Lord Bhavāditya’



Without the presence of *ta₃*, this tree represents a coordinate predicative NP with a missing conjunction [doñ]. The gloss for this one would be ‘the Baron Tāñ and Sir Bhā Slesma’. The point to be made here is that the presence of the preposition *ta₃* in this type of structure is not optional, because it serves a function that requires its co-lexical head to bear the COR case relation. Thus the presence of *ta₃* is required to clearly mark the Correspondent case relation when the clause is ambiguous or might otherwise be interpreted differently. *

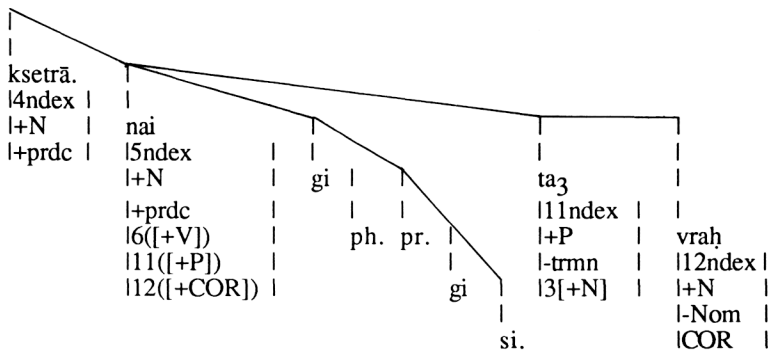
4.4.4.4.3 *nai* as the regent of a possessor noun with *ta₃* as its co-head

Example 84 shows the predicate noun *nai* as the regent of its dependent possessive PP attribute.

84. (K.904B:18-9)

'ampal	dāsadāsi		gomahiṣa	
all	male and female slaves		cows and carabao	
ksetrārāma	nai	gi	phoñ	pre
groves and fields	possession of	be	also	use
gi siddhi	ta	vrah		
be perfection (legal sense)	of	Vrah		

‘all of the slaves, the cows, the carabao, the fields [and] the groves belonging to them, are assigned to the exclusive use of the Vrah’



The tree representation starts from the fourth index. Here *nai* is the possessor of the entire preceding list of gifts, and serves as antecedent of the verbal relative clause construction *gi phon pre gi siddhi*. *Nai* is also the regent of the PP *ta₃ vraḥ*, so that *nai gi phon pre gi siddhi ta₃ vraḥ* is ‘possessions of the Vrah’. Also this is not an odd structure, as we have seen in section 4.4.3. *Nai* requires its possessive dependent to bear the COR case relation; thus, *vraḥ* functions as COR case relation to *nai*, the regent of the PP.

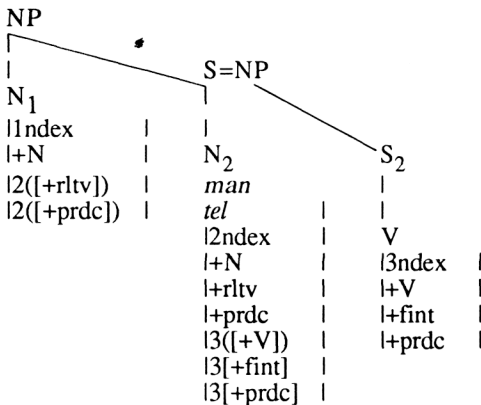
4.4.4.5 Indirect verbal relative clauses

As mentioned earlier, there are three types of relative clause structures found in Old Khmer Dated Inscriptions in which the N_1 is modified by an attribute sentence: (1) the verbal relative clause, (2) the nominal equative predicate attribute, and (3) the indirect verbal relative clause. This section focuses on the indirect verbal relative clause.

In the indirect verbal relative clause construction, the N_2 *man* or *tel*, which bears the lexical feature [+rltv], is found (1) between the head noun of a NP and a following verbal relative clause, or (2) between the preposition *ta₄* and the S of the relative clause.

There are at least two possible syntactic analyses for this construction, differing in the relationship postulated to hold between N_2 and the following S. These analyses are illustrated in diagrams #38 and #39.

Diagram #38

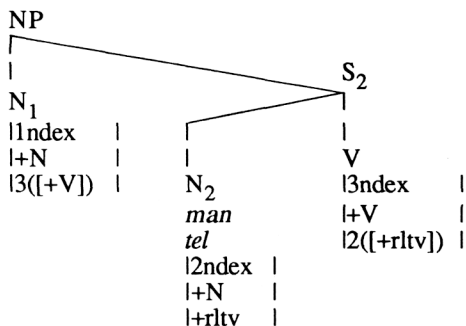


In the analysis represented in diagram #38, N_2 could, in principle, be either an attribute modifying a regent N_1 , or the regent of a free NP.

The [2([+rltv])] and [2([+prdc])] imply that N_2 , the nominal relative noun *man* or *tel*, is functioning as a predicate attribute of the regent N_1 . In the lexical

matrix of N_2 , [3[+V]], 3[+fint]] and [3[+prdc]] mean *man* or *tel* allows a verb as its dependent and requires the verb to be a predicate finite complement. Thus *man* and *tel* function as complementizers, the marker of the beginning of a verbal relative clause. In addition, this relative noun *man* or *tel* is coreferential with its antecedent, which is its regent N_1 .

Diagram #39



In diagram #39, [3[+V]] in N_1 shows us that the verb is an endocentric dependent of N_1 , and [2([+rltv])] indicates that this verb expects a relative noun as dependent. The relative noun *man* or *tel* is the dependent of the verb in the relative clause S_2 , and this V, in turn, is the direct attribute of the N_1 .

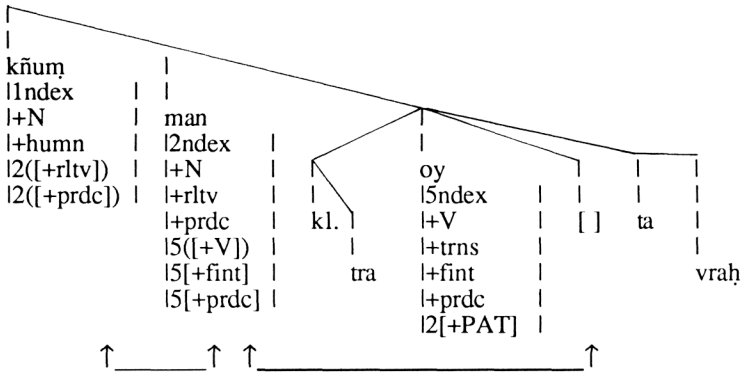
Thus, there are two possible types of analysis to propose: (1) that the predicate relative N_2 is the regent of S_2 and is outside of this verbal relative clause S_2 , as in Thai (Savetamalya 1989:120); or (2) that the relative N_2 is a dependent of the verb inside of the verbal relative clause S_2 , as in English. Examples 85 and 86 illustrate each alternative analysis.

4.4.4.5.1 Example of *man* or *tel* analyzed as regent of a verbal relative clause

85. (K.561:27-28)

kñum	man	kloñ	trasok	oy	ta	vrah
slave	whom	Baron	Trasok	give	to	Vrah

‘slaves whom the Baron Trasok gave to the Vrah’



In word 1, the contextual features [2(+rltv)] and [2(+prdc)] imply that the relative predicate noun *man* is an adjunct to the noun *kñum*. In word 2, the contextual features [5(+V)], [5(+prdc)] and [5(+fint)] imply that the noun *man* requires the verb to be a predicate, finite complement.

In this phrase, *kñum* [+humn] is the regent of *man*. *Man* [+rltv, +prdc] functions as the predicate attribute to the regent noun *kñum*, and, in turn, is the regent of the verb *oy*, the head of the sentence *kloñ trasok oy ta vrah*. *Man* links its regent *kñum* to its dependent clause *kloñ trasok oy ta vrah*. *Man* directly dominates or cap-commands the following relative verbal clause and is in turn cap-commanded by the head of the NP, to which it bears a predicate relation. In the relative verbal clause *kloñ trasok oy ta vrah*, there is a missing object of the verb *oy*, because the verb *oy* is a transitive verb, which means that it expects a Patient, an object that bears the Accusative case form. In the PP *ta vrah* ‘to the Vrah’, *vrah* is the indirect object of the verb *oy* ‘give’, and *vrah* [LOC, +dvin] bears the Locus case relation. Semantically *man* represents the missing object. *Man* [+prdc] is coreferential with both the head noun *kñum* and with the missing object of the verbal relative clause, which thereby establishes a link of coreference between the head noun *kñum* and the missing argument of the verb *oy*.

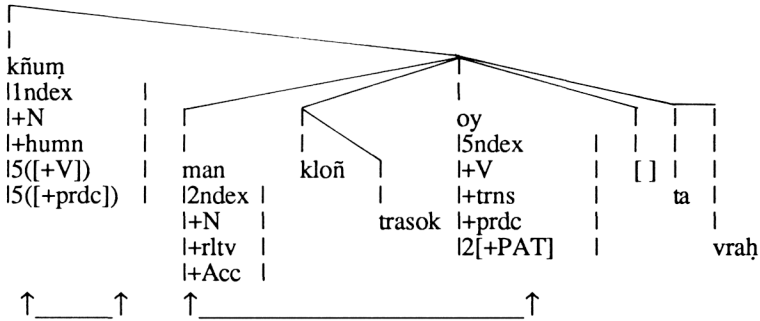
4.4.4.5.2 Example of *man* or *tel* analyzed as dependent of a verbal relative clause

According to the analysis in diagram #39, N₁ is the head of the entire NP, and is followed by a dependent S₂. S₂ has the verb V as the head and other elements as attributes, including N₂ [+rltv].

86. (K.561:27-28)

kñum man kloñ trasok oy ta vrah
 slave whom Baron Trasok give to Vrah

‘slaves whom the Baron Trasok gave to the Vrah’



In example 86, *kñum* [+humn] is the regent of the verb *oy*, and *oy* is the head of the relative clause *man kloñ trasok oy ta vraḥ*. The transitive verb *oy* has *kloñ trasok* as subject, *ta vraḥ* as its indirect object, and *man* as a clause-initial [+Acc] topic dependent of the verb *oy*. *Man* is coreferential both with the head noun *kñum* and with the missing object of the head verb of the verbal relative clause *oy*.

Between the two alternative analyses just considered, the analysis in diagram #38 is considered to be preferable to the one in diagram #39 based on evidence discussed in the following section. This preference implies that the word *man* or *tel* with the lexical feature [+prdc] is the regent of a dependent verbal relative clause and links its regent to its dependent relative clause attribute.

4.4.4.5.3 Analysis of *man* or *tel* as a [+prdc] regent of a verbal relative clause

This section will show that *man* or *tel* is a relative noun and should function as a regent rather than the clause-internal topic of the relative clause NP-S construction.

4.4.4.5.3.1 *gui* ~ *gi* as regent of *tel* [+prdc]

As demonstrated in section 2.1.1.2.1, *gui* is an intransitive copula verb and must have a predicate dependent noun as its attribute. In example 87, the copula verb *gi* is the regent of the clause, and is followed immediately by *tel* and a finite clause with a missing direct object. As a copula verb, *gi* requires a following [+prdc] NP, and since by the analysis represented in diagram #39, *man* plus the following verbal clause is not an NP, only the analysis represented in diagram #38 can satisfy this requirement. Thus, the relative noun *tel* must be the head of the whole construction following *gi* and must bear the [+N, +prdc] lexical features in order to satisfy its regent's requirement.

87. (K.154B:5-6)

gi tel mratāñ devasvāmi oy ta poñ śruta nu cam ta vraḥ
 is what Lord Devasvāmi give to Sir Śruta to tend of Vraḥ

'This is what Lord Devasvāmi has given to Sir Śruta to tend [to the needs of] the Vraḥ.'

4.4.4.5.3.2 *gui* ~ *gi* as regent of *man* [+prdc]

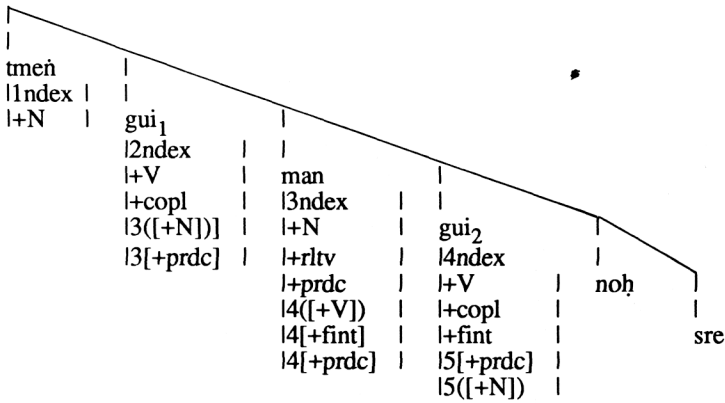
Example 89 shows *man* as a predicate noun which is the head of a free NP and the regent of S that follows it.

89. (K.79:21)

tmeñ gui man gui noḥ sre tel oy
owner is the one who is that ricefield which give

ta vraḥ poñ rudrabhava
to Vraḥ Sir Rudrabhava

‘owner of his own ricefield, which [he hereby] gives to the shining one: Sir Rudrabhava’



The copula verb *gui*₁ requires a predicate noun [+N, +prdc] as its dependent, and *man* satisfies this requirement. This sequence *man gui noḥ sre tel oy ta vraḥ poñ rudrabhava* is a free NP, and has *man* as its regent. The verb *gui*₂ is the head of its own clause and the dependent of the predicate noun *man*.

4.4.4.5.3.3 *gui*~*gi* as regent of PP with *man* [+prdc] as its secondary lexical head

90. (K.49:13)

'ampal kñum tmur krapi sre damriñ
all slaves cattle buffaloes ricefields plantation

gui ta man ge pu caḥ 'añ oy ta vraḥ
are of what they Elder Lord Our give to Vraḥ

‘All slaves, cattle, buffaloes, ricefields [and] plantation are what they our Elder Lord gave to the Vrah.’

4.4.4.5.3.4 [*NP N - COR - [+N, +prdc]*]: *man/tel - S as a [+prdc] attribute*

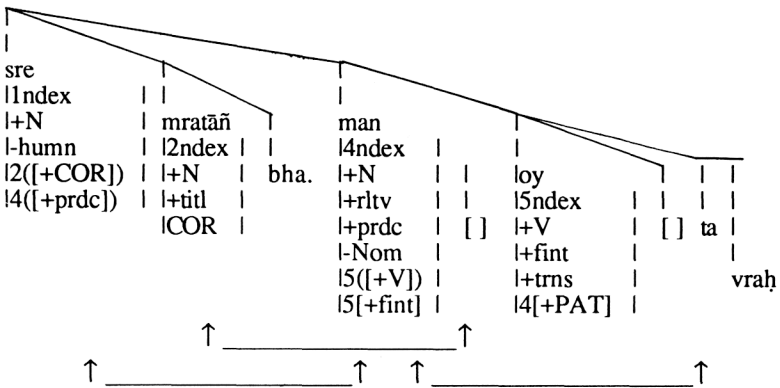
Syntactically, a noun can have an NP as its dependent. The nominal dependent can bear a case form CF and either a case relation CR or [+prdc] as required by its regent. In the multiple dependent constructions (section 4), in terms of pre-Angkorian regular grammar order, this analysis shows that when a noun cooccurs with both a possessive [COR] and an equative [+prdc] dependent, the possessive dependent always precedes its predicate co-dependent.

Example 91 shows an NP headed by *man* [+prdc]; preceded by a possessive co-dependent NP. This type of regent-dependent relationship reinforces and conforms to the finding above (possessive-predicate sequencing). In addition, the regent of the relative noun *man* or *tel* is interpreted as coreferential with it through the (RCCR).

91. (K.493:27)

sre mratāñ bhā kusuma man oy ta vraḥ
 ricefield Lord Bhā Kusuma which give to Vrah

‘ricefield of Lord Bhā Kusuma, which [he] gives to the shining one’



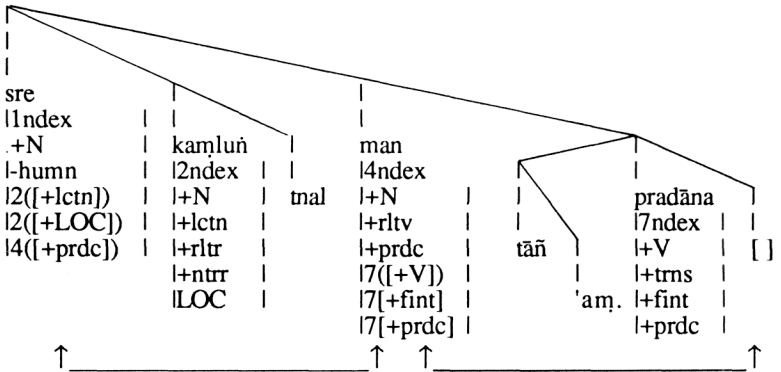
4.4.4.5.3.5 [*NP N - LOC - [+N, +prdc]*]: *man/tel - S as a [+prdc] attribute*

In example 92, the locational NP is followed by its co-dependent predicate NP *man*, supporting the analysis proposed here that *man* and *tel* constructions are NPs with head nouns bearing the feature [+prdc]. This analysis is in accord with the regular LOC - [+prdc] dependent order in terms of the relationship among the co-dependents of a noun.

92. (K.493:26)

sre kaṃluñ tnal man tāñ 'aṃvi pradāna
 ricefield inside elevated road which retainer 'Aṃvi gave

'the ricefield inside of the elevated road which the retainer 'Aṃvi gave (me)'



The four types of examples show: (1) that the *man* or *tel* construction is a free NP which may occur as the predicate dependent of a copula verb (examples 87, 88 and 89); (2) that *man* or *tel* may be the predicate dependent of the *ta*₄ in the exocentric construction, where *ta*₄ in turn is the dependent of a copula verb (example 90); (3) that *man* or *tel* [+N, +prdc] confirms and strengthens the pattern of pre-Angkorian regular grammar in 'possessive-predicate sequencing' (example 91); and (4) 'locative-possessive sequencing' (example 92) which are established in the multiple dependents section 4.

Earlier it was stated that the relative noun *man* is found between (1) its regent noun and its dependent verbal relative clause S₂ and (2) between its regent preposition and its dependent verbal relative clause S₂. In the following section, the focus is on *man* functioning as a dependent of various types of nouns.

4.4.4.5.4 *man* as the dependent of a noun

Example 93 presents the verb in the relative clause as having a missing agent and a missing patient. These missing constituents are semantically coreferential with their antecedents by zero anaphora and RCCR respectively.

93. (K.749:11-4)

kñuṃ mratāñ kirttiḡaṇa man oy ta ge kvan
 slave Lord Kirttiḡaṇa whom give to person-children

nu ge paṃre 'āy ta vraḡ kaṃmratāñ 'añ śrī gambhīreśvara
 and servants at to V K. 'A. Śrī Gambhīreśvara

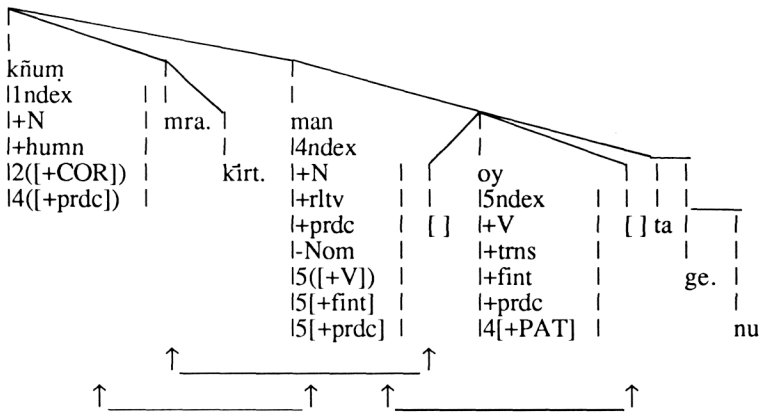
man oy ta harigana kñuṃ tai ku 'me lamvan 1...
 whom give to Harigana slaves female ku 'me lamvan 1...

man oy ta harivāhana gho va srac ta bhāgya 1
 whom give to Harivāhana male workers va srac ta Bhāgya 1

man oy ta tāñ gāy kñuṃ tai praton 1
 whom give to Tāñ Gāy slaves female Praton 1

'slaves of the Lord Kirttigana, whom (1) [he] gives to [his] children and servants at [the sanctuary] of the V. K. 'A. Śrī Gambhīreśvara, whom (2) [he] gives to the Harigana, the female slaves: one female slave 'Me Lamvan..., whom (3) [he] gives to the Harivāhana, the male workers: one male slave Srac Ta Bhāgya..., [and] whom (4) [he] gives to the Tāñ Gāy, the female slaves: one Praton'

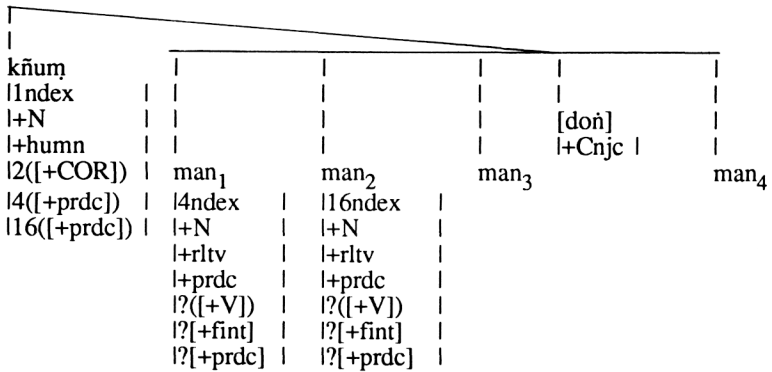
This phrase has four *man*'s, which imply four verbal relative clauses. The first clause is shown in the following tree:



This tree represents only a portion of the clause (K.749:11-4). The word *man* [+rltv, +prdc] is the dependent predicate of the noun *kñuṃ* (the higher regent of the entire clause), the adjacent sister of the Correspondent NP *mratāñ kirttigana* and the regent of the verbal relative clause *oy ta ge-kvan nu ge pamre 'āy ta vraḥ*. The verbal relative clause has a missing subject and a missing object. Based upon semantic context, the agent of the verb *oy* is the owner of the slaves who is *mratāñ kirttigana* 'Lord Kirttigana' and the patient or object of *oy* is the word *man* 'who', which has *kñuṃ* as its antecedent.

The second, third and fourth occurrences of *man* and its relative clause are diagrammed the same way as in this tree, which also means that the noun *kñuṃ* is the regent of these constituents as well. Since *kñuṃ* is the common regent noun of all these four NPs, these NPs are analyzed as coordinated and interpreted as

conjoined NPs with an implied missing conjunction [*doñ*] or (*dañ*). This coordinate predicated NP construction is a normal and common one.

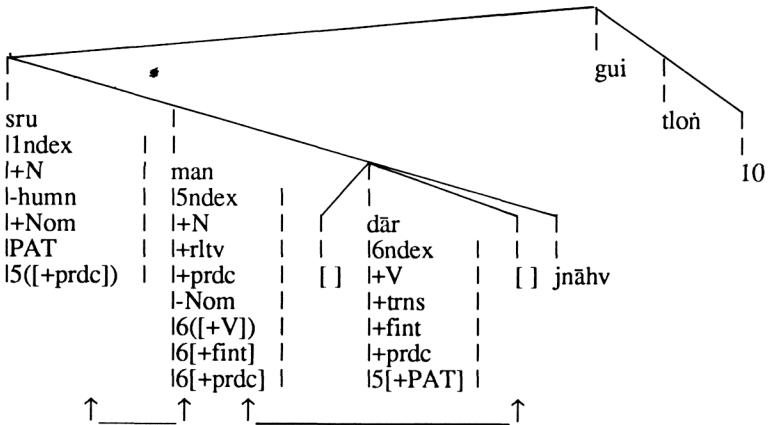


In example 94, *man* is interpreted as the missing object of *dār* and coreferential with the *sru*, the subject of the main verb *gui*.

94. (K.79:9-10)

sru man dār jñāhv gui tloñ 10
 paddy which demand exchange are tloñ 10

'the paddies which [X] demanded in exchange are 10 tloñ'



4.4.4.5.5 *man* as the dependent of a preposition

4.4.4.5.5.1 Preposition *ta₄* as regent of *man*

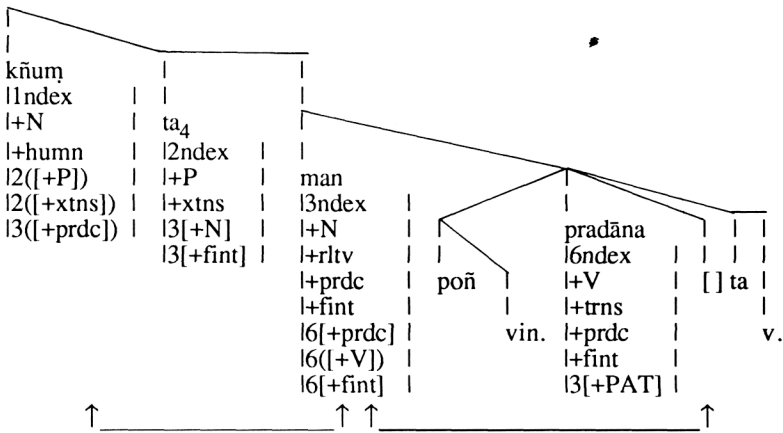
The PP *ta man* S is an exocentric construction where the preposition *ta₄* is the lexical head and *man* is the secondary lexical head.

In example 95, *man* is interpreted as the missing object of the verb *pradāna*, and coreferential with the regent *kñum*.

95. (K.561:29)

kñum ta man poñ vinduśakti pradāna ta vrah
 slave that whom Sir Vinduśakti bestow to Vrah

‘slaves whom Sir Vinduśakti has bestowed upon the Vrah’



4.4.4.5.5.2 Preposition *nu* as regent of *man*

The PP *nu man* has the preposition *nu* as the lexical head and *man* the secondary lexical head of an exocentric construction. The example is rather long but is needed in order to give a full explanation of the analysis.

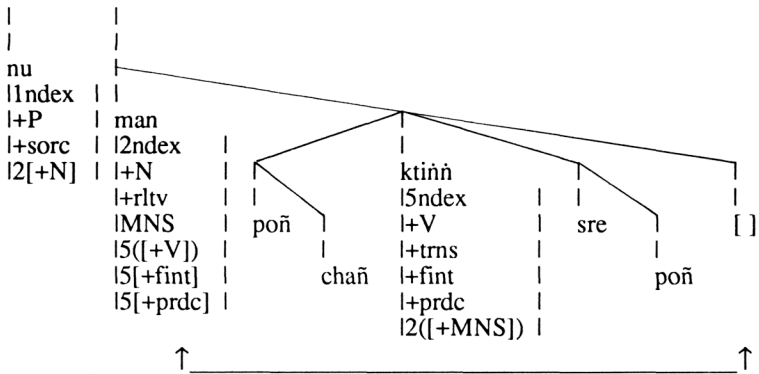
96. (K.493:19-23)

poñ bhā vinaya ktiñ krapī canmat 1...
 Sir Bhā Vinaya surrender carabao ungedled 1...

nu man poñ chañ ktiññ sre poñ
 with which Sir Chañ surrender ricefield his

tel	matiśakti	ta	pamre	tem	gui	lañas	ai
which	Matiśakti	of	former	servant	give	up	at
kañjrap		'mac		purandarapura	soñ	ktiñ ra	
prisoner of war		bound to		Purandarapura	repay	debt	

'Sir Bhā Vinaya has surrendered one ungedled carabao... with which, Sir Chañ has surrendered a ricefield of his which Matiśakti (his former servant) had turned over to the prisoners of war bound to [the land in] Purandarapura to repay the debt to himself'



Here the focus is on the *nu man*. In the relative clause *poñ chañ ktiñ sre poñ* 'Sir Chañ surrendered his ricefields', the verb *ktiñ* has *poñ chañ* as its subject and *sre* as its direct object. Thus, there does not seem to be an open slot in the S available for the interpretation of *man* in the verbal relative clause. However *man* still functions as the link to a preceding regent and connects to some following element. *Nu man* is interpreted as the oblique adjunct in the S clause. *Man* is a noun, and could in principle bear any CR or [+prdc]. In most examples, *man* appears in the [+prdc] relation either to a regent noun or to a regent verb. *Man* typically links to a missing direct object in the following verbal relative clause by RCCR. However, there is no reason why *man* could not bear some other relation to its regent (in example 96 as MNS=MEANS).

As mentioned at the beginning of this section, *man* and *tel* have many things in common. In the following section, this study examines and describes the dependency relationships of *tel* that exist in the data, and points out some of the parallels with the *man* analysis.

The word *tel* corresponds to an identical word in modern Khmer and has the same syntactic function. In addition, the Old Khmer word *tel* also has three other meanings: "(1) to be constant, unchanged; (2) to be handed down or on, transmitted; and (3) unidentified constituent of toponym" (Jenner, 1981:20).

4.4.4.5.6. *tel* as the dependent of a noun

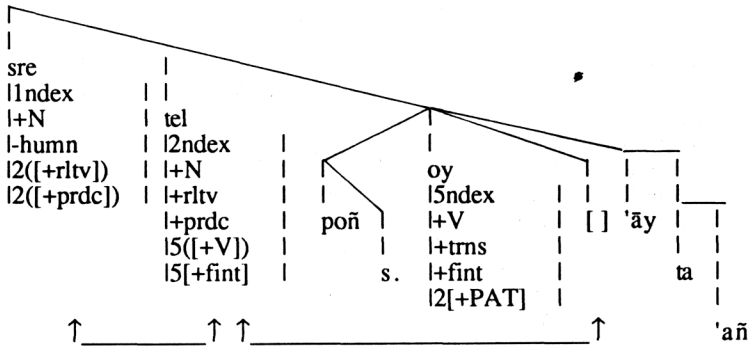
Examples 97 and 98 show the relative noun *tel*, like *man*, functioning as a dependent predicate attribute of noun and the regent of S.

97. (K.54:8-9)

sre tel poñ sivadatta oy 'āy ta 'añ ge phoñ
 ricefield which Sir Sivadatta give at to me these things

tel 'añ oy ta vraḥ kamratāñ 'añ śivaliṅga
 which I give to V. K. 'A. Śivaliṅga

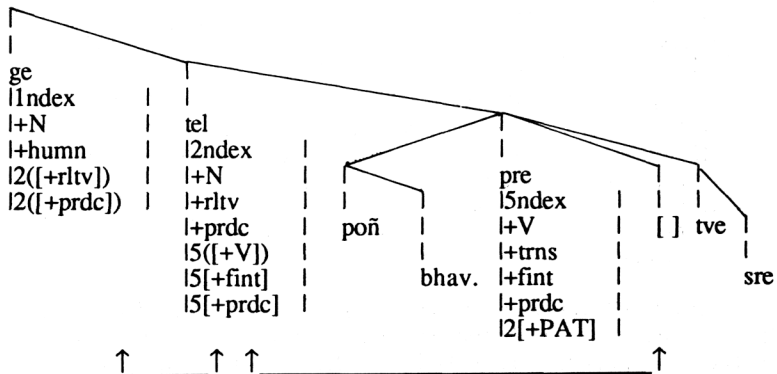
'the ricefields which Sir Sivadatta gave me, these things which I gave to the V. K. 'A. Sivaliṅga'



98. (K.561:33)

ge tel poñ bhavacandra pre tve sre
 they whom Sir Bhavacandra commanded to cultivate riceland

'they whom Sir Bhavacandra commanded to cultivate the riceland'



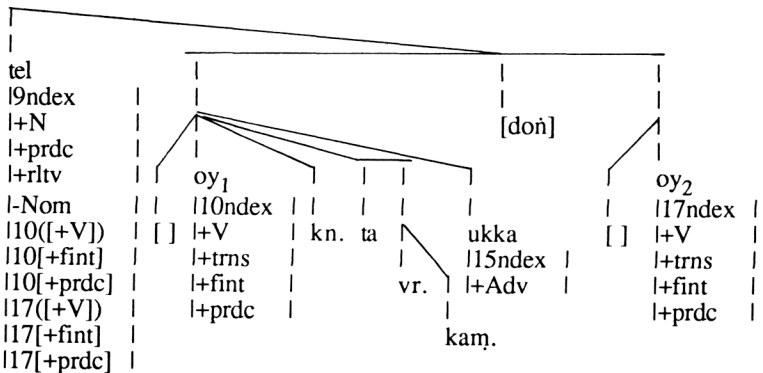
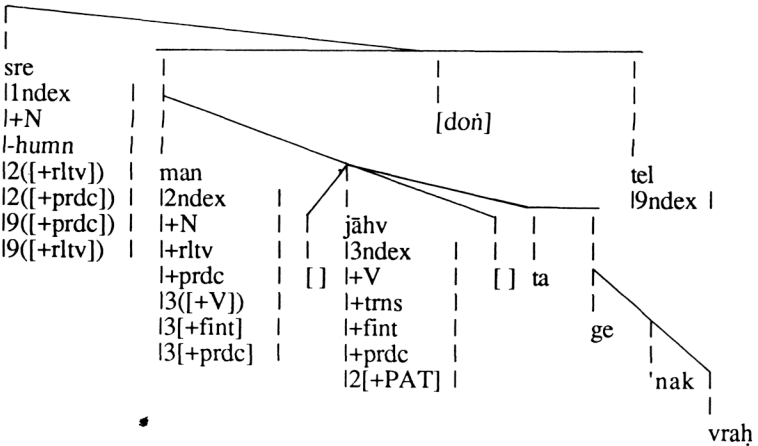
99. (K.493:28)

sre man jāhv ta ge 'nak vraḥ cas
 ricefield which acquire from they people Elder Lord

tel oy knip ta vraḥ kaṃratāñ ukka
 which give revenue to Vraḥ Kaṃratāñ also

oy satra kan'āk
 give offering Kan'āk

'the ricefield which [I] acquired from the folk the Elder Lord, [and] which [I] gave as a source of revenue to the V. K. also [I] give as the Kan'āk offering'



Example 99 illustrates the grammatical equivalence of *man* and *tel*. The relative nouns *man* and *tel* cooccur in the same sentence, and both have the same antecedent *sre* 'ricefield'. Here the NP headed by *tel* is conjoined to the NP headed

by *man*, and together they form a coordinate predicate relative clause with a missing conjunction [*don*].

Man is the regent of the verbal relative clause *jāv* *ta ge 'nak vraḥ cas*, with *jāv* as its dependent verb. This verb *jāv* has a missing subject and missing object. From context, the missing subject is identified as *Jñacandara*, and *man* is interpreted as the missing object, coreferential with its antecedent *sre* 'ricefields'.

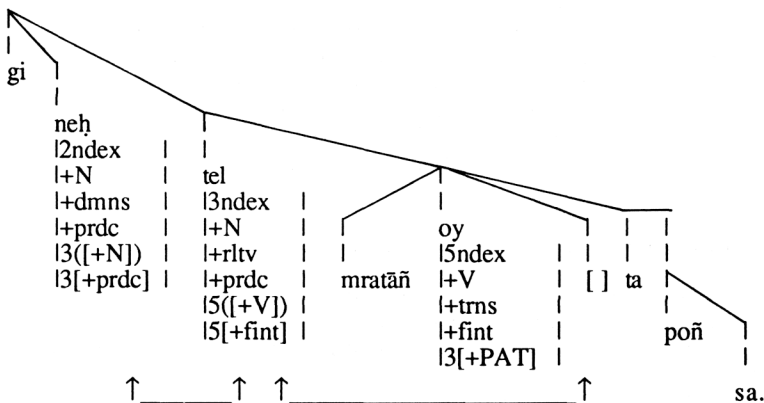
The relative noun *tel* is the regent of the coordinate verbal relative clause *oy₁ ta vraḥ kaṃratāñ ukka*, and *oy₂ satra kan'āk*. These two relative clauses are conjoined with the missing conjunction [*don*]. *Jñacandara* again is the subject of these two verbs *oy₁* and *oy₂*, and *tel* is interpreted as its missing object, whose antecedent is *sre*. The adverb *ukka* is used to mark the end of the construction.

In example 100, *tel* is the dependent predicate of the demonstrative noun *neh* and the regent of S.

100. (K.154A:8)

gi neh tel mratāñ oy ta poñ saṅkaraṣaṇa
is these what he give to Sir Saṅkaraṣaṇa

'These are what he gave to Sir Saṅkaraṣaṇa.'
[It is] these that he gave to Sir Saṅkaraṣaṇa.



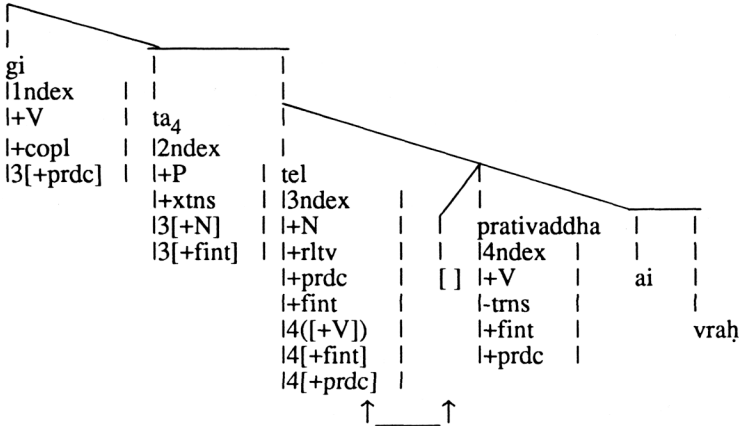
4.4.4.5.7 *tel* as the dependent of a preposition

This structure is similar to the *ta man* structure, where the relative noun *tel* is the secondary lexical head of the PP exocentric construction, as shown in example 101.

101. (K.341N:3-4)

gi ta tel prativaddha ai vrah kammraten 'añ
 are that who devoted to V. K. 'A.

'those who are ever devoted to the shining one Our High Lord'



In conclusion *man* and *tel* are defined as predicate relative nouns due to their dependency relationship with their regent, the copula verb *gui ~ gi*. *Man* and *tel* can be interpreted as the missing object, subject, an indirect object, dependent of a verb in the relative subordinate clause are marked as coreferential with its antecedent in the same or preceding clause by the RCCR. When the preposition *ta4* intervenes between *man* or *tel* and the head noun, *ta4* is analyzed as the complementizer of the equational predicate which is headed by *man* or *tel*.

5. Multiple noun dependency relationships

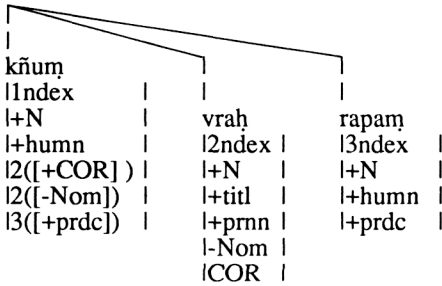
In section 3, noun phrases with no dependents were examined. In Chapter IV, the focus was on NPs with one dependent modifier. In this chapter, the types and dependency relationships of NPs that have more than one dependent sisters are examined.

These dependency relationships between head nouns and their various dependents will be subcategorized and analyzed according to their syntactic functions with respect to their regent and the linear syntactic relation with their co-dependents. As shown in the following diagrams, this subcategorization is based upon the relationship between: (1) possessive and equative NPs; (2) possessive and locative NPs; (3) possessive, locative and equative NPs; (4) possessive, equative and locative NPs; (5) cooccurring equative NPs; (6) equative and locative NPs; and (7) locative and predicative NPs.

1. (K.137:18)

kñuṃ vrah rapaṃ col 'añ 1 vidyunmati 'añ 1
 slaves his dancers: Col 'añ 1 Vidyunmati 'añ 1

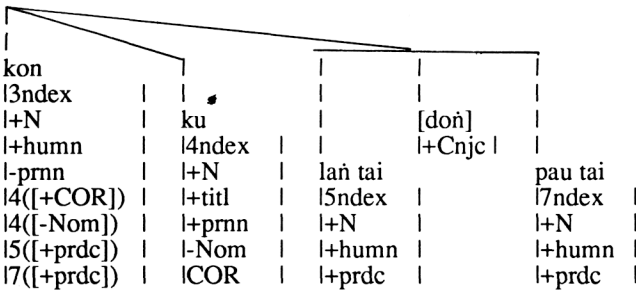
'his slaves, the dancers: one Col 'añ, one Vidyunmati 'añ'



2. (K.505:10)

ku sralañ kon ku lañ tai pau tai
 female slave sralañ child her adolescent female nursing female

'the female slave Sralañ, her children: the female adolescent, the female infant'

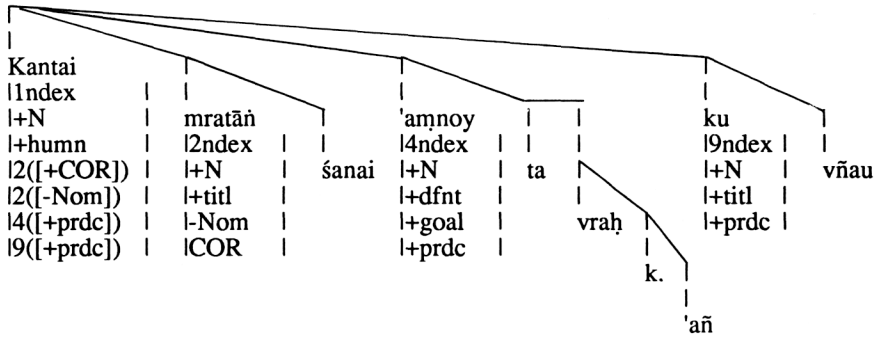


3. (K.54:11)

kantai mratañ śanaīścara 'amnoy ta vrah kamratāñ 'añ
 woman Lord Śanaīścara gift of V. K. 'A.

ku vñau
 female slave Vñau

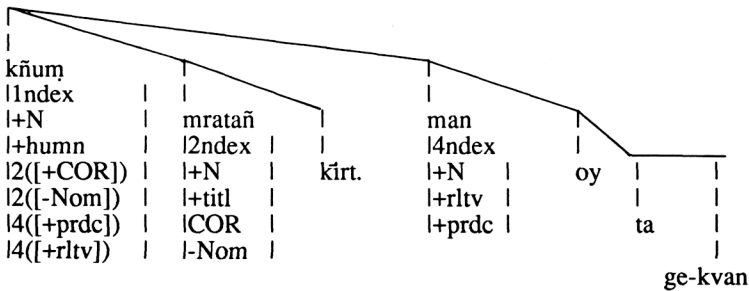
'the woman of Lord Śanaīścara the gift of V. K. 'A : the female slave Vñau



4. (K.749:11-4)

kñuṃ mratañ kirttiḡaṇa man oy ta ge kvan
 slave Lord Kirttiḡaṇa whom give to person-children

'slaves of the Lord Kirttiḡaṇa, whom [he] gives to [his] children'



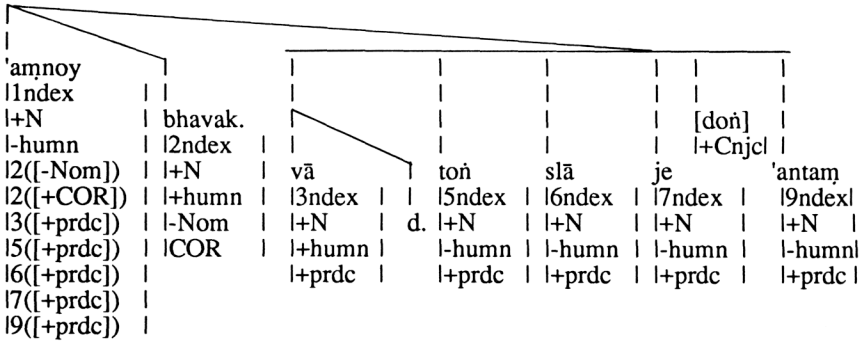
5. (K.54:17-8)

'amñoy bhavakumāra vā dharmmasāra toñ
 gift Bhavakumāra male slave Dharmmasāra coconut trees

slā jhe 'antam̄ nai vrah̄ kaṃratān 'añ
 areca palms trees plants belonging to V. K. 'A.

daiy kaṃluñ gui rudrāśrama
 other inside be Rudrāśrama

'The gift of Bhavakumāra: male slave Dharmmasāra, coconut trees, areca palms, trees, [and other] plants belonging to other V. K. 'A. inside Rudrāśrama.'



Based upon this analysis, it may be said that in co-dependent relationships, a possessive NP is followed by a predicate NP.

5.2 Relationship between possessive and locative phrases

Previously, in terms of syntactic order, it was shown that the first co-dependent functions as COR, and the second co-dependent functions as [+prdc] to their regent.

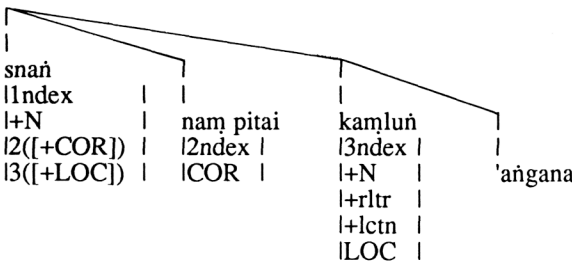
In this section the first co-dependent remains the same, but the second co-dependent functions as LOC to its regent.

This analysis is illustrated in examples 6 to 8.

6. (K.44B:7-8)

snañ naṃ pitai kaṃluñ 'aṅgana
 maker cake Pitai inside courtyard

'maker of Pitai cake within the courtyard'

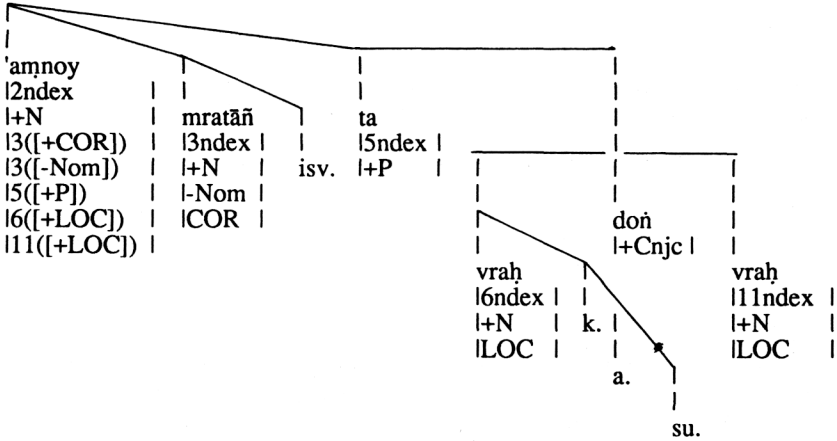


7. (K127:14)

kñuṃ 'amnoy mratāñ ĩsvaravindu ta vraḥ kaṃratāñ 'an
 slaves gift Lord ĩsvaravindu to V. K. 'A.

suvarṇṇaliṅga doṅ vrah kaṃratāñ 'añ maniṣiva
 Suvarṇṇaliṅga and V. K. 'A. Maniṣiva

'slaves, the gifts of Lord Isvaravindu to the V. K. 'A. Suvarṇṇaliṅga and the V. K. 'A. Maniṣiva'



8. (K.44A:9-10)

'amṇoy tāñ 'añ kloñ rañko
 gift Retainer 1st Commissioner Husked Rice
 +N COR

doṅ poñ varahasena ai ta vrah kaṃratāñ 'ñ
 and Sir Varahasena at to V. K. 'A.
 +titl +P +P -lctn
 COR +trmn -trmn LOC

'amvi kāla vrah kaṃratāñ 'añ śrī raudravarmma
 from time V. K. 'A. Śrī Raudravarmma
 +P +time
 +sorc LOC

'the gift of Our Retainer the Commissioner of Husked Rice and Sir Varahasena to the V. K. 'A. from the [life] time of the V. K. 'A. Śrī Raudravarmma.'

In conclusion, the possessive NP precedes its co-dependent, locational PP. This ordering relationship holds for all the data examined.

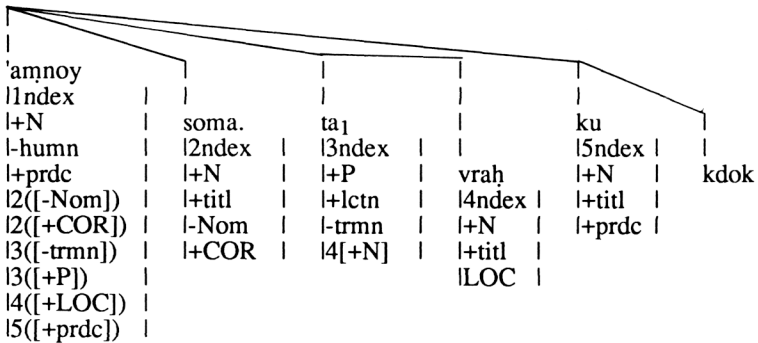
5.3 Relationship between possessive locative, and equative noun phrases

This section deals with NPs containing three types of co-dependents functioning as possessive [COR], locative [LOC] and equative predicate [+prdc] to their common regent, as shown in examples 9 to 11.

9. (K.54:14)

'amñoy somakirti ta vrah ku kdok
 gift Somakirti to Vrah female slave Kdok

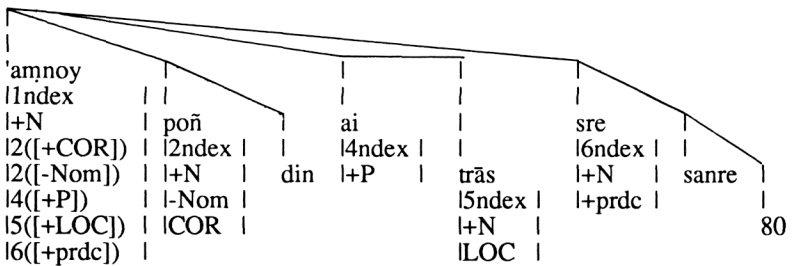
'the gift of Somakirti to the Vrah the female slave Kdok'



10. (K.9:24)

'amñoy poñ din ai trās sre sanre 80
 gift Sir Din at Trās ricefield clsf. 80
 +N +titl +P +lctn -anmt
 COR LOC +prdc

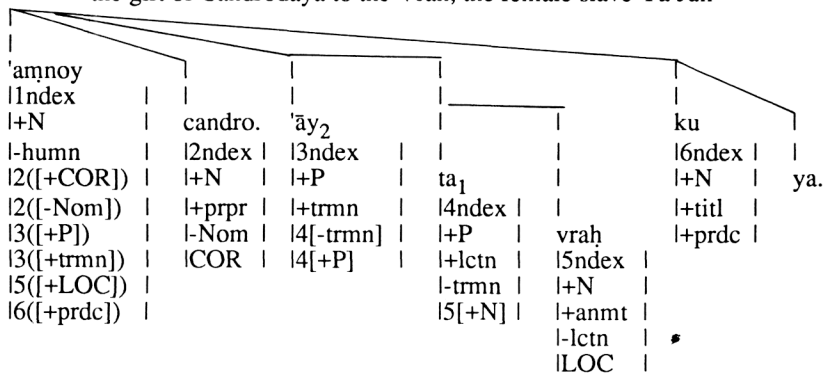
'the gift of Sir Din at Trās 80 ricefields'



11. (K.54:14)

'amnoy candrodaya 'āy ta vrah ku ya juñ
 gift Candrodaya at to Vrah female slave Ya Jun

'the gift of Candrodaya to the Vrah, the female slave Ya Jun'



5.4 Relationship between possessive, equative and locative noun phrases

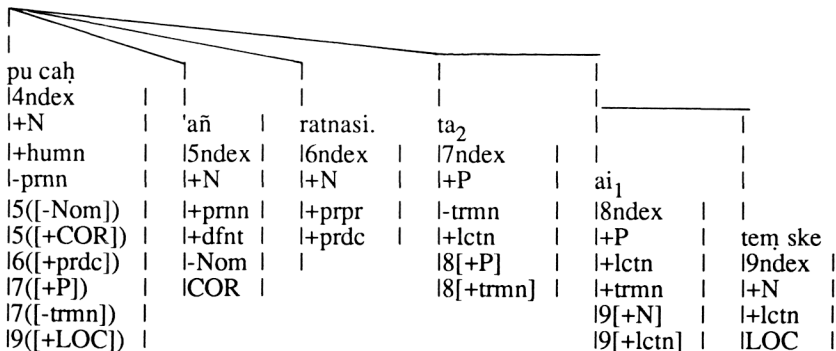
In section 5.1.3, the order of co-dependents is [COR], [LOC], and [+prdc], while in this section the order is [COR], [+prdc], and [LOC], as illustrated in example 12.

12. (K.49:11-2)

pu caḥ 'añ ratnabhānu pu caḥ 'añ ratnasinḥa
 elder lord our Ratnabhānu elder lord our Ratnasinḥa

ta ai teṃ ske
 of at Tem Ske

'our Elder Lord Ratnabhanu [and] our Elder Lord Ratnasinḥa of (the place) Tem Ske'



In conclusion, the possessive NP can cooccur with two other co-dependents in these orders: [COR], [LOC], [+prdc] or [COR], [+prdc], [LOC].

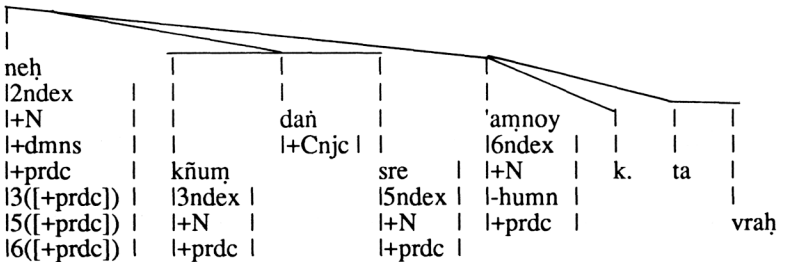
5.5 Relationship among predicate noun phrases

Attention is focused here on the equative NP as first co-dependent. The relationship among the various subtypes of equative NPs is shown in examples 13 and 14.

13. (K.18:30-10)

gi neḥ kñuṃ dañ sre 'aṃnoy kloñ ta vrah
 are these slaves and ricefield gift his to Vrah

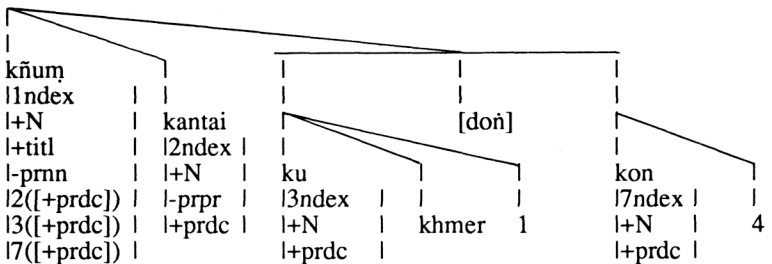
'These are the slaves and ricefields (which are) his gift to the Vrah'



14. (K.18:6)

kñuṃ kantai ku kmer 1 kon 4
 slave female female slave Kmer 1 child 4

'the female slaves: one female slave Kmer [and] 4 children'



In conclusion, the predicate NP can cooccur with other co-dependents predicate NPs.

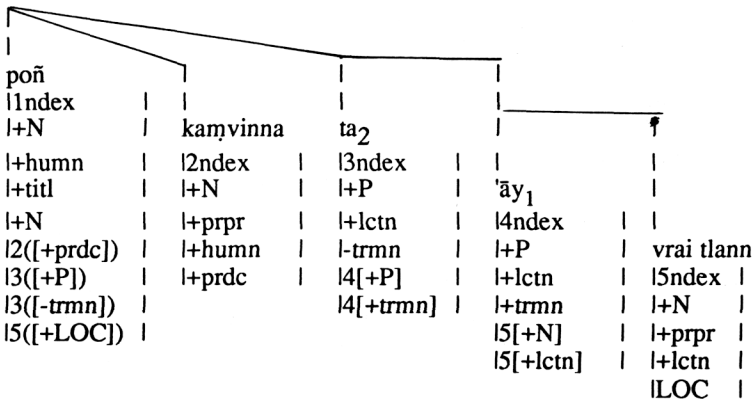
5.6 Relationship between predicate and locative noun phrases

Example 15 shows a human predicate NP followed by a locational prepositional phrase, with *ta*₂ as lexical head of the double exocentric construction.

15. (K.561:19-20)

poñ kaṃvinna ta 'āy vraī tlann
 Sir Kaṃvinna of at Vrai Tlann

‘Sir Kaṃvinna of (the territory) Vrai Tlann’



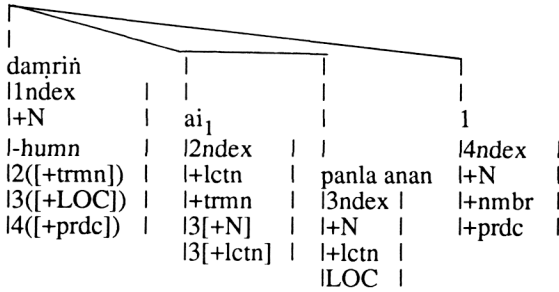
5.7 Relationship between locative and predicate noun phrases

In this section the focus is on NPs with the first co-dependent functioning as LOC and the second or third dependents as [+prdc], as illustrated in examples 16 to 20.

16. (K.9:31)

damriñ ai panla anan 1
 plantation at Panla anan 1

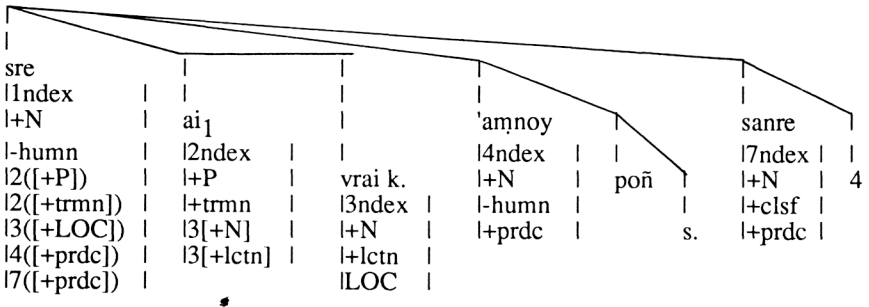
‘one plantation at Panla Anan’



17. (K.9:30-1)

sre ai vraḥ kantai 'amṇoy poñ sraman sanre 4
 ricefield at Vraḥ Kantai gift Sir Sraman clsf. 4

'four ricefields at Vraḥ Kantai, the gift of Sir Sraman'

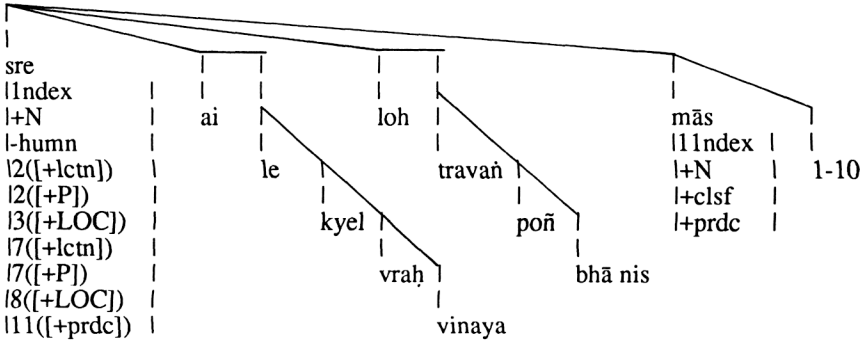


18. (K.22:30)

sre ai le kyel vraḥ vinaya loh travañ poñ
 ricefield at top cove Vraḥ Vinaya until pond Sir

bhā nis mās 1-10
 bhā nis mās 11

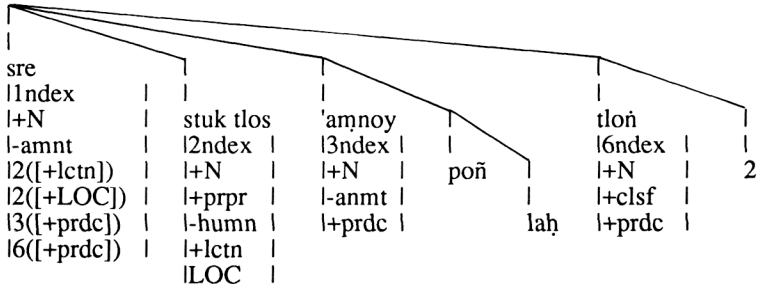
'the ricefield at the top of the cove of the Vraḥ Vinaya as far as the pond of Sir Bhā Nis, 11 mās'



19. (K.79:17)

sre stuk tlos 'amṇoy poñ laḥ 'añ tloñ 2
 ricefield Stuk Tlos gift Sir Laḥ 'añ tloñ 2

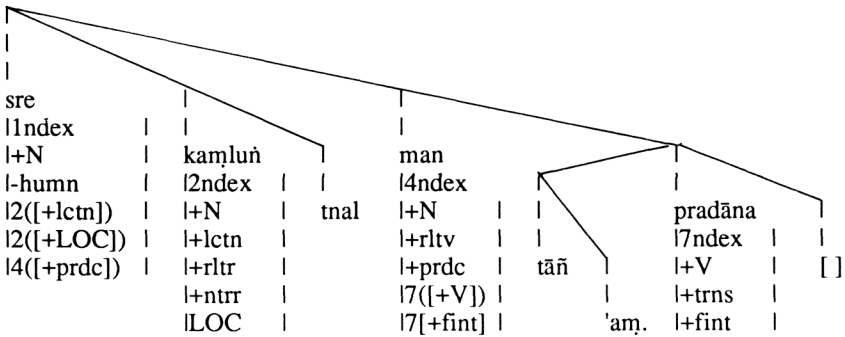
'the ricefield at Stuk Tlos, the gift of Sir Laḥ 'añ 2 tloñ'



20. (K.493:26)

sre kaṃluñ tnal man tāñ 'amṇvi pradāna
 ricefield inside elevated road which retainer 'Amṇvi gave

'the ricefield inside of the elevated road which the retainer 'Amṇvi gave (me).'



These last two sections show that an equative noun phrase can precede or follow its co-dependent locational noun phrase or locative prepositional noun phrase.

In summary, the following consistent linear precedence hierarchy can be extracted from these data:

possessive < [equative]
 < >
 [locative]

6. Summary and Conclusion

6.1 Summary of the study

The analysis presented here is the result of an investigation of the nouns and noun phrases found in Old Khmer pre-Angkorian Dated Inscriptions. This investigation marks the beginning of my contribution to Old Khmer Studies. In addition to my actual analysis, it provides enough analyzed examples to allow others to make further contributions to the study of Old Khmer grammar by using the same lexicase framework employed in this study or to attempt a different new approach.

No other syntactic studies are available for evaluation or comparison with this investigation. Despite limitations imposed by the source materials and the lack of previous syntactic work on which to build, I believe I have found some interesting regularities and generalizations in the area of my topic, NP structure.

1. With the exception of the lack of adjectives and sentence particles, the word classes of the pre-Angkorian Khmer language are those allowed for by the lexicase framework, and the structure of NPs is consistent with the constraints imposed by this model.

2. Noun classes in Old Khmer include pronouns, derived pronouns, the demonstrative nouns *neh* and *noh*, the relative nouns *man* and *tel*, common nouns, number nouns, proper nouns, classifier nouns, title nouns, location nouns and relator nouns. The use of nouns for concepts that translate as adjectives or determiners in other languages is striking, and reminiscent of Western Austronesian syntax.

3. NPs are described in terms of labelled dependency relationships obtaining between the regent noun and its respective dependents. The syntactical relationships include case relations: possessive NP dependents (COR), location NP and PP dependents (LOC) and means NP (MNS), and equative dependent NPs (+prdc). These equative NP dependents include the following subcategories: classification, number NPs, indirect possessive NPs, and indirect relative clauses.

The investigation also includes a brief preliminary analysis of prepositional phrase and sentence structure. The most interesting findings are given in the following subsections.

6.1.1 *Basic sentence patterns*

1. The most interesting component in this section is the verbless sentence. This construction is ubiquitous in the dependency structure of NPs, and quite common as a complement of a copula verb, but I have encountered only one example where an N [+prdc] is the head of a non-embedded clause.

2. There are two places where my analysis differs significantly from Jenner's. One is in the treatment of *gui* ~ *gi* as a copula rather than as a pronoun, which makes it possible to fit some otherwise awkward constructions neatly into independently needed patterns. The other is in the analysis of *'amnoy*, a derivative of *oy* 'give' as a nominalization 'gift' rather than as a passive, which is needed to explain this word's function as the head of NP constructions.

6.1.2 *Prepositional phrases as dependents of nouns*

The preposition *ai* [+P, +trmn] is categorized into two homophonous entries: *ai*₁ and *ai*₂.

1. $N_1 - ai_1 - N_2$ [+prpr, -humn, +lctn, LOC]. N_1 assigns case forms such as [+lctn] or [+trmn] and the case relation [LOC] to its location-noun dependent through the preposition linking rules. In addition to having a noun N_1 as its regent, the preposition *ai*₁ may alternatively take the preposition *ta*₂ as its regent. The investigation did not examine the occurrence of *ai* with a verbal regent.

2. $N_1 - ai_2 - ta_1 - N_2$ [LOC]. The preposition *ai*₂ bears the [+trmn] feature required by its regent N_1 , and *ai*₂ in turn requires the feature [+lctn, -trmn] from

its dependent ta_1 . Ta_1 bears the [+lctn, -trmn] features and selects a nominal dependent, N_2 . N_2 fulfills the LOC requirement of N_1 .

3. $N_1 - ta_2 - ai_1 - N_2$: This construction is described under ta , since ta_1 is the regent of ai_2 .

Working from Jenner's insightful 'ligature' analysis of Old Khmer ta , and applying lexicase dependency criteria for word classification, the following homophonous words can be recognized.

In this analysis ta is a preposition and has four syntactic functions:

4. N_1 [+goal] – ta_1 – N_2 [LOC]. The preposition ta_1 bears the [+lctn] feature required by its regent N_1 and, in turn, expects a nominal dependent N_2 . N_2 functions as a LOC complement to N_1 , the regent of PP.

5. $N_1 - ta_2 - ai_1 - N_2$ [LOC]. The preposition ta_2 [+lctn, -trmn] adds a semantic component of 'vicinity' or 'territorial' or 'space' to $ai_1 - N_2$ [+/-anmt].

6. $N_1 - ta_3 - N_2$ [COR] Ta_3 requires a nominal dependent N_2 . N_2 functions as the possessor of N_1 .

7. $N_1 - ta_4 - N_2$ [+prdc]. Ta_4 [+xtns] is the lexical head of an exocentric construction, where its lexical co-head may be a noun bearing the [+prdc] lexical feature.

8. $N_1 - ta_4 - V$. Ta_4 [+xtns] may also take a finite verb as its [+prdc] dependent.

9. Within the preposition word class, the word ni , which was not mentioned in this study, remains to be investigated.

6.1.3 Direct possessive constructions

In the $N_1 - N_2$ [COR] construction, N_2 is marked with the feature non-nominative and must have a nominal regent. N_2 is interpreted as bearing the case relation COR required by N_1 . N_2 can be any noun, such as a pronoun, derived pronoun, title noun, proper noun, or common noun.

6.1.4 Indirect possessive constructions

1. $N_1 - nai - N_2$ [COR]. The word nai 'possession of' is the regent of N_2 . It requires its dependent to bear the COR case relation. Nai serves as a link between the possessed noun N_1 and the possessor noun N_2 , in that it functions simultaneously as a predicate noun to N_1 and the possessee of N_2 .

2. $N_1 - ta_3 - N_2$ [COR]. The preposition ta_3 requires a nominal dependent. N_2 functions as possessor to the regent of the PP and bears the COR case relation.

3. $N_1 - nai - ta_3 - N_2$ [COR]. This is a variant of the previous pattern. *Nai* is the regent of the possessive prepositional phrase $ta_3 - N_2$. N_2 bears the COR Correspondent case relation required by *nai*.

6.1.5 Indirect verbal relative clauses

1. *man/tel* [+prdc]. The words *man* and *tel* are found between the head noun N_1 of a NP and a following verbal relative clause, as predicate relative nouns. These relative nouns function as the regent of the following verbal relative clause and as equational dependents of the preceding N_1 . *Man* and *tel* can be interpreted as the missing object, subject, indirect object, or oblique dependent of a verb in the verbal relative clause by the Relative Clause Chaining Rule, and this missing word is then equated with the N_1 head of the NP via the [+prdc] link between N_1 and *man* or *tel*.

2. $Ta_4 - man/tel$ [+prdc]. *Man* or *tel* may be the secondary head of a PP exocentric construction with ta_4 [+xtns] as lexical head, and function as the complementizer to the regent noun N_1 .

Further study is needed for the *nu - man/tel* construction.

6.1.6 Relator nouns

Words identified as relator nouns are *kamluñ* ‘inside’, *karon* ‘below’, *krau* ‘beyond’ and *ñiñ* ‘side’. They appear in the following structure:

$N_1 - N$ [+rltr, LOC] – N_2 [COR]. The relator N bears the localistic feature [+lctn], and the LOC case relation is assigned to it by N_1 . In addition, N supplies other semantic and localistic features allowed and/or required by the regent noun N_1 . N requires a nominal possessor N_2 , which is marked with the case relation feature Correspondent [COR] and the non–nominative case form [–Nom].

The relator noun N can also be the direct dependent of a preposition P or of a verb.

6.1.7 Verbal relative clauses

The status of the noun *ge* in the verbal relative clause construction is a topic which needs further investigation.

6.1.8 *Nominal equative predicate clauses*

1. $N_1 - N_2$ [+prdc]. The regent N_1 of a nominal equative predicate clause can be either a pronoun, demonstrative noun *neh* or *noh*, relative noun *man* or *tel*, common noun, number noun, proper noun or a title noun. The predicative attribute N_2 can be a common noun, personal proper noun, non-personal proper noun, number, classifier, or even a relator noun. Note that numbers and classifiers are analyzed as nouns here, rather than as distinct parts of speech.

2. The classifier functions as: the head of a free NP, the secondary head of a PP, the attribute of an N, or the attribute of a verb.

6.1.9 *Multiple noun dependents*

The dependency relationship of NPs that have more than one dependent sisters are subcategorized according to the sequential relationship between: the possessive and equative NP sequence; the possessive and locative NP sequence; the possessive, locative and equative NP sequence; the possessive, equative and locative NP sequence; the equative and locative NP sequence; and the locative and equative NP sequence. The following linear precedence hierarchy can be extracted from these data:

$$\begin{array}{c} \text{possessive} < \lceil \text{equative} \rceil \\ < > \\ \lfloor \text{locative} \rfloor \end{array}$$

6.2 *Contributions*

To the extent that the results of this investigation on nouns and NPs of the Pre-Angkorian Dated Inscriptions has been successful, it makes a contribution to comparative syntactic research on the languages of the Mon Khmer group. These results also contribute to the studies of the typological change and convergence in the Southeast Asian language area.

In addition, these results confirm the ability of the constrained lexibase version of dependency grammar to provide insightful analyses for a broad range of languages.

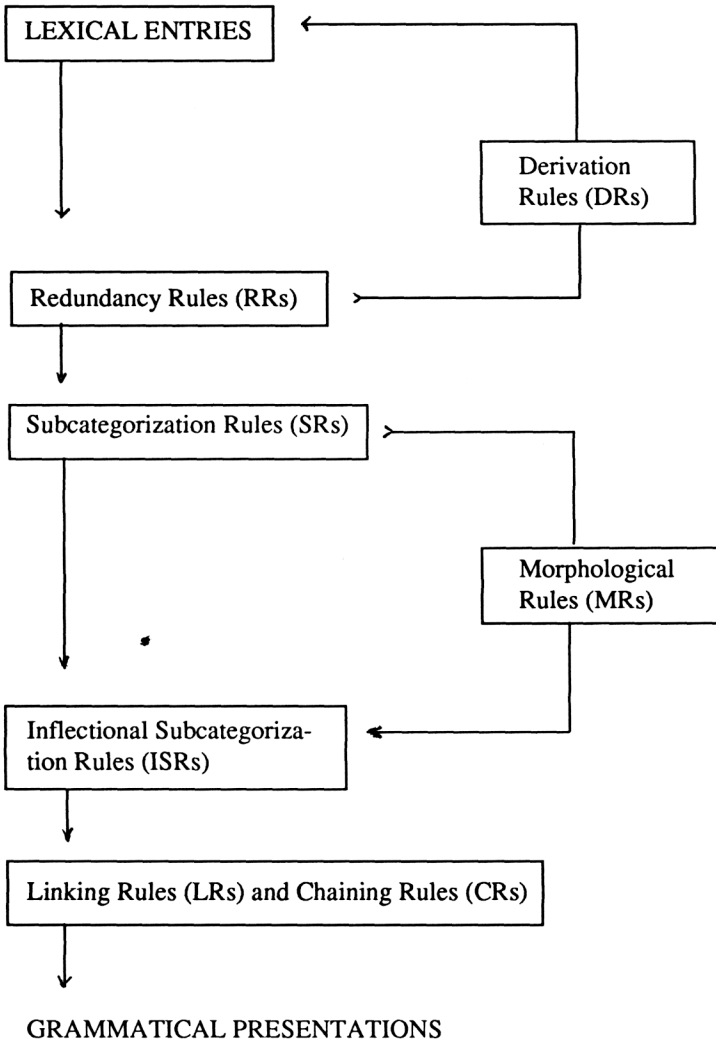
Appendix A. Pre-Angkorian dated Khmer inscriptions vol. I.1 and I.2

1. K.149	A.D. 578-677	22. K.341N	700/1
2. K.438	578-677	23. K.670	578-677
3. K.90	578-677	24. K.689	578-677
4. K.22	578-677	25. K.426	578-677
5. K.709	578-677	26. K.940	578-677
6. K.80	578-677	27. K.482	578-677
7. K.502	578-677	28. K.137	578-677
8. K.79	644	29. K.818	578-677
9. K.493	657	30. K.451	680
10. K.49	665	31. K.726	678-777
11. K.48	578-677	32. K.1029	743/44
12. K.54	628	33. K.124	803/4
13. K.561	681/2	34. K.922	578-677
14. K.38	578-677	35. K.904	678-777
15. K.341S	674	36. K.259S	678-777
16. K.447	648/657	37. K.7	578-677
17. K.44	674	38. K.388	578-677
18. K.1004	691	39. K.400B	828
19. K.563	578-677	40. K.389	578-677
20. K.607	678-777	41. K.103	770
21. K.21	578-677	42. K.134	781

Tome I.3 and unpublished

1. K.600	612	23. K.688	719
2. K.748	614	24. K.18	726
3. K.1028	614	25. K.154	734
4. K.138	620/621	26. K.20	744 [unpublished]
5. K.926	624	27. K.428	761 [unpublished]
6. K.506	637 [unpublished]	28. K.103S	pre-770 [unpublished]
7. K.9	639/640	29. K.103N	770 [unpublished]
8. K.505	639		
9. K.910	651/652		
10. K.109	657		
11. K.115	665		
12. K.582	667		
13. K.78	668/678		
14. K.140	676		
15. K.765	679		
16. K.127	683/684		
17. K.74	697		
18. K.114	698/699		
19. K.753	704/705		
20. K.145	706		
21. K.927	710/729		
22. K.749	717		

Appendix B. Lexicase flow chart



For a detailed discussion of each rule see Starosta (1988) and Starosta (forthcoming)

REFERENCES

- Coedès, G. 1937-66. *Inscriptions du Cambodge, 8 volumes*. École Française d'Extrême-Orient, Collection de Textes et Documents sur l'Indochine, III. Hanoi and Paris: École Française d'Extrême-Orient.
- Dupont, Pierre. 1952. Étude sur l'Indochine Ancienne II: les Débuts de la Royale Angkorienne. *BFEQ*, XLVI, 1:118-76.
- Headley, Robert, Jr., et al. 1977. *Cambodian-English Dictionary, 2 volumes*. Bureau of Special Research in Modern Languages. Washington, D.C.: The Catholic University of America Press.
- Huffman, E. Franklin. 1967. *An Outline of Cambodian Grammar*. Ph.D. dissertation, Cornell University University, Microfilms International, Ann Arbor, Michigan, USA.
- Inscriptions du Cambodge. *Publiées sous les auspices de l'Académie des Inscriptions et Belles-Lettres* (Paris: Paul Geuther, 1926-31; Hanoi: Imprimeries d'Extrême-Orient, 1937), in six folios.
- Jacob, J. M. 1965. Notes on the Numerals and Numeral Coefficients in Old, Middle and Modern Khmer. *Lingua* 15, 143-162, North Holland Publishing Co., Amsterdam.
- Jacob, J. M. 1979. Pre-Angkorian Of Cambodia: Evidence from the Inscriptions in Khmer Concerning the Common People and their Environment. R. B. Smith and W. Watson (eds.), *Early Southeast Asia: Essays in Archeology, History and Historical Geography*. New York/ Kuala Lumpur: Oxford University Press. 406-26.
- Jenner, Philip. 1974. Les Noms de Nombres en Khmer. *JA*, 1-2: 171-91. Republished in *Linguistics*, 174 (1976): 39-59.
- Jenner, Philip. 1980. A Chrestomathy of pre-Angkorian Khmer I: Dated Inscriptions from the Seventh and Eighth Centuries (A.D. 611-781). *Southeast Asia Paper No. 20*, Part I. Southeast Asian Studies (SEA), Asian Studies Program, University of Hawaii.
- Jenner, Philip. 1981. A Chrestomathy of pre-Angkorian Khmer II: Lexicon of Dated Inscriptions. *Southeast Asia Paper No. 20*, Part II. SEA, Asian Studies Program, University of Hawaii.
- Jenner, Philip and Saveros Pou. 1980-1981. *MKS IX-X*, A lexicon of Khmer Morphology. The University Press of Hawaii.
- Jenner, Philip. 1981. The Role of *Ta* in pre-Angkorian Khmer. *Asie du Sud-Est et Monde Insulinien (ASME)*, vol. XII, 1-2.
- Jenner, Philip. 1982. Pre-Angkorian *Gnih* and *Gnoh* and the Syntax of *Gi*. *ASME*, vol. XIII, 1-4.
- Jenner, Philip. 1983-84. *Text Vieux Khmèrs Faisant Partie du Corpus des Inscriptions du Pays Khmer, Tome I.1 et 2*. Unpublished.
- Jenner, Philip. 1983-84. *Text Vieux Khmèrs Faisant Partie du Corpus des Inscriptions du Pays Khmer, Tome I.3*. Unpublished.
- Long, Seam. 1973 *Les Anthroponymes sur les Inscriptions du Cambodge du VIème au XIIIème Siècle*, matériel présenté au XXIXème Congrès Internationale des Orientalistes à la Sorbonne, France.
- Pagotto, Louise. 1987. *Verb Subcategorization and Verb Derivation in Marshallese: A Lexicase Analysis*. Ph.D. dissertation, University of Hawaii.

- Pou, Saveros. 1969. Recherches sur le Vocabulaire Cambodgien (V): Les Mots *lanlein/lanlyin* dans les Inscription Khmères. *JA*, 157-65.
- Savetamalya, Saranya. 1989. *Thai Nouns and Nouns Phrases: A Lexicase Analysis*. Ph.D. dissertation, University of Hawaii.
- Starosta, Stanley. 1982. Case Relation, Perspective, and Patient Centrality. *University of Hawaii Working Papers in Linguistics* 14/1: 1-34.
- Starosta, Stanley. 1988. *The Case for Lexicase*. An outline of lexicase grammatical theory. Pinter Publishers. London and New York.
- Starosta, Stanley. Forthcoming. Lexicase. *The Encyclopedia of Language and Linguistics*, Pergamon Press and its associates. Aberdeen University Press.

Received: January 1993

Indo-Pacific Department
University of Hawaii at Manoa