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A PACOH ANALYTIC GRAMMAR

**A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE
UNIVERSITY OF HAWAI'I IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF**

DOCTOR OF PHILOSOPHY

IN

LINGUISTICS

AUGUST 2000

By

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We certify that we have read this dissertation and that, in our opinion, it is satisfactory in scope and quality as a dissertation for the degree of Doctor of Philosophy in Linguistics.

DISSERTATION COMMITTEE

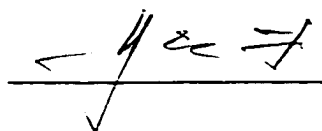
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By

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To the Pacoh people.

ACKNOWLEDGEMENTS

This dissertation took longer than I had originally intended, and then it took a little bit longer. There are, naturally, plenty of teachers, friends, and family members to thank for their help in many ways at various stages of the work.

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ABSTRACT

Using the Lexicase syntactic framework, this grammar provides an analysis and summary of the syntax of the Pacoh language. All identifiable lexical categories in Pacoh—including verbs, nouns, prepositions, adverbs, conjunctions, and sentence particles—are characterized and subcategorized based on distributional properties. In addition, there are chapters on Pacoh phonology and Pacoh word-formation strategies.

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LIST OF ABBREVIATIONS

Abbreviation	Feature Name	Related Part of Speech
Acc	ACCUSATIVE	Case
actr	actor	case
adrs	addressee	N. +prnm
Adv	adverb	Adv
AGT	agent	Case
anmt	animate	N. V
sscv	associative	P. +xtns
bare	bare	V. P
bgln	big and long	N. +clsf
cause	cause	P. +xtns
cmnt	comment	P. +xtns
cmpl	complete	Adv
cmpr	comparative	P
cmtv	comitative	P
Cnjc	conjunction	Cnjc
cntr	contrary	P. +xtns
copl	copula	P. +xtns
COR	correspondent	Case
crsp	correspondent	V
cstv	causative	V
Dat	DATIVE	Case
degr	degree	V. +sttv
dfnt	definite	N
dmns	demonstrative	N
dscr	descriptive	V. +sttv
dstl	distal	N. +dmns
dstr	distributive	N. +scop
dual	dual	N. +prnm
fact	fact	V. +xtns / P. +xtns
ffct	affected	V. +xtns
flat	flat	N. +clsf
futr	future	N. +time
gnrl	general	N
goal	goal	P. V
humn	human	N. [-unit]
lctn	locational	N / P
Lev	LOCATIVE	Case
LOC	locus	Case
lstn	listener	N. +prnm
mass	mass	N
mltd	multitude	V. +sttv
MNS	means	Case

mode	mode	V
mono	mono	N. +scop
motn	motion	V. +xtns
move	movement	V
mprs	impersonal	V
mprt	imperative	Sprt
N	noun	N
ndfn	indefinite	N
near	perfective	V. +xtns
ngtn	negation	V
nknw	unknown	N. +prnm
nmbn	number	N. +time
nmnl	nominal	V. +xtns
nmrl	numeral	N
nnrt	non-root	V
Nom	NOMINATIVE	Case
nrcp	incorporative	N
nstr	instrumental	N / P
ntnt	intent	P. +xtns
ntrg	interrogative	N. Sprt
ntm	internal	V. +xtns
P	preposition	P
past	past	N. +time
PAT	patient	Case
plnt	plant	N
plrl	plural	N
polr	polar	V. +qstn
potn	potential	V. +xtns
prep	perception	V. +xtns
prdc	predicate	Case
prfc	perfective	V. +xtns
prnm	pronominal	N
prnn	pronoun	N. +prnm
prpr	proper	N
prsn	person	N. [+unit]
prtnt	pretence	V
Prv	PREDICATIVE	Case
pssn	possessive	N. +prnm
qntf	quantifiable	N
qstn	question	V
rcnt	recent	V. +xtns
rcpr	reciprocal	V
real	real	V. +xtns
rltr	relator	N
rltv	relative	V. +sttv
rond	round	N

rrls	irrealis	P. +xtns
rslt	resultative	Adv
rtrs	reverse	V
scop	scope	N
shet	sheet	N
slct	selected	N. -unit
sltv	selective	N. +unit
smgn	semantically generalized	N
smln	small and long	N
smsp	semantically specified	N
sngl	singular	N
socl	social	N. [+prmm]
sorc	source	P
spch	speech	V
spkr	speaker	N. +prmm
Sprt	sentence particle	Sprt
sttv	stative	V
them	theme	Case
time	time	N
Tpc	TOPIC	Case
tree	tree	N. +clsf
tms	transitive	V
unit	unit	N. [+nmrl]
V	verb	V
xtns	extension	V / P

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1. INTRODUCTION TO 'A PACOH ANALYTIC GRAMMAR'

'A Pacoh Analytic Grammar' provides an overall analysis of the Pacoh¹ language, including the sounds and sound patterns, word-formation strategies, and means of forming syntactic units. This chapter provides some background information on the Pacoh language, the goals of this grammar, the data used in this grammar, and the means of analysis for each aspect of the grammar.

1.1 PACOH: THE LANGUAGE AND THE ETHNIC GROUP

'Pacoh' is an ethnonym referring to a group of about 30,000 people, most of whom live in the mountainous part of Central Vietnam along the border of Vietnam² and Laos. The Pacoh have traditionally lived in the Central highlands to the west and northwest of Huế, practicing swidden agricultural and hunting.³ 'Pacoh' also refers to the language spoken by the Pacoh, a language that belongs to the Katuic sub-branch of Mon-Khmer, which is in turn a major branch of the Austroasiatic language family (Thomas 1966, Thomas and Headley 1970). The significance of this genetic-linguistic connection is that in terms of phonology, word-formation, syntax, and other linguistic aspects, Pacoh is very representative of the Mon-Khmer language family. This language is also, like many other indigenous minority languages in Southeast Asia, a language undergoing change and loss under the inevitable and rapid industrialization, economic development, and social change taking place.

¹ 'Pacoh' is pronounced /pa.kəh/.

² The Vietnamese government recognizes 54 ethnic groups within its borders (Dang, Chu, and Luu 1984).

1.2 SCOPE AND OBJECTIVES

The primary purpose of this study is to describe the grammar of Pacoh, ‘grammar’ here including phonology, word-formation, and syntax. It is called an ‘analytic’ grammar to distinguish this work from traditional prescriptive grammars or linguistic descriptive works that employ traditional terminology. The terminology used in this grammar is more often than not non-traditional and is aimed at descriptive and theoretical adequacy as much as accessibility to researchers. ‘Analytic’ also identifies a major goal of the work, analysis of Pacoh grammar, rather than description. Thus, ‘A Pacoh Analytic Grammar’ is more of a technical work than a general reference, though it is hoped that the explanation of the theoretical framework and that theory’s explicitness will make the information useful in ways that a traditional grammar might otherwise not be.

Under the umbrella of this primary purpose, it is hoped that this grammar will achieve a few other goals. First, it should contribute to knowledge about human language in general and the languages of Southeast Asia in particular. Second, it should test and develop the theoretical framework used for syntactic analysis, namely Lexicase, a theory that permits explicit explanations of the distribution of syntactic elements in sentences and their structural relationships. Third, it should contribute to the dissemination of information about the marginalized peoples in Southeast Asia. Fourth, it should provide a way to help preserve, if not the Pacoh language, at least records of Pacoh at a stage where the language is less influenced by contact with the peoples outside their increasingly ‘modernized’ lives. It is because of the rapidity of linguistic change and the

³ For a description of Pacoh culture. see R. Watson 1970.

prospective linguistic loss that in-depth descriptions of a language such as Pacoh are needed. Finally, it should be a step towards developing a standardized format for the creation of other grammars on related languages in the region, many of which, if not already endangered, may soon be headed in that direction.

Having so many goals usually means that some may not be met. This grammar, in terms of its comprehensiveness in dealing with spoken Pacoh, is limited by a few factors. As with any language, its usage in daily life varies based on situational requirements and factors of language contact with Vietnamese and neighboring minority languages. Strict fieldwork data collection typically results in a restricted range of data, though adequate for a general description of a grammar. Another problem I had was my limited access to natural language data, primarily due to bureaucratic restrictions regarding ethnic minorities living near the Vietnam-Laos border. Also, this grammar is limited by the frameworks used in it, as would be the case with any grammar. Finally, mistakes are inevitable and I can only hope they interfere as little as possible with the primary goal of sharing information about the Pacoh language.

1.3 DATA COLLECTION AND ANALYSIS

This section describes the process of data collection and analysis for this grammar and summarizes available linguistic data for Pacoh. Two primary external sources of data for Pacoh were used, that of the Watsons (a husband and wife who are researchers in the Summer Institute of Linguistics) and a Vietnamese-Pacoh dictionary and grammar published in Vietnam. The data collection was influenced by two goals: (1) producing an

overall grammar of Pacoh and (2) answering questions posed by the Lexicase Dependency grammatical theory.

1.3.1 Collecting the Data

Collecting the data for this grammar took several steps. I first developed a general outline, based on my knowledge of the typological characteristics of Mon-Khmer languages, of the linguistics aspects of Pacoh that I had hoped to be able to study. Many of the syntactic issues explored were related to areas of inquiry in the Lexicase syntactic theory. I also reviewed the linguistic questionnaire developed by Comrie and Smith (1977) and assorted published materials on Pacoh to further determine linguistic areas of inquiry. Despite the considerable amount of information available on Pacoh (see section 1.3.2), I still had questions that could only be answered through direct contact with native speakers of Pacoh and so fieldwork was necessary.

I conducted fieldwork sessions with several native speakers of Pacoh in Vietnam in 1997 and 1998. The first fieldwork session in 1997 period lasted one week and primarily involved one female high school student from A-Luói district, Thừa Thiên province, though other students in the same school provided assistance on a less consistent basis. The next two fieldwork periods were in 1998, a week with a 45-year-old male from A-Luói and, finally, three days with a 60-year-old male from Quảng Trị province. In the last session, I also worked for a day with two other adult males, one 30 from A-Luói, and the other 60 from Quảng Trị. I wanted to work much longer with these speakers, who were all pleasant and helpful, but the time spent with these speakers was in each case limited to the constraints imposed by local authorities. All of the language

consultants could speak and read Vietnamese, which was both an advantage and a disadvantage. I was able to speak directly with them in Vietnamese rather than having a translator. However, I acknowledge the problem with potential linguistic interference that may be seen among ethnic minorities educated in the Vietnamese system.

Nonetheless, all the data collected was either completely natural and grammatical to the speakers or, at worst, not completely natural but still grammatical.

Strategies for data collection included sentence translation; recordings of given words, phrases, and sentences uttered in isolation; grammaticality checks; free sentence-production with words; and free speech on a given topic. Free speech was generally recorded on cassette tape, while words and sentences spoken in controlled conditions were recorded into a laptop computer using the WinCecil acoustic phonetic software program. Most of the data collected was double-checked for accuracy with the help of the same speakers.

1.3.2 Available Data on Pacoh Speech

The primary data for the analyses of Pacoh linguistic structure was collected during my fieldwork in Vietnam in fieldwork sessions conducted in 1997 and 1998 (see section 1.3.1). Other linguistic materials used for this grammar include previously published materials on Pacoh,⁴ various Lexicase works on Southeast Asian languages,⁵

⁴ See especially the bibliography in this grammar for numerous articles and other works on Pacoh by Richard and Sandra Watson.

⁵ Primarily Indrambarya 1994 on Thai verbs, Sak-Humphry 1997 on Khmer nouns, Wilawan 1993 on Thai and Mandarin Chinese extension verbs, as well as other publications by these authors.

and assorted works on Mon-Khmer languages.⁶ Published material on Pacoh included two primary sources: the various publications by Richard and Sandra Watson and the book entitled ‘Sách Học Tiếng Pakôh-Taôih’ by Nguyễn Văn Lợi, Đoàn Văn Phúc, and Phan Xuân Thành (1986), hereafter abbreviated as ND&P.

The recorded materials consist of a few cassette tapes of data (both my own and that of Richard and Sandra Watson)⁷ and also my own digital acoustic phonetic recordings. I recorded several hours of both free and controlled Pacoh speech. The sources of sentence data and the rough number of sentences are shown in Table 1. In addition to lexical lists of about 2,200 entries from ND&P’s dictionary, I had access to over 2,300 sentences in Pacoh.

Source	Number of Sentences
Personal Field Data	730
Nguyễn et al. (1986)	1.000
Watsons (Various)	600
Total:	2.330

Table 1: Text sources and number of sentences

It should be noted here that syntactic and word-formation patterns are not always consistent among the three sources. One possible reason for the differences is the methods and goals of data collection. A good portion of the Watsons’ sentence data came from an investigation of the discourse of story telling, though other materials

⁶ In particular, see Banker 1964a, Benjamin 1976, Capell 1979, Clark (various), Costello 1966, Diffloth (various), Donegan and Stampe 1983, Ehrman 1972, Gregerson 1976, V. H. Hoàng (various), V. M. Hoàng 1997, Hoàng and Tạ 1998, Huffman (various), Jenner and Pou 1982, C. Miller 1964, J. Miller 1964, D. L. Nguyễn 1975, H. H. Nguyễn (various), V. L. Nguyễn (various), X. H. Nguyễn 1998, Pejros 1996, Pinnow 1965, Premisrat 1987 and 1991, Sak-Humphry (various), and D. Thomas (various). Two excellent bibliographies are Huffman 1986 on Southeast Asian languages and Park 1991 on Austroasiatic languages. ⁷ The Watsons sent me a copy of their tape of Pacoh speech from 1973, for which I am very grateful.

included more strict grammatical description. ND&P's text is a bilingual (Vietnamese-Pacoh) exercise book aimed at developing Pacoh literacy. My own data was collected with the aim of testing the range of syntactic patterns. Another reason is that Pacoh, though spoken in perhaps at most a 50-mile radius, consists of at least four known main dialects⁸ and probably other even more local variation. Supposedly, most of the speakers involved in this research are from the A-Lười district, though that region reportedly contains some linguistic diversity. Finally, all available information was collected over a period spanning 35 years, during the intense conflict in Vietnam and the period of social change under a Communist government. During that time, the population of Vietnam has tripled, and Vietnamese speakers have had to move further into the mountainous interior of Vietnam, where the Pacoh and Vietnam's many other ethnic groups live. That kind of language contact is a likely culprit for some differences between Pacoh spoken by speakers born earlier and later in the twentieth century.

1.3.3 Analyzing Pacoh Sounds

For the analysis of the Pacoh phonological system, the primary sources are R. Watson (1964), ND&P, and the various recordings in 1.3.2. Watson's work was the basis for my analysis, though it differs in the analysis of a few phonemes. ND&P's work was useful since its alphabetically ordered dictionary permitted easy scanning for

⁸ R. Watson et al. (1979) recognized three main dialects in and near A-Lười district. The foreword to the 1979 dictionary distinguished three dialects based on a few key lexical items: PL (Pacoh *lāiq*), PC (Pacoh *cah*) and PA (Pacoh *avaih*). The first two are differences of the word for 'no' (*ləj* and *cah*), while the third is differentiated by its word for 'cooked rice' (*ʔa.va:f*). My own fieldwork in Quảng Trị province has revealed another dialect which shows some lexical influence from the Katuic language Bru, the dominant minority language in that region.

phonological patterns. Research tools for the phonological data collection and analysis included a simple portable Sony cassette recorder with an external microphone and Cecil for Windows acoustic phonetic software.⁹

In the chapter on phonology, the Pacoh sound system is described in general terms, using distinctive features and linear rules in dealing with allophony. Pacoh prosody, syllable structure, and phonotactic constraints are also summarized. Both written and recorded data were used to provide the discussion and analyses. When deemed appropriate, acoustic phonetic recordings took precedence over previously published materials. In determining the complete range of phonemes in Pacoh syllables and words, the Pacoh-Taoh-Vietnamese dictionary (Nguyễn Văn Lợi, Đoàn Văn Phúc, and Phan Xuân Thành (1986), hereafter ND&P) was indispensable, being organized alphabetically by Pacoh and by Vietnamese in different sections. Cassette tape and acoustic phonetic recordings collected during my fieldwork sessions were also crucial in making the connection between phonemic generalizations and phonetic realizations.

1.3.4 Analyzing Pacoh Word-Formation and Syntax

A majority of this grammar consists of syntactic analysis, and so the approach used is considerably important. The Lexicase syntactic theory is used to account for Pacoh syntax and word formation, which hopefully helped maintain a consistent description of different parts of speech and groups of words sharing patterns of word-shape, meaning, and distribution. The analyses provided in this grammar are based primarily on my own fieldwork data, and material taken from other sources was kept to a

⁹ This software is obtainable for free at the SIL website, www.sil.org.

minimum. External sources of data were primarily used for supplementing, clarifying, or verifying what I had found, though they certainly formed the starting point of the inquiry. Though some differences in the lexicon and word-formation patterns existed between the data I collected and that of the Watsons and ND&P, the syntax is fairly uniform among the varieties. Next, the steps taken to explore and analyze Pacoh syntax and word-formation are discussed.

After having gone over previously published data on Pacoh, I prepared a list of sentence types for data collection during fieldwork. These lists were needed to gather general syntactic information and also to test certain questions that I had either before beginning the fieldwork or, when other questions arose, after the fieldwork began. Using the Shoebox for Windows database, I amassed a trilingual Pacoh-English-Vietnamese database of sentences and vocabulary, which was helpful in the early stages of the analysis since it required the making of some hypotheses regarding the lexical subclasses of the words being entered. I continued to use Shoebox until my second fieldwork session in Vietnam in 1998 when the data entry became too burdensome.

During my own fieldwork, I used a variety of methods to collect syntactic data. The goals were to ensure the collection of data was as natural as possible and also to test specific syntactic questions. The methods used included (1) acceptability tests, (2) translation from Vietnamese, and (3) obtaining descriptions of daily life. To start the fieldwork, I created tables of verb types for testing, marking each verb as plus or minus for the assorted lexically distinctive features used in Lexicase. I also created lists of Vietnamese sentences for translation to answer specific questions. The latter approach

was hazardous since the Pacoh were able to use word-for-word translations that did not necessarily represent pragmatically natural Pacoh speech, though the data did at least represent grammatical sentences. Then, 'Yes-No' tests were used either to verify or exclude text data. To go beyond the available text data, which was primarily collected under controlled circumstances that can limit the range of speech registers, I asked some Pacoh speakers to discuss or describe things in their daily life. One consultant was quite enthusiastic in discussing his favorite childhood pastime of building animal traps, discussing different kinds of animals, the parts of the traps, and how they functioned. As my own limited Pacoh increased, I used it as much as possible during elicitation, though there simply was not enough time for me to fumble around in Pacoh, and most of the data was collected through the use of Vietnamese.

I had to explore many aspects of Pacoh syntax since my goal was to provide a complete grammar of Pacoh. Through the sorting of wordlists with distinctive syntactic features, sorting of the Shoebox database, and hundreds of pages of hand-written notes and syntactic tests, the syntactic analyses in this grammar came to fruition. Lexical subcategorizations of each part of speech are presented throughout this work. The focus is always syntactic, though in some cases, semantic features are used at the lower levels of lexical subcategorization. Though most of the subcategorization and placing of words into parts of speech happened with little difficulty, some words and categories of words (in particular, certain prepositions, relator nouns, and certain phonologically complex nouns containing incorporated material) supposedly already subcategorized are in fact still open questions and really do require more data and analysis. Finally, negative

evidence is provided when possible, and when it is not and a point of ambiguity exists, it is mentioned.

The material presented is limited in a number of ways. It is based on available data, which is still rather limited due to the isolated regions in which the Pacoh live and the complex bureaucratic system of Vietnam, which puts heavy limits on the kind and length of research done in former war zones bordering Laos. Moreover, the linguistic judgements of native speakers of Pacoh sometimes differed, while time available to investigate those differences was extremely limited. Also, though the 'grammar' of a speaker is what it is, and therefore always 'perfect', mistakes made through human error (researcher or speaker) are inevitable. The linguistic background of researchers will always influence what data is collected, how it is analyzed, and how it is explained. Overall, what is described in this grammar is limited to available information, meaning that there is probably a great deal more variety than what is presented in this work, though this grammar is hopefully a solid foundation for further investigation.

2. PHONOLOGY

This chapter describes Pacoh phonology based on existing data, including various texts, tape recordings, acoustic phonetic analyses, and field notes, as stated in section 1.3. This summary of the Pacoh phonological system contains primary subsections on (1) transcribing Pacoh, (2) phonological levels considered in this study, from features to phrases, (3) the Pacoh phoneme inventory, (4) the Pacoh syllable and phonological word, and (5) Pacoh loanword phonology. Secondary subsections further discuss allophonic variation and reduplication.

2.1 *TRANSCRIBING THE SOUNDS OF PACOH*

The means of transcription used in this grammar to represent Pacoh, a language not written by its own speakers, is an IPA-based but phonemically oriented script. As with any unwritten language, the matter of what orthographic system to use is not easily resolved. Phonetic accuracy, typographical convenience, pre-existing informal scripts used by native speakers, and sociopolitical issues are all relevant to choosing an orthography. The purpose of the script used in this grammar is to make the material available to the widest academic audience, hence the use of IPA. What the Pacoh themselves may use in the future, if anything, is a question that cannot be considered in the presentation of this data and its analysis.

Pacoh has been previously represented in print in all essentially academic works, by means of three somewhat differing transcription systems. The first system was developed by Richard and Sandra Watson while living with the Pacoh in the 1960s and early 1970s. As with other members of the Summer Institute of Linguistics, the Watsons

based their system on Vietnam's orthographic system, Quốc Ngữ.¹⁰ A similar system, also based on Quốc Ngữ, appeared in a 1986 publication, a Pacoh-Taoh language study text (ND&P). The choice of Quốc Ngữ was both natural, since it was already prevalent as a means of printing, and practical, since Quốc Ngữ contains enough diacritics to indicate all the phonemic distinctions, a particularly important detail considering the 30-vowel phoneme system of Pacoh. The most recently published system of transcription is that of Pejros in 'A Comparative Katuic Dictionary' (1996), which is primarily IPA-based. Table 2 lists three above-mentioned systems (Pejros, Viet, and Watson) with the one used in this dissertation in the left column (Alves).

	Alves	Pejros	Viet	Watson
1.	p	p	p	p
2.	t	t	t	t
3.	c	c	ch	ch
4.	k	k	k	c
5.	ʔ	ʔ	q / -	q / -
6.	p ^h	ph	ph	ph
7.	t ^h	ph	th	th
8.	k ^h	kh	kh	kh
9.	b	b	b	b
10.	d	d	d	d
11.	j	ʔj	j	j
12.	m	m	m	m
13.	n	n	n	n
14.	ɲ	ɲ	nh	nh
15.	ŋ	ŋ	ng	ng
16.	r	r	r	r
17.	l	l	l	l
18.	ʃ	s	s	s

¹⁰ A useful work that summarizes the Vietnamese national orthography, Quốc Ngữ (literally 'National Language'), and the regional pronunciations of this system—including Northern, Central, and Southern Vietnamese—is that of Nguyễn Đình Hòa, 'Vietnamese-English Dictionary' (1966).

19.	h	h	h	h
20.	w	w	u	u
21.	j	j	i	i
22.	j'	j?	iq	iq
23.	w'	w?	uq	iq
24.	ʃ	jh	ih	ih
25.	i:	i:	i	i
26.	e:	e:L	ê	ê
27.	e:	e:T	ee	e
28.	ɛ:	ɛ:	e	e
29.	i:	i:	ı	ı
30.	ə:	ə:L	σ	σ
31.	ə:	ə:T	σσ	σ
32.	a:	a:	a	a
33.	u:	u:	u	u
34.	o:	o:L	ô	ô
35.	o:	o:T	oo	o
36.	ɔ:	ɔ:	o	o
37.	i	i	í	í
38.	e	e.L	é	é
39.	e	e.T	ecé	e
40.	ɛ	ɛ:	é	é
41.	i	i	ı	ı
42.	ə	ə:L	â	â
43.	ə	ə:T	σσ	σ
44.	a	a	ā	á
45.	u	u	ú	ú
46.	o	o.L	ó	ó
47.	o	o.T	oó	ó
48.	ɔ	ɔ	ó	ó
49.	ia	ia.L	ia	ie
50.	ia	ia.T	ea	ea
51.	ia	ia.L	ıa	ıa
52.	ia	ia.T	σa	σa
53.	ua	ua.L	ua	ua
54.	ua	ua.T	oa	oa

Table 2: Comparison of systems of transcribing Pacoh

Some of the differences in typographic convention have to do with the representation of the vowel system and the marking of vocalic phonation distinctions. The tilde underneath marks vowels with a slight pharyngeal raspiness.

The phonological word in Pacoh consists of at most two syllables, while the syntactic word has no phonological limit. While the phonological word in Pacoh has only one main stress, a syntactic word may have more than one. Reduplicants and a variety of lexical compounds that are derived from monosyllabic forms in Pacoh consist of two phonological words, since they consist of single syllables, but two equal degrees of stress. A hyphen is used to separate phonological words¹¹ in a single syntactic word, while periods separate syllables within a phonological word. Examples of different combinations of phonological and syntactic words are shown in Table 3.

	FORM	INTERLINEAR	GLOSS
1.	ʔi.ŋáj-ʔi.nó:	day-previous	yesterday
2.	jáw-bá:j	friend-friend	friends (in general)
3.	ʔu.ráʔ	paper	paper
4.	ʔu.rá:ʔ-ʔu.ʔá:r	paper-REDUP	writing (in general)
5.	jé:l-jó:l	drift-REDUP	to drift

Table 3: Examples of the marking of syllables and phonological compounds

The first two examples show single syntactic words formed through word-formation strategies based on other free forms.¹² The fourth and fifth examples are formed through reduplicative word-formation strategies. Stress is indicated here on each phonological

¹¹ These are not meant to separate morphemes, a term that is incompatible with the approach towards word-formation in this grammar.

¹² Evidence for these forms as single lexical items rather than phrases composed of multiple lexical items comes from the fact that the form /ʔi.no:/ does not occur as a separate lexical item and that the form /jaw-ba:j/ cannot be reversed.

word that bears it, though throughout this grammar, stress is not marked, being predictable. Every phonological word has a single stress, which occurs on final syllables.

2.2 FROM FEATURES TO PHRASES

In order to present a more unified picture of Pacoh phonological structure, albeit a somewhat simplified one, streams of speech are considered to consist of several identifiable levels of phonological and phonetic organization. Figure 1 (based on Hayes 1989) lists these levels and associated symbols.

<u>Level</u>	<u>Symbol(s)</u>
Phrase	ϕ
Phonological Word	ω
Feet	F
Syllable	σ
Mora	μ
Segments	C/V

Figure 1: Organization of phonological levels

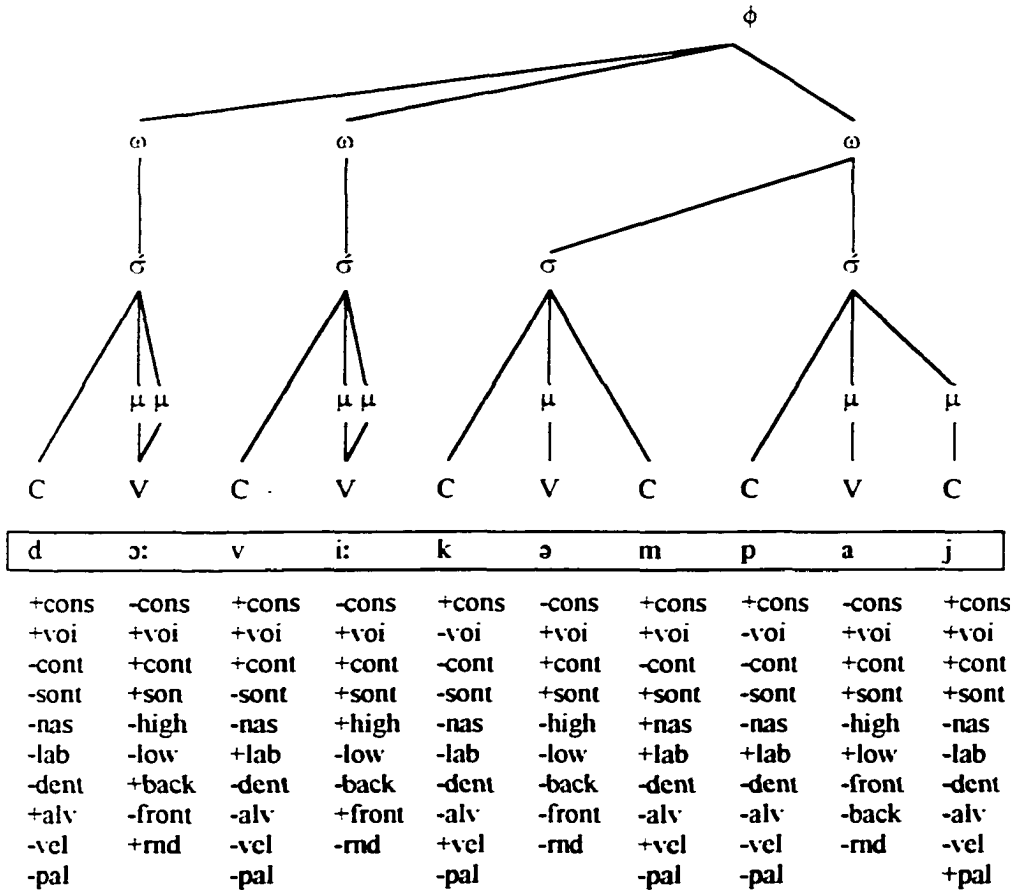
The phonological phrase is defined primarily in terms of intonation; a phonological phrase is an intonational unit that may have more than one phonological word but has only a single main stress (and may contain more than one syntactic word as defined in section 3.2.1). A phonological word in Pacoh consists of one or two syllables

(which differs from the definition of 'word' from a syntactic perspective) and one main stress. Feet consist of groups of pairs of syllables. A Pacoh syllable consists of one or two moras (two in stressed syllables and one in unstressed syllables). A mora can consist of vowels and/or consonants, though not all consonants may contribute to moraic weight in Pacoh. Each level generally interacts with the immediately adjacent one, though consonants often have a direct connection with the syllable rather than the mora. In S1, the intonational unit consists of three phonological words (and in this case, they are all syntactic words as well), one bisyllabic and two monosyllabic words. Unstressed presyllables of bisyllabic words have one mora, while stressed syllables have two moras. Consonants may bear moraic weight to satisfy prosodic requirements, though only with short vowels. Long vowels already require two moras. In the second syllable of the bisyllabic word, a consonant (the glide [j]) bears moraic weight, whereas the [m] of the monomoraic presyllable does not, moraic weight in that syllable being borne by the vowel. Consonant codas never bear weight in presyllables and may in main syllables, but only with short vowels. Only nasal presyllables bear moraic weight since those syllables lack main vowels. The distinctive features demonstrate various redundancies, such as all vowels being [+cont] and nasals and liquids being [+son]. The following subsections deal with various combinations of these levels, grouping features and phonemes in one subsection and prosodic elements (moras, syllables, words, and phrases) in another.

S 1: Phrase to features

'He has a wife.'

ɔ: vi: kəm.paj
 3s have wife



2.3 PHONEMES AND FEATURES

This section discusses Pacoh consonants and vowels, their distribution in words, and related allophonic variation.

2.3.1 Consonants

Pacoh has 23 consonant phonemes, as listed in Table 4. R. Watson (1964) provided examples of and evidence for 18 consonant phonemes through examples of

minimal distinctions. The additional five are accounted for here by the inclusion of three aspirated stops (contrasted with clusters in section 2.3.2) and two post-glottalized glides (section 2.3.1.4). Phonemes in loanwords from Vietnamese, as discussed in section 2.5, are not included in the table since they are limited to a very restricted set of lexical items.

Pacoh consonants are described in terms of distinctive features in Table 5. The manners of articulation include continuant, sonorant, spread, voice, and nasal. Places of articulation include labial, alveolar, palatal, velar, glottal, and lateral.

Most of the phonemic categories in Pacoh are uncontroversial and do not require much more explanation than the manner and place of articulation as shown above. In the subsequent sections, some additional statements are made regarding general feature-based categories as well as specific phonemes that are phonetically complex or show phonetic variation, such as the palatal fricative and the post-glottalized glides. Also, discussion is provided where the views presented here differ from previous work.

	Bilabial	Alveolar	Palatal	Velar	Glottal
Stop, Unvoiced	p	t	c	k	ʔ
Stop, Aspirated	p ^h	t ^h		k ^h	
Stop, Voiced	b	d	j		
Nasal	m	n	ɲ	ŋ	
Fricative			ʃ		h
Liquid, Non-lateral		r			
Liquid, Lateral		l			
Glide	w		j		
Post-glottalized	wʔ		jʔ		

Table 4: Pacoh consonants

		cons	cont	sono	spre	voic	nas	lab	alv	pal	vel	glot	lat
1.	p	+	-	-	-	-	-	+	-	-	-	-	-
2.	t	+	-	-	-	-	-	-	+	-	-	-	-
3.	c	+	-	-	-	-	-	-	-	+	-	-	-
4.	k	+	-	-	-	-	-	-	-	-	+	-	-
5.	ʔ	+	-	-	-	-	-	-	-	-	-	+	-
6.	p ^h	+	-	-	+	-	-	+	-	-	-	-	-
7.	t ^h	+	-	-	+	-	-	-	+	-	-	-	-
8.	k ^h	+	-	-	+	-	-	-	-	-	+	-	-
9.	b	+	-	-	-	+	-	+	-	-	-	-	-
10.	d	+	-	-	-	+	-	-	+	-	-	-	-
11.	j	+	-	-	-	+	-	-	-	+	-	-	-
12.	m	+	-	+	-	+	+	+	-	-	-	-	-
13.	n	+	-	+	-	+	+	-	+	-	-	-	-
14.	ɲ	+	-	+	-	+	+	-	-	+	-	-	-
15.	ŋ	+	-	+	-	+	+	-	-	-	+	-	-
16.	ʃ	+	+	-	-	-	-	-	-	+	-	-	-
17.	h	+	+	-	-	-	-	-	-	-	-	+	-
18.	l	+	+	+	-	+	-	-	+	-	-	-	+
19.	r	+	+	+	-	+	-	-	+	-	-	-	-
20.	w	+	+	+	-	+	-	+	-	-	-	-	-
21.	j	+	-	+	-	+	-	-	-	+	-	-	-
22.	wʻ	+	-	+	-	+	-	+	-	-	+	+	-
23.	jʻ	+	-	+	-	+	-	-	-	+	-	+	-

Table 5: Distinctive features of Pacoh consonants

2.3.1.1 General Consonant Classes

Pacoh **voiceless stops** occur in both syllable-initial and syllable-final positions.

They also occur as onsets to presyllables. They are unreleased finally.

	INITIAL	FINAL	PRESYLLABLE
/p/	peʔ 'banana'	ki:p 'each'	pa.kəh 'Pacoh'
/t/	toʔ 'arrive'	pi:t 'big'	tə.r.piən 'exchange'
/c/	cə: 'return'	ʃe:c 'meat'	ci.ca 'to eat (general)'
/k/	ket 'small'	da:k 'water'	kəm.maŋ 'listen'
/ʔ/	ʔe: 'many'	taʔ 'do'	ʔa.ʔiŋ 'hate'

Table 6: Distribution of Pacoh voiceless stops

/p/, /t/, and /k/ occur with the highest frequency of all consonants.¹³ However, this is primarily due to their use in word-initial substrings in derived bisyllabic words. In monosyllabic words, their occurrence is generally comparable to other categories of phonemes. The glottal stop is discussed further in subsection 2.3.1.2.

	INITIAL	PRESYL-INIT
/b/	bul 'stone'	ba.be:t 'a swift (bird)'
/d/	da:k 'water'	–
/j/	ja:ŋ 'to pass over'	ɟəŋ.ɟəl 'in a flash'

Table 7: Distribution of Pacoh voiced stops

Voiced stops occur only as onsets (not codas) in both main and presyllables. As presyllable onsets, they occur only in reduplicant forms as presyllable onsets. No example was found with /d/ as the onset of a presyllable, though this is probably possible.

Aspirated stops occur strictly as onsets in main syllables. They are quite rare in available data, barely several occurrences per phoneme.

	INITIAL
/p ^h /	p ^h o:ʔ 'mud'
/t ^h /	t ^h et 'wrong'
/k ^h /	k ^h ir 'jump over'

Table 8: Distribution of Pacoh aspirated stops

Though the Quốc Ngữ –based orthography used ‘ph’ to represent /p^h/ in Pacoh (see Table 2), that orthographic symbol represents the sound /f/ in Vietnamese and in a few Vietnamese loanwords in Pacoh.

Pacoh **nasals** have a complete range of distribution throughout syllables. All Pacoh nasals can occur syllable-initially and syllable-finally in both main syllables and

¹³ Of the approximately 2,200 entries in ND&P 1986, [p], [t], and [k] constituted about 50% of the initials. This number is inflated by their usage in word-formation primarily of bisyllabic verbs but also nouns.

presyllables. They can also be syllable peaks in presyllables. In that position, they always have glottal-stop onsets. Clearly, some kind of phonetic reduction is resulting in the loss of vowel distinctions in closed presyllables and in the complete loss of vowels in presyllables with nasals as the sonorant peaks, as discussed in section 2.4.4.2. Pacoh nasals rarely occur as presyllable onsets in available data. As finals or peaks in presyllables, they match the place of articulation of the main syllable's onset.

	INITIAL	FINAL	PRESYL-INIT	PRESYL-FIN	PRESYL-PEAK
/m/	mɔ:h 'nose'	nam 'if'	ma.mɔ:j 'to hunt'	təm.mɛ: 'new'	?m.piən 'top'
/n/	ni:m 'only'	?iən 'easy'	--	kən.ti? 'time/trip'	?n.tih 'that (far)'
/ŋ/	ŋɔŋ 'watch'	pɛ:ŋ 'shoot'	ŋəŋ.ŋɛ:l 'prompt'	kəŋ.co:l 'to dance'	?ŋ.cɛ: 'louse'
/ŋ/	ŋɛ? 'all'	kliŋ 'many'	ŋəl.ŋah 'show off'	pəŋ.kra: 'repair'	?ŋ.koh 'that'

Table 9: Distribution of Pacoh nasals

Pacoh has two types of **glides**, plain and post-glottalized. They are distinguished from the offglides of diphthongs since they all can follow any vowel or diphthong. Only /w/ is found to occur in existing data as a presyllabic onset (a reduplicant of the onset of a main syllable). Plain glides occur in both initial and final positions in main syllables, while post-glottalized glides occur only in syllable-final positions.

	INITIAL	FINAL
/w/	wi: (vi:) 'to have'	?n.naw 'who'
/j/	jəw 'friend'	kəm.paj 'wife'
/wʔ/	--	?iəwʔ 'old'
/jʔ/	--	ləjʔ 'no'

Table 10: Distribution of Pacoh glides

The status of /w/ initially is somewhat controversial, since it most often is realized as [v] in onset positions, as discussed in Section 2.3.4.4.

Pacoh has two **fricatives**, both of which may occur in both onset and coda positions in main syllables. In available data, only /ʃ/ occurs as the onset of a presyllable in a few words, and then, only as a reduplicant.

	INITIAL	FINAL	PRESYLLABLE
/ʃ/	ʃər 'to ascend'	rɪʃ 'root'	ʃa.ʃuə 'rummage'
/h/	həj 'time'	dah 'to dare'	--

Table 11: Distribution of Pacoh fricatives

/ʃ/ is realized as [s] in syllable-initial position. When /ʃ/ is a coda, a palatal glide occurs after the main vowel, resulting in what sounds like a complex affricated palatal glide [j^h] or a single unvoiced palatal glide [j]. See section 2.3.4.3 for more discussion.

Liquids in Pacoh include /r/ and /l/. Like nasals, Pacoh liquids may occur in both syllable initial and final positions in both main and presyllables. The alveolar liquid /r/ is generally trilled in careful speech in all positions and even as the second consonant in clusters (see section 2.3.2, Consonant Clusters).

	INITIAL	FINAL	PRESYLL-INIT	PRESYLL-FIN	PRESYL-PEAK
/l/	lɔ:m 'liver'	vɛ:l 'village'	la.luh 'to run'	pəl.lo: 'tube'	?l.lam 'one unit'
/r/	ra:w 'to clean'	ba:r 'two'	ri.rɔ:j 'a fly'	pər.ran 'bait'	?r.ba:ŋ 'sky'

Table 12: Distribution of Pacoh liquids

In the following sections, special discussion is given to certain phonemes that maintain a somewhat controversial status.

2.3.1.2 The Glottal Stop

In Pacoh, glottal stops are distinctive and deserve status as phonemes. In word-final position, there are minimal pairs that cannot be predicted (e.g., *dɔ:* 'he' versus *dɔ:ʔ* 'put'), but even in syllable initial position, where the glottal stop is more predictable,

there is evidence for their status as distinctive. In part, this claim follows the typological constraint that all syllables must have consonant onsets (section 2.4.1). Glottal stops in Pacoh are clearly distinctive within words in intersyllabic positions, as demonstrated in minimal pairs.

<u>Glottal Stop</u>	<u>Other Phoneme</u>
?a.ʔaj `ill`	?a.kaj `child`
pa.ʔoh `to scold`	pa.ŋoh `to put in`

In onset position, however, the distinctiveness of glottal stop is not always apparent. Previous methods of transcription (Watson and ND&P) simply left out word-initial glottal stops, suggesting that Pacoh allows vowels word-initially (e.g., in the Viet script a-i (IPA *ʔa.ʔi:*) ‘mother’). However, without glottal stops, we might expect certain natural assimilatory phenomena. Some evidence from Pacoh reduplication demonstrates the distinctiveness of glottal stops in both word-initial and syllable-initial position.

<u>Gloss</u>	<u>Quốc Ngữ</u>	<u>IPA transcription</u>
`peals (of laughter)`	ck-i-ck	?εk.ʔi.ʔεk
`gaps (while smiling)`	háh-i-háh	ha:h.ʔi.ha:h

In this sample, both base forms reduplicate entirely with an additional syllable [ʔi].

Without glottal stops, we might expect to see the incorrect form *[εk.ʔi.jεk], with an epenthesized palatal glide or the final [k] or [h] of the first syllables to syllabify with the following syllable, creating the incorrect forms *[?ε.ki.ʔεk] and *[ha:.hi.ha:h].

Glottal stops are also clearly phonetically distinctive in phrases consisting of more than one syntactic word. In speech sequences, consonant finals do not resyllabify with the vowel of the next word. This indicates that glottal stops are present in phonological representation before syllabification.

<u>Gloss</u>	<u>Quốc Ngữ</u>	<u>Transcription</u>	<u>Incorrect Forms</u>
'Two days.'	bar ingāi	ba:r ?i.ŋaj	*[ba.ri.ŋaj]
'This book.'	sach nnéh	ʃac ?nnéh	*[ʃa.cn.néh]

Thus, both phonetically and phonemically, all Pacoh syllables require initial consonants, which can include glottal stops. Similarly in sentences, the glottal stops typically prevent phonetic changes. In S2, taken from recorded data, the original Viet Script is shown above the IPA transcription.

S 2: Example of glottal stops in word-initial position

'My father looks like me.'

(Viet)	rmat	a-ām	arâq	rmat	ku.
(IPA)	?r.mat	?a.?am	?a.rə?	?r.mat	ki:
(Gloss)	shape	father	similar to	shape	Is

In this sentence, recorded with natural intonation and speed, all the glottal stops were clearly pronounced with no assimilation or epenthesis.

2.3.1.3 The Palatal Fricative

This section discusses a variety of phonetic realizations that are here considered to be the palatal phoneme /ʃ/. The phonemic status of the consonant transcribed in the Viet and Watson scripts as 's' in syllable-initial position and /ih/ in syllable-final position is controversial. In this section, the initial 's' will be dealt with first and then the final 'ih'.

R. Watson (1964) considered 's' to be a voiceless alveo-palatal fricative, though noting that it alternated freely with [ç]. In my own recordings, the sound ranged from an alveolar to a palatal fricative. Assimilatory processes between nasal presyllables and the 's' onset of main syllables suggest that this phoneme is a palatal. All presyllabic nasal peaks assimilate to place of articulation of the main syllable onset.

<u>Form</u>	<u>Gloss</u>
ʔn.ʃuər	‘to tell old stories’
ʔn.çə:	‘louse’
ʔn.nø:p	‘ugly’

Thus, the presyllabic nasal is a palatal nasal before all three palatals /c/, /ɲ/, and, presumably, /ʃ/.

In regards to the sound represented in the Watsons’ and ND&P’s transcription as ‘ih’, my position is that that sound is also /ʃ/, which, just like /h/, occurs in both syllable initial and final positions. This sound is represented by Watson and ND&P as ‘ih’ in order to indicate both the affrication and the palatalized on-glide. Another possibility is that this is [j], an unvoiced palatal glide.¹⁴ Indeed, phonetically, this is a possible realization. Historically, this sound corresponds to /s/ in Taoih,¹⁵ a close linguistic relative.

<u>Gloss</u>	<u>Pacoh</u>	<u>Taoih</u>
‘root’	riəʃ	riəs
‘tail’	cu:ʃ	ʔi.ci:s
‘cotton’	ka.paʃ	ka.pas

Based on phonetic, phonological, and comparative evidence, /ʃ/ is considered to be a phoneme which has a few phonetic realizations.

2.3.1.4 *The Post-Glottalized Glides*

The word-final sequences ‘iq’ and ‘uq’ used by the Watsons and ND&P are here considered to be single complex segments, post-glottalized glides, /jʔ/ and /wʔ/. Since the shape CCV:C is considered the maximal syllable shape, these cannot be sequences of

¹⁴ Suggested by Gerard Diffloth. personal communication.

diphthong off-glides and final glottal stops since they can appear as the codas of words that have diphthongs (e.g., *ʔiəwʔ* ‘old’). The primary argument against considering those phonetic sequences as being clusters is that syllable-final clusters would violate syllable structure constraints in Pacoh, which permit one consonant at most syllable finally (see section 2.4.1). Though possible, having final clusters would also go against general typological tendencies in the phonological systems of neighboring languages in the Southeast Asian region, whereas post-glottalized finals are not.

Another question is where these sounds fit in the overall phonemic system. While considering those sounds to be single complex segments, R. Watson (1964) also considered those segments to be allophonic variants of voiced stops. Questions of the overall phonemic system, as well as historical and typological details, suggest that these sounds are distinct from voiced phonemes. Watson’s claim that ‘uq’ and ‘iq’ are allophones of /b/ and /j/ is an attempt to balance the overall phonemic system of Pacoh. However, having only two finals corresponding to voiced consonants while excluding /d/ still creates a somewhat uneven and unlikely system.

Another problem with positing these as correspondences with voiced stops is typological in nature. Most neighboring languages spoken in Southeast Asia do not have syllable-final voiced stops, a statement that can be made of other closely related Katuic languages, such as Taoih (ND&P 1986 and my personal notes), Bru (Hoàng and Tạ

¹⁵ Data on Taoih comes from ND&P’s 1986 trilingual Vietnamese-Pacoh-Taoih dictionary.

1998), and Katu (H. H. Nguyễn and V. L. Nguyễn 1998).¹⁶ Historical details also raise issues. First, why /d/ has no post-glottalized counterpart is unclear. If there can be no historical-comparative evidence that shows what final /d/ became in the system, the position becomes less tenable (though admittedly not impossible). Second, historically, Pacoh /jʔ/ usually corresponds to Taoih /c/¹⁷ and probably comes from Proto-Katuic */c/ (cf. Pejros 1996). Pacoh /wʔ/ is the same as in cognates in Taoih and is of uncertain historical origins. Positing that both glides have post-glottalized counterparts is a slightly more balanced picture and matches the typological and historical picture as well.

The glottalization of these sounds has played a part in Pacoh loanword phonology when borrowing Vietnamese words with glottalized tones (section 2.5).

2.3.1.5 Sonorant Presyllables: Nasals and Liquids

Sonorant presyllables lacking vowel nuclei in Pacoh may consist of the nasals (/m/, /n/, /ŋ/, and /ɲ/) or the liquids (/l/ and /r/). All have glottal stop onsets. The nasals consistently occur before consonants of matching places of articulation. Presyllabic liquids show no such assimilation.

Gloss	Form	Gloss	Form
‘which’	?m.mə:	‘armpit’	?l.pa:ʔ
‘this’	?n.tih	‘sky’	?r.ba:ŋ
‘louse’	?ɲ.cə:	‘forget’	?l.lə:j
‘that’	?ŋ.koh	‘vegetable’	?r.na:m

Table 13: Pacoh sonorant presyllables

¹⁶ Some exceptions include some Aslian languages in Malaysia (cf. Benjamin 1976 (Temiar), Diffloth 1975 (Jait-Hut), and my own field notes (Semai) taken in 1998).

¹⁷ All data on Taoih come from ND&P 1986.

These syllables do not have phonetic vowel nuclei. Spectrographs show that these nasal presyllables do not have second formant frequencies as would be expected of vowels, and they have a relatively lower intensity than presyllables with vowel peaks.

One argument against the claim that these are syllables without vowels is that there are no minimal distinctions in which a presyllable has an initial glottal stop, schwa, and final nasal. Thus, there is *kəm.paj* ‘wife’ with a schwa presyllable peak, but not **km.paj* without one, and there is *?ŋ.koh* ‘that’, which has the sequence glottal stop plus nasal syllable peak, but not **?əŋ.koh* with schwa. Many of these nasal presyllables are related to the genitive relator noun /?ən/, which, when occurring as a distinct syntactic word, is generally pronounced with a fully recognizable schwa (though that syllable can be phonetically reduced in rapid speech streams to a purely nasal syllable). However, the view taken here is that main syllables require vowels, while presyllables simply require sonorants. See section 2.4.4.3 for further discussion on presyllable vowel reduction.

2.3.2 Consonant Clusters

Pacoh has five consonant clusters involving sequences of voiceless stops and liquids. These include [kl], [kr], [pl], [pr], and [tr]. Such clusters accord with the sonority sequencing principle in that the less sonorous voiceless stops are farther from the nucleus than the sonorant liquids.

Cluster	Example	Gloss
[kl]	kliŋ	‘many’
[kr]	krum	‘thunder’
[pl]	ploh	‘to ask’
[pr]	prɛ:ŋ	‘dry’
[tr]	tru:	‘deep’

Table 14: Distribution of Pacoh nasals

Both the Watsons and ND&P considered the phonetic sounds [p^h], [t^h], and [k^h] to represent consonant cluster phonemes. This view does have merit in that it parallels the shape of other Pacoh clusters (e.g., /pr/, /kl/, etc.). R. Watson's (1964) primary argument is a morphophonological test, one of infix insertion (to use traditional terminology, which is otherwise absent in this grammar). Presently, such insertion appears only in a few fossilized remnants and appears to be a diachronic phenomenon (e.g. *k^hiər* 'to sweep yard' becomes *ka.niər* 'a yard broom', in which the [h] is lost).

Nonetheless, I am taking the position that the aspirated forms in modern Pacoh are stops having the feature spread glottis. Though this approach increases the number of phonemes in the system, it acknowledges the typological tendency in Southeast Asia toward onset cluster reduction. The reduction from word-initial consonant clusters to single phonemes is a natural phonological process that has occurred and is taking place in languages in this region.¹⁸ With the continuing bilingualism in Pacoh and Vietnamese, the Pacoh are much more likely to lose not only those clusters, but also some associated word-formation strategies as well. One piece of data that could resolve the issue is reduplication in which the presyllable copies phonemic material from the main syllable onset, but until such evidence is found, the current position will be kept.

2.3.3 Vowels and Diphthongs

In this section, the Pacoh vowel system is summarized, and then vowels, diphthongs, and vocalic phonation are each dealt with in separate subsections. Pacoh has

a rich vowel system, having 24 monophthongs and six diphthongs. Both Watson (1964) and ND&P recognized three degrees of height (high, mid, and low) and three degrees of advancement (front, central, and back).¹⁹ In addition, the mid vowels are divided by the feature [\pm RTR].²⁰ The [+RTR] vowels are pronounced with a slight degree of raspiness, while the [-RTR] vowels are clear. R. Watson (*ibid.*) described these as ‘lax’ (here +RTR and raspy) versus ‘tense’ (here -RTR and clear) respectively. The inclusion of / ϵ / and / ω / as low vowels is not to indicate that they are pronounced phonetically as low, but rather that this is their position within the overall phonological system.

	SHORT				LONG		
	Front	Central	Back		Front	Central	Back
High	i	i	u		i:	i:	u:
Mid [-RTR]	e	ə	o		e:	ə:	o:
Mid [+RTR]	ɛ	ɔ	ɔ		ɛ:	ɔ:	ɔ:
Low	ɛ	a	ɔ		ɛ:	a:	ɔ:

Table 15: Pacoh vowels

Three degrees of depth and the [\pm RTR] distinction result in six diphthongs.

	Front	Central	Back
+RTR	iə	iə	uə
-RTR	iə:	iə:	uə:

Table 16: Pacoh diphthongs

In Table 17, distinctive vowel features are indicated for each vowel phoneme. In Table 17, and for general purposes in this grammar for marking length distinctions, I have used

¹⁸ For example, the Chamic languages of the Vietnamese have shown this kind of loss (Lee 1964 and Doan 1988).

¹⁹ However, R. Watson, S. Watson, and Cubuat (1979) later posited a restructured system, with six vowels as the base, split once by register to twelve, and again by length into 24 monophthong vowel phonemes. Essentially, the top two rows of Table 15 were the high series of the register system and the lower two rows were the low series. This system has not been used here since the reduction of the phonological system to a base 6 (as opposed to nine) is considered typologically marked in this region. Furthermore, this puts a higher amount of distance between the phonological representation and the phonetic realization.

the feature [+short] rather than [+long] as the basic feature since the former has more phonotactic constraints and thus seems more ‘marked’ than the latter. Whereas long vowels can occur in both open and closed syllables, short vowels can only occur in unstressed or closed stressed syllables, not open stressed syllables.

	short	high	low	round	front	back	RTR
i	+	+	-	-	+	-	-
e	+	-	-	-	+	-	-
ɛ	+	-	+	-	+	-	-
ɨ	+	+	-	-	-	-	-
ə	+	-	-	-	-	-	-
a	+	-	+	-	-	-	-
ɛ̃	+	-	-	-	+	-	+
ə̃	+	-	-	-	-	-	+
ɔ	+	-	-	+	-	+	+
u	+	+	-	+	-	+	-
o	+	-	-	+	-	+	-
ɔ̃	+	-	+	+	-	+	-
i:	-	+	-	-	+	-	-
e:	-	-	-	-	+	-	-
ɛ:	-	-	+	-	+	-	-
ɨ:	-	+	-	-	-	-	-
ə:	-	-	-	-	-	-	-
a:	-	-	+	-	-	-	-
ɛ̃:	-	-	-	-	+	-	+
ə̃:	-	-	-	-	-	-	+
ɔ:	-	-	-	+	-	+	+
u:	-	+	-	+	-	+	-
o:	-	-	-	+	-	+	-
ɔ̃:	-	-	+	+	-	+	-

Table 17: Distinctive features of Pacoh vowels

Diphthongs in Pacoh peak initially. The first parts of diphthongs are phonetically distinctive and determine the phonetic realizations of the non-distinctive second halves (see section 2.3.4.1 on diphthongs and phonetic realizations). The diphthongs, like mid-

²⁰ RTR, or retracted tongue root, refers to the position of the tongue root, which then may have a variety of

vowels, are differentiated by the feature [\pm RTR]. Phonetic realizations of these phonemes are discussed in section 2.4.3.3. Pacoh diphthongs are listed in Table 18.

	iə	ie	uə	ɨə	ɨe	ue
high	+	+	+	+	+	+
low	-	-	-	-	-	-
round	-	-	+	-	-	+
front	+	-	-	+	-	-
back	-	-	+	-	-	+
short	-	-	-	-	-	-
RTR	-	-	-	+	+	+

Table 18: Distinctive features of Pacoh diphthongs

2.3.3.1 *Classes of Vowel Phonemes*

This subsection briefly discusses attributes of vowel phoneme class distinctions, including long/short and tense/lax. Perfect minimal pairs differentiating the said distinctions are rare. R. Watson (1964) provided an almost complete list of vowel distinctions based on length, monophthong/diphthong, and tense/lax distinctions (corresponding to [\pm RTR]), all of which were demonstrated in recordings taken by the Watsons and verified during my own fieldwork.

Long and short vowels can be demonstrated with a few minimal pairs. Long vowels can occur in both open (having no final consonant) and closed (having final consonants) syllables, while short vowels can only occur in closed syllables. The duration ratio of long to short vowels is sometimes as high as 1.5 to 1. In a sample of 38 words recorded in isolation using WinCecil acoustic phonetic software, short vowels in main syllables lasted roughly 100 milliseconds, while long vowels lasted roughly 150. Some minimal pairs are shown in Table 19.

phonetic effects on vowels (cf. Gregerson 1976 and Huffman 1976).

Vowel	Example	Gloss
ɔ:	pa.lɔ:ŋ	'to set adrift'
ɔ	pa.lɔŋ	'to spit out'
i:	pi:h	'a kind of poison'
i	pih	'to fill holes'
a:	pa:h	'spacious'
a	pah	'to slap'

Table 19: Minimal pairs of Pacoh long and short vowels

The [±RTR] difference is heard only in diphthongs and mid-height vowels, as seen in Table 17. A few minimal pairs are provided in Table 20.

Vowel	Example	Gloss
o	koh	that/there
ɔ	kɔh	mountain
e	ce:t	pen
ɛ	cɛt	die
uə	puəh	make traps
ʉə	puəh	white

Table 20: Minimal pairs of Pacoh tense and lax vowels

In all cases, the phonemic workload in terms of minimal distinctions for these two class distinctions is small, but they are nonetheless phonemically distinctive.

2.3.3.2 [+RTR] Vowels

RTR stands for 'retracted tongue root'. When the tongue root is retracted, the phonetic consequence in Pacoh is a raspy sound in those vowels. What is generally called 'register' in studies of Mon-Khmer languages takes on different phonetic qualities in different Mon-Khmer languages. Matisoff (1973) and Gregerson (1976) provided general characteristics of languages with register phenomena. Gregerson noted the difference between clear and breathy vowels. Matisoff described the 'raspiness' of the second register vowels in some languages.

Both of these characteristics—breathiness and raspiness—can be used to describe the difference between what R. Watson (1964) described as a tense-lax distinction. Pacoh [+RTR] vowels have a slight breathy and raspy quality. In Pacoh, the [+RTR] vowels—/e/, /ə/, and /o/ in both long and short forms—only occur in the main syllables, never in the presyllables. In general, Mon-Khmer register distinctions occur in the main syllables of words, the presyllables being much more restricted and phonetically reduced (schwa or just a limited number of vowels).

2.3.3.3 Diphthongs

Diphthongs are all inherently long vowels in Pacoh since they can occur in both open single and main syllables.

Diphthong	Example	Gloss
iə	--	--
	viək	'matters'
	?m.piən	'top'
iə	kiə	'to saw'
	triəŋ	'school'
	ka.niə	'a saw'
uə	ʃuə	'to search'
	kruəŋ	'earth'
	kər.nuət	'necklace'
iə	ʃiə	'a little more???'
	ʃiəŋ	'wind'
	ku.tiək	'earth'
iə	--	--
	bjəj'	'fish'
	?a.djəʃ	'monkey'
uə	ʃuə	'to call'
	pʰuən	'four'
	--	--

Table 21: Distribution of Pacoh diphthongs

Phonetically, they are pronounced about as long as long vowels, lasting about 15 milliseconds more than other long vowels (as discussed in subsection 2.3.3.1). The final off-glides are transcribed as schwa, though the phonetic realization of these off-glides depends on the position of the diphthong peak, as discussed in section 2.3.4.1. The three basic diphthongs are split into two classes by the feature [\pm RTR].

2.3.4 Allophonic Variation

Allophony refers to variation in the phonetic realization of phonemes, generally under specific phonetic conditions. This subsection deals with a few regular pattern of allophonic variation.

2.3.4.1 Diphthongs and Phonetic Realizations

The diphthongs as described by both R. Watson (1964:137) and ND&P (1986:24) have central off-glides. There are differences between the phonological representations and the phonetic realizations of these diphthongs, namely that the off-glides tend to agree in terms of degree of advancement or height. Table 22 shows both the phonemic and phonetic transcriptions of the diphthongs.

Diphthong	Phonemic	Phonetic	Gloss
iə (iɛ)	?m.piən	?m.piɛn	'top'
iə	kiə	kiə	'to saw'
uə	ʃuə	ʃuə	'to search'
iə (ia)	ʃiəŋ	ʃɛaŋ	'wind'
iə (ia)	?a.djəʃ	?a.dyaʃʃ	'monkey'
uə (ua)	jʉə	jɔa	'to call'

Table 22: Pacoh diphthongs and phonetic realizations

Though these vowels must be viewed as single phonemic segments (as discussed in Section 2.3.4.1), the peaks of diphthongs do govern endpoints of off-glides. [$+$ RTR]

vowels, due to constriction of the pharynx, have off-glides that are phonetically lowered from [ə] to [a].

The fronting of [ə] to [ɛ] in /iə/ is a kind of palatalization caused by the [i] diphthong peak.

2.3.4.2 *Final Consonant Rounding*

In Pacoh, there is a tendency to round /ŋ/ and /k/, becoming [ŋ^w] and [k^w], after the [-RTR] back round vowels /o/ and /u/.²¹ This can be viewed as the effect of the spreading of the feature [+round], as stated in the following optional rule.

Final consonant rounding

C	→	C	/	V	___#
+velar		+back		+back	
		+round		+round	
				-RTR	

So for example, Pacoh [duŋ] ‘house’ can be realized phonetically as [duŋ^w]. The roundness of the vowels induces labialization of the consonants. However, the process is not consistent. This assimilation occurred in the speech of different speakers at different times during my fieldwork. It varied according to rate and clarity of speech. A complete shift to [m] is not acceptable.

2.3.4.3 *Final Palatal /j/ and Off-Glide Epenthesis*

The voiceless palatal fricative /ç/ in coda position is preceded by a palatal off-glide after vowels, resulting in a phonetically complex segment. In the Viet and Watson scripts, this sound is represented as ‘ih’.

²¹ The [+RTR] vowels do not cause the same change. The reason for this is not clear.

<u>Gloss</u>	<u>Alves</u>	<u>Phonetic</u>	<u>Watson</u>
'monkey'	ʔa.djəʃ	ʔa.dyaʃʃ	addaih
'root'	rjəʃ	rɛaʃʃ	reaih
'firewood'	ʔu:ʃ	ʔu:ʃʃ	uih

This pattern can be described using a rule, which states that non-syllabic [j] occurs after any vowel when followed by [ʃ].

$$\emptyset \rightarrow [j] \quad / \quad \text{V} \quad _ \quad [ʃ]$$

The phonetic realizations of /ʃ/ include [ʃ], [jʰ], and [ɹ], the latter two resulting from a weakening of the /ʃ/ closure.

2.3.4.4 *Word-Initial Fortition*

Pacoh has two instances of word-initial fortition: spirantization and epenthesis. The first case is the fricativization of /w/ to [v] word-initially, and the other case is the insertion of phonemically non-distinctive glottal stops before nasal presyllables. In Pacoh, [w] and [v] occur in complementary distribution, [w] in word-final position (never [v]), and [v], word-initially (rarely [w]).

<u>Form</u>	<u>Gloss</u>
vi:/wi:	'to have'
vit/wit	'to toss away'
tiəw	'spice'
ʔa.ciəw	'knife'

However, in the initial position, [v] is the dominant form in Pacoh speech, and is the symbol used to represent the sound in Watson and Viet scripts. However, phonetic variation of the initial /v/ and /w/ did occur, suggesting that these are allophones of the same phoneme. The view taken here is that /w/ is the base phoneme, and is realized as [w] word-finally, though with alternation with [v] initially. The phonetic realization of

/w/ as [v] in the majority of cases is the result of a process of word-initial labial fortition. In the sonority hierarchy, [w] is more sonorant than [v]. Syllables tend to be less sonorant at the edges, particularly word-initially.

The other case of fortition is the requirement of a non-distinctive glottal stop before sonorant (nasal or liquid) presyllables. When nasals and liquids occur as presyllables, they always have a glottal stop, which can serve to prevent incorrect syllabification (see section 2.3.1.2 on glottal stops). Nasals are consonants, but they are sonorants as well, thus the non-sonorant glottal stop maximizes the syllable shape. The insertion of a glottal stop, as opposed to any other non-sonorant stop, is natural since it is a minimally distinctive and minimally sonorant consonant.

2.4 SYLLABLE AND WORD STRUCTURE

In this subsection, Pacoh syllable and word structure is characterized in terms of prosody and segmental phonotactic constraints. Before starting, two terms require definitions: ‘word’ and ‘prosody’. The phonological definition of ‘word’ differs from the syntactic one. Whereas the syntactic ‘word’ may include phonetic sequences of virtually any length (as long as it represents a single syntactic unit that lacks internal structure, see section 3.2.1), the phonological ‘word’ refers to an utterance having a single main stress and either one or two syllables (see section 2.2 for examples). In Pacoh, phonological words have a minimum segmental sequence of CV: or CVC and a maximum of CVC.CCV:C (more details on the range of syllable shapes are included in subsection 2.4.1 and discussion on phonotactic constraints in subsection 2.4.3).

The study of ‘prosody’ deals with sounds as they are organized into higher temporal phonological units. Prosody links segmental phonological material with the combination of meter, stress, and timing in utterances ranging from moras to phonological phrases (Hayes 1995). Each of these relationships is shown in Figure 2.

Figure 2: Requirements of prosodic levels

(a) Mora	(b) Syllable	(c) Word	(d) Phrase
μ or μ	σ or σ̇	ω	φ
C	μ μ μ	σ	ω

Prosody has been considered a multi-leveled phenomenon, as dealt with in the Prosodic Hierarchy Hypothesis (see figure 1 in section 2.2). A phonological phrase bears a single primary stress and may consist of one or more phonological words. A phonological word in Pacoh, being no more than two syllables, is always equivalent to a foot, and so words and feet are coextensive. Pacoh has trochaic mora feet, and a single unfooted mora is allowed on the left. A phonological word in Pacoh may have one or two syllables.²² A syllable in Pacoh consists of one or two moras, depending on the stress; stressed syllables are bimoraic, and unstressed syllables are monomoraic. Though vowels generally satisfy moraic weight requirements, consonants can too.

An advantage to recognizing these different phonological levels is being able to differentiate what are generally called ‘bound’ and ‘free morphemes’.²³ In Figure 3, (a)

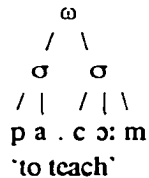
²² Evidence for this limit of two syllables per phonological word comes from word-formation processes that reduce four-syllable input forms to two, as discussed in section 2.5.4.2.

²³ The terms ‘morpheme’ and ‘affix’ are used here for convenience. The approach used in this grammar for the study of word-formation, as discussed in sections 2.3.2 and 11.1, does not recognize ‘morphemes’ as abstract distinct minimal units, and terms such as ‘affix’ and ‘morph’ are not used. Instead, syntactic words can be formed through analogics involving overall word shapes.

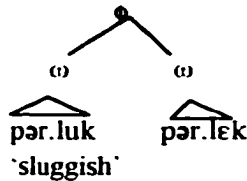
shows a phonological word. The word-initial substring [pa... in (a) is not derivationally related to single words, and thus is traditionally categorized as a ‘bound morpheme’. The view taken here is simply that [pa... is a substring that constitutes a syllable as part of a phonological word. The so-called ‘bound morphemes’ are simply phonologically complex substrings that result in words that are phonological phrases. In (c), the single syntactic word *?a. ?i:- ?a.am* ‘parents’ contains phonological material from the words *?a. ?i:* ‘mother’ and *?a. ?am* ‘father’ (see section 11.2.1.4 for discussion on so-called lexical compounds).

Figure 3: Word-dominated and phrase-dominated substrings

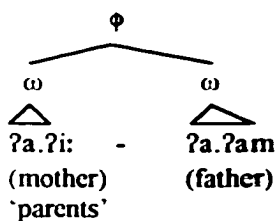
(a) Word-dominated



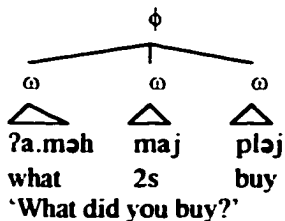
(b) Phrase-dominated reduplication



(c) Phrase-dominated compound



(d) Phrase-dominated sentence



Following subsections summarize Pacoh syllable and word structure, discuss various prosodic and phonotactic constraints, and then demonstrate how those constraints interact in Pacoh word formation strategies. Section 2.4.5 briefly discusses some phrasal intonational patterns in Pacoh.

2.4.1 Overall Syllable and Word Structure

The Pacoh phonological word consists of an obligatory main syllable and an optional presyllable. All syllables must have sonorant nuclei and must have initial consonants (which can also be glottal stops²⁴). Main syllables and presyllables differ in several ways, as discussed below.

Pacoh main syllables can have both single consonants and consonant clusters syllable-initially. The second segment of a cluster is either [l] or [r] in native Pacoh vocabulary, but some glides ([j] and [w]) occur in that position in some Vietnamese loans (see section 2.5). These main syllables must bear stress and must have two moras. The mora weight requirement can be met either by long vowels or a vowel with a final consonant. The full range of main syllable shapes is shown in Table 23. ‘C’ represents consonants, ‘L’ refers to liquids, and the colon ‘:’ marks long vowels ‘V’.

GLOSS	FORM	SEQUENCE
‘to cat’	ca:	CV:
‘eye’	mat	CVC
‘time of day’	pe:l	CV:C
‘head’	plo:	CLV:
‘silver’	praʔ	CLVC
‘mynah bird’	tra:w	CLV:C

Table 23: Main syllable shapes in Pacoh

Main syllables can be pronounced (1) alone, (2) with a secondary presyllable, or (3) (in reduplicant words) with other main syllables.

²⁴ In previously published orthographies, glottal stops were not used in word-initial position, suggesting that those words were vowel-initial words, whereas it is posited here that these words have initial glottal stops (see section 2.4.1.2, The Glottal Stop).

Pacoh presyllables differ in shape, weight, stress, as well as distribution. All Pacoh presyllables have at least an initial consonant and sonorant peak. However, consonant clusters are not allowed and the vowels are always short. These syllables are never stressed and have only one mora. One notable aspect of Pacoh presyllables is that nasals or liquids can satisfy the requirement for a sonorant peak.

GLOSS	FORM	SEQUENCE
'to smile'	ka.caŋ	CV-
'to exchange'	tər.piən	C ₁ əC ₂ -
'one unit'	?l.lam	?S-

Table 24: Presyllable shapes in Pacoh

GLOSS	FORM	SEQUENCE
'where'	tu.mə:	CV.CV:
'field'	pi.daj	CV.CVC
'many (plural)'	pa.pi:t	CV.CV:C
'owl'	ka.tru:	CV.CLV:
'to spill accidentally'	ta.trəh	CV.CLVC
'dry (plural)'	pa.pre:ŋ	CV.CLV:C
'to search for each other'	tər.fuə	CəS.CV:
'wife'	kəm.paj	CəS.CVC
'to dance'	kəŋ.co:l	CəS.CV:C
'to keep'	təm.pruh	CəS.CLVC
'a bought (of rain)'	kən.trə:ʔ	CəS.CLV:C
'of his'	?n.də:	?S.CV:
'that'	?ŋ.koh	?S.CVC
'materials'	?m.ma:r	?S.CV:C
'string'	?n.traf	?S.CLVC
'chicken'	?n.truəj	?S.CLV:C

Table 25: Bisyllabic range in Pacoh

Vowels in Pacoh presyllables are restricted to /i/, /a/, and /u/ in open syllables, but /ə/ in presyllables with codas, which are always liquids or nasals. Table 24 shows examples of the three possible presyllable shapes in Pacoh. 'S' refers to sonorant consonant nuclei (including nasals and liquids) which, in Pacoh, are always preceded by a phonemically

non-distinctive glottal stop. In Table 24, V is /i/, /a/, or /u/, C₁ may be any consonant, C₂ is /ə/, and S is any nasal or liquid. All recorded possible combinations of main and presyllables are shown in Table 25.²⁵ The next section deals with Pacoh prosody.

2.4.2 Prosodic Constraints

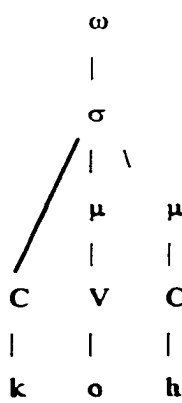
Following the prosodic hierarchy, phonological words are made up of syllables, and syllables of moras. Both syllables and moras have segmental requirements. Some sample representations are shown in S3. Moras require segmental material: consonants and vowels. Onsets do not play a part in mora requirements. Instead, they are part of syllabic requirements (as discussed below) and are connected directly to the syllable nodes in the representations. The following two subsections describe the general principles of Pacoh prosody.

S 3: Three representations of Pacoh words

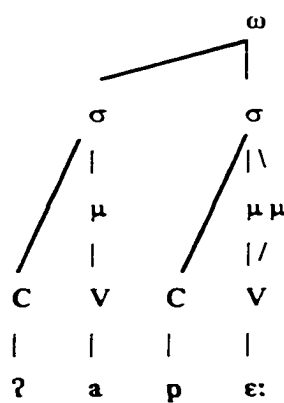
(a) 'three'



(b) 'there'



(c) 'they (three or more)'



²⁵ The only possible shape for which no example was found is CəS.CLV:.

2.4.2.1 Phonological Words

This section discusses the prosodic structure of the phonological word in Pacoh and an example of how that structure conditions the output of a word-formation pattern. The phonological word in Pacoh has one main stress, which is always final. Pacoh phonological words have at most two syllables. Thus, there are only two types of phonological words in Pacoh: stressed monosyllabic and ultimate-stressed bisyllabic words. Stressed syllables are pronounced longer and with a higher loudness.

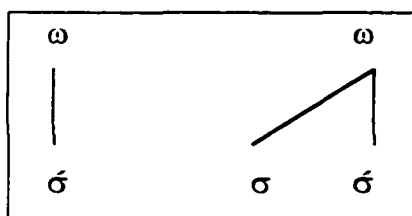


Figure 4: Phonological word in Pacoh

The stress patterns required by the phonological word do exert phonological pressure on the phonemes. Cases of WFSs involving the use of word-derived forms to form new phonologically complex words show the phonological pressure towards a bisyllabic-maximum for the Pacoh phonological word. For example, Pacoh WFS-10: (see section 11.2.1.5 for more explanation and examples) uses phonetic material from the word [ku.mɔ:] ‘year’ and a numeral (from one to ten) as the phonological input. Thus, [ku.mɔ:] ‘year’ and [ʃo:ŋ] ‘five’ form [ku.mɔ:ŋ], a modifying dependent of the noun [ku.mɔ:], creating [ku.mɔ:-ku.mɔ:ŋ], meaning ‘five years from now’.

2.4.2.2 Syllables, Moras, and Segments

This section deals with syllables, moras, and their government over segments in prosodic units. Every syllable in Pacoh requires a consonant onset and a sonorant peak. The sonorant peak can be a vowel in any syllable, but it can be nasal or liquid in presyllables. The inventory of Pacoh syllables is as follows.

<u>Presyllable</u>	<u>Main Syllable</u>
CV	CV:
CVS	CVC
CS	CV:C

The vowels /i/, /a/, or /u/ appear in open presyllables, but only schwa appears in presyllables with final consonants. The symbol 'S' indicates only nasals and liquids and can occur in those positions, and the preceding consonant in those cases is always a glottal stop. Other constraints are as discussed in section 2.4.1.

Syllables require moras, abstract units of length. All stressed syllables in Pacoh have a two-mora minimum. Thus, single syllable words and the second syllable of bisyllabic words must have two moras. Unstressed syllables take only one mora.

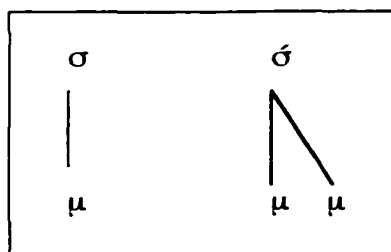


Figure 5: Stressed and unstressed syllables in Pacoh

Single moras correspond either to short vowels (in either presyllables or main syllables) or presyllables with nasal nuclei. Pairs of moras in the same syllables correspond to long vowels, diphthongs, or combinations of short vowels and consonant codas. Consonant

codas of syllables with long vowels or diphthongs are not assigned moraic weight. A consequence of these constraints is that presyllables, which are always unstressed, always have just a single mora whether or not the syllable is closed.

σ	σ	$\acute{\sigma}$	$\acute{\sigma}$
		\	\
μ	μ	$\mu \mu$	$\mu \mu$
		/	
V	S	V:	V C

Figure 6: Minimal syllable shapes in Pacoh

Main syllables, which always bear stress, always take two moras. Thus, these syllables are required to have either a long vowel or a vowel and a consonant. Each mora must have an associated segment to satisfy its weight requirement. VC combinations contain either long or short vowels, but in cases of long vowels, the long vowel contributes to the weight of both moras. At most, however, a syllable can contain two moras.

2.4.3 Phonotactic Constraints

This section deals with the attested distribution of consonants and vowels. R. Watson (1964) characterized Pacoh phonotactics in terms of the presyllable and main syllable. The basic templates that Pacoh words can have were discussed in section 2.4.1. Briefly, the syllables of Pacoh words consist of a CV(C) structure, with some variants. However, as was discussed, the main syllable and presyllables differ in a few respects.

Presyllable

$C_1 V_1 C_2$

Main syllable

$C_3 C_4 V_2 C_5$

C_1 can consist of any Pacoh consonants except for post-glottalized glides and aspirated stops. C_2 consists only of sonorants, including the nasals and liquids (but not the glides).

C_3 can be any consonant from the Pacoh vowel inventory except for post-glottalized glides. However, the main syllable onset position is restricted to the voiceless stops /p/, /t/, and /k/ when preceding the liquids /r/ or /l/. C_4 consists of the liquids /r/ and /l/ in consonant clusters. C_5 consists of all consonants except for voiced or aspirated stops. Consonants in this position are optional after long vowels, but obligatory after short vowels. V_1 includes only the vowels /i/, /a/, or /u/ in open presyllables, but only schwa in closed syllables. All vowels in this position are short and there is no [±RTR] distinction here. V_2 can be any vowel from the Pacoh vowel inventory.

Clusters in Pacoh follow the sonority hierarchy, increasing in sonority towards the peak of syllables. Though there are no glides in the second consonant position in clusters in native vocabulary, there are such forms in Vietnamese loans (section 2.5), which still follow the sonority constraint (in Pacoh, from least to most sonorant: obstruents, nasals, liquids, glides, and vowels). This, however, demonstrates that Pacoh does not have a constraint against glides in that position.

The lack of final voiced stops follows the tendency for codas to lack contrastiveness. The occurrence of post-glottalized stops makes sense considering the sonority hierarchy constraint. These complex segments move from more to less sonorant, which is acceptable at syllable codas but not syllable onsets.

The Pacoh presyllable, which is always unstressed, shows pressure towards fewer feature distinctions. There are no [+RTR] vowels in this position, and the vowels in that position have only a three-way contrast—/i/, /a/, and /u/—being at the extremes of the

Pacoh vowel phoneme inventory. In closed presyllables, there are no vowel contrasts; only schwa occurs.

The presyllable shows a general tendency to rely on the main syllable in both segmental and prosodic features. The final nasals of presyllables are homorganic, matching the place of articulation of initial consonant of the main syllable (see section 2.4.4.2). Also, in initial-C reduplication processes, the presyllable relies on segmental material from the main syllable, copying the initial consonant.

2.4.4 Reduplication and Presyllables

This section deals with phonological changes in bisyllabic and reduplicant polysyllabic words. There are several types of reduplication in Pacoh, generally involving copying and alternating segmental material within the same reduplicant. Pacoh presyllables exhibit phonological reduction, such as nasal assimilation and vowel reduction in closed syllables.

2.4.4.1 Reduplication and Phonological Constraints

Reduplication is a prosodically-oriented word-formation strategy, which in Pacoh consists of four types, including template (full and alternating), presyllabic, partial, and template-plus-presyllable reduplication (See section 11.2.4 for discussion on the meanings of reduplicants). In Pacoh, the two most commonly occurring types are template reduplication and initial-C reduplication. In template reduplication, the prosodic template of an entire phonological word is copied. Some segmental material is copied as well, but a vowel, consonant, or the syllable rhyme may be altered. In template-plus-presyllable reduplication, a full syllable is copied, separated by syllables such as [ʔi] or

[ʔm], or an onset may be copied to the onset of an added presyllable. In both cases, either mono- or bisyllabic words provide a base for the reduplication.

Category	Form	Gloss
<i>Template</i>	vəŋ-və:ŋ	'clumsy'
	tuəp-juəp	'ruffled (of hair)'
	ʒe:l-jo:l	'to drift (of leaves)'
	tə:p-hə:p	'a big empty place'
	ʒi:l-ʒuəʔ	'to imitate'
	ki:l-ku:l	'fragrant (of tree sap)'
	ʃeŋ-ʃeɪ	'to cackle'
<i>Template-plus-Presyllable</i>	pə.pi:t	'big (of a group of things)'
	vɪəl-ʔi.vɪəl	'full of twists and bends'
	taʔ-ʔm.biʔ-ʔi.biʔ	'to pretend to sleep'
<i>Clause-Incorporation</i>	ŋa:j-taʔ-pruəʔ-taʔ-təm.paʔ they do work do work	'They're working.'

Table 26: Examples of Pacoh reduplication

S4 provides examples of reduplication. S4a is the base from which S4b and S4c are derived. S4b shows initial-C reduplication, in which the initial consonant is copied, the presyllable [a] is set as part of the word-initial substring, and the presyllable has no final consonant.

S 4: Examples of base and reduplicants in Pacoh

<u>Base</u>	<u>Presyllabic Reduplicant</u>	<u>Template Reduplicant</u>
(a) 'big'	(b) 'big (of a group of things)'	(c) 'biggish'
ϕ | ω | σ / \\ CVC | | | p i: t	ϕ | ω / | σ σ / | / \\ CVCVC | | | | | p a p i: t	ϕ / \\ ω ω | | σ σ / | / \\ CVC CVC | | | | | p i: t p e: t

S4c shows prosodic template reduplication, in which the syllable CVC template and consonant material is copied, though the vowel phoneme alternates. The 'word'

(really a prosodic phrase) in S4c consists of two phonological words based on the criteria that (a) both parts are equally stressed and (b) the total phonological unit can participate in clause-incorporative word formation (see section 11.3). The prevalent type of reduplication in Pacoh shown in S4c is called ‘alternating reduplication’ in this grammar since the template is copied though the process always involves alternation of some segmental material, but never all.

Template-plus-presyllable reduplication involves both processes just discussed. Partial reduplication is named as such since it only involves copying completely (with no alternation of the segmental material) one syllable of bisyllabic forms, resulting in an extra following syllable. Each type of reduplication is discussed in the subclass-
incorporatives below.

2.4.4.1.1 Template Reduplication

In prosodic template reduplication, the reduplicant is a segmentally unspecified word filled in by segmental material from the base, as listed in Table 27 and demonstrated with examples from Pacoh. Huffman (1970:298) described the same types of alternations in Khmer reduplication. Huffman used the terms ‘ablauted’, referring to alternations of vowels, ‘rhyming’, referring to alternations of initial consonants, ‘alliterative’, referring to alternations of rhymes, and ‘repetitive’, referring to the copying of all segmental material. All of those reduplication patterns are listed in the Table. In addition to those types in Khmer, Pacoh also has reduplicants that copy the first CV of a syllable and alternate the coda, called simply onset-vowel reduplication. All of the

consonants and vowels have subscript numerals to differentiate between changed and unchanged segments.

Category	Template	Examples
<i>Repetitive</i> (No alternation)	$C_1 V_1 C_2 - C_1 V_1 C_2$	$f\underset{1}{\partial}:-f\underset{2}{\partial}$: 'pleasant'
<i>Rhyming</i> (Onset alternation)	$C_1 V_1 C_2 - C_3 V_1 C_2$	$t\underset{1}{\partial}k-v\underset{2}{\partial}k$ 'endless amount'
<i>Ablauted</i> (Vowel alternation)	$C_1 V_1 C_2 - C_1 V_2 C_2$	$pu:c-pa:c$ 'flutter'
<i>Alliterative</i> (rhyme alternation)	$C_1 V_1 C_2 - C_1 V_2 C_3$	$k^h a\eta-k^h \epsilon r$ 'push rice into mouth continuously'
<i>Onset-Vowel</i> (coda alternation)	$C_1 V_1 C_2 - C_1 V_1 C_3$	$kr\underset{1}{\partial}:\eta-kr\underset{2}{\partial}:w$ 'property'

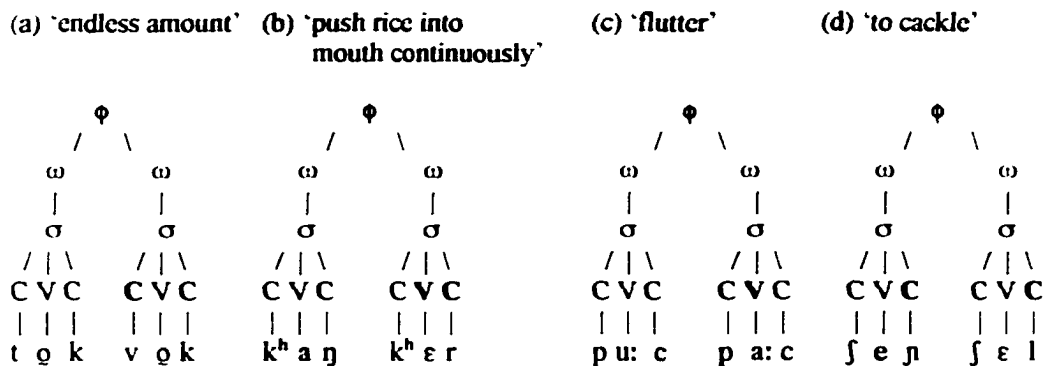
Table 27: Types of alternation in alternating reduplication

The subscripts of changed segments are underlined. This first pattern shows non-alternating/total segmental reduplication, the least common type of reduplication in Pacoh. The other patterns, all of which are instances of 'alternating reduplication', show segmental differences between the base and the reduplicant portion. Any of the single segments or the rhyme of the template may alternate. Thus, template reduplication may result in full reduplication with no changes to the segments; however, in general, template reduplication in Pacoh alternates, with some segments being copied and others alternated. For this reason, that kind of reduplication is called 'alternating reduplication'. Regarding the segmental alternations, they always correspond based on the template of reduplicant base, (i.e., a consonant in the base corresponds to a consonant in the reduplicant portion, and likewise if a vowel is involved). There are currently no

identifiable patterns of alternations involving phonological category, such as voicing or place of articulation (e.g., a nasal in the base can have a corresponding non-nasal voiceless stop in the reduplicant).

Figure 7 shows examples of each type of reduplication, in which the consonant, vowel, or combination that alternates is in bold print. There are no documented alternations of a combination of vowel and initial consonant, nor do both consonants alternate while the vowel is copied.

Figure 7: Four types of segmental alternation



2.4.4.1.2 Initial-C Reduplication

Initial-C reduplication involves the copying of the initial consonant of the base and inserting [a]. The only examples of these presyllables are with monosyllabic bases, not polysyllabic forms. For example, Pacoh [pi:t] 'big' is the phonological base for [pa. pi:t] 'big (in regard to plural 'subjects')', while [kɛt] 'small' is the base for [ka.kɛt] 'small (in regard to plural 'subjects')'. The basic WFS prosodic template for these presyllabic reduplicants is shown in Figure 8.

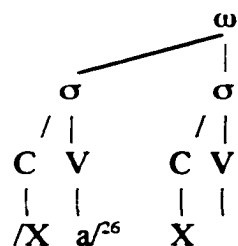


Figure 8: Initial-C reduplication template

The presyllable has an unspecified onset, which is filled in by material from the base, and the vowel [a].

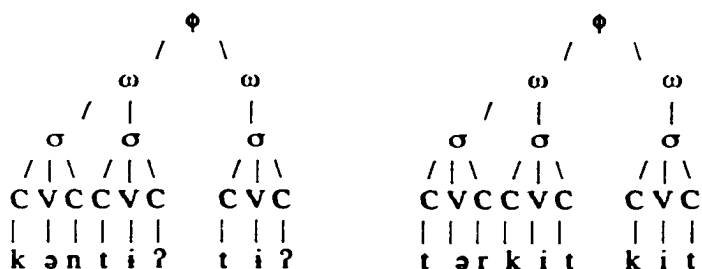
2.4.4.1.3 Partial Reduplication

Partial reduplication is reduplication in which only part of the base is copied, in this case, the main syllable of a bisyllabic word, resulting in an additional syllable following the base. The reduplicated syllable copies the main syllable of the base exactly with no segmental alternations. In the following two examples, the base is the first phonological word. In each case, the main syllable of the bisyllabic words is copied completely with no alternating segments.

S 5: Examples of partial reduplication in Pacoh

(a) 'Sometimes'

(b) 'Be close to'



²⁶ The representation of /Ca/ as a syllable is not an indication of morphological boundaries since the view taken in this grammar is that lexical items have no internal structure or boundaries. Instead, this diagram, and ones like it, simply represent a phonological hierarchical view, irrespective of the semantic and syntactic features that words with these phonological strings may have.

The basic phonological template is as shown in Figure 9.

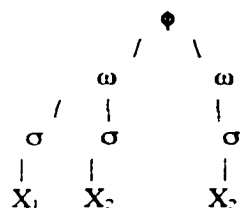


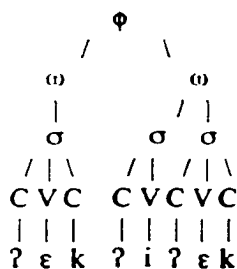
Figure 9: Partial reduplication template

2.4.4.1.4 Presyllabic and Template Reduplication

Pacoh has a type of full template reduplication with an additional non-reduplicative presyllable.

S 6: Presyllabic and template reduplication

‘Raucous laughter’



The basic template for these syntactic words is shown in Figure 10.

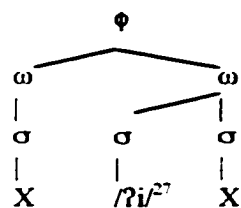


Figure 10: Template-plus-presyllable reduplication

²⁷ See the footnote in Figure 7 on the view against considering this phonological material as representing morphological segments.

2.4.4.2 Nasal Assimilation in Presyllables

Pacoh shows a consistent pattern of matching place of articulation between the nasals of presyllables (either presyllable coda nasals or presyllable nasal nuclei) and the onsets of following main syllables.

<u>Gloss</u>	<u>Form</u>	<u>Gloss</u>	<u>Form</u>
'which'	?m.mə:	'new'	təm.me:
'this'	?n.tih	'star'	pən.tɔ:r
'louse'	?ŋ.çɛ:	'to dance'	kəŋ.co:l
'that'	?ŋ.koh	'to change'	pəŋ.kə:ŋ

This pattern can be stated as follows.

[+nasal] → [+nasal] / ___ C ó
[αplace]

Another way of viewing this phenomenon is that nasals in this position are unable to maintain their own point of articulation. In all other positions, Pacoh nasals permit distinctive points of articulation phonologically unrelated to other segments, as shown in Table 28.

Position	Form	Gloss
<i>main syllable, initial</i>	mat	'eye'
	nam	'if'
	ŋoŋ	'to look'
	ŋɛ?	'all'
<i>main syllable, final</i>	cə:m	'to know'
	ɟɔ:n	'to give'
	di:ŋ	'long time'
	jo:ŋ	'far'
<i>presyllable, initial</i>	ma.mə:jʔ	'to hunt'
	ŋa.ŋɛʔ-ŋɛʔ	'to contort one's neck'
	ŋa.:ŋɛ:l	'prompt'

Table 28: Unconditioned Pacoh nasals

The initials of presyllables are copied from initials of the main syllables as a result of word-formation strategies. No constraints have been shown, and any reduplicated consonants can occur in this position without phonological constraints.

Padgett (forthcoming) posits that the primary factor in similar cases of nasal assimilation is whether or not the nasal is in a position of phonetic release. Nasals are released when not followed by consonants within prosodic words. The lack of release by nasals results in assimilation in point of articulation, generally according to following consonants. The notion of licensing then comes to be associated with this position of release, in which case, unreleased nasals are unlicensed for point of articulation. In Pacoh, the coda position of unstressed presyllables is a very weak position, and is thus more liable to be affected by constraints than positions in the main syllable or the onset of the presyllable.

2.4.4.3 *Vowel Reduction in Presyllables*

Closed presyllables in Pacoh have only the vowel [ə] in that position. One possibility is that any vowel in this position becomes schwa.

V → [ə] / #C_C(ó)#

Another way of stating this is that any vowel in this position becomes unmarked for all vowel features.

V → V
 [-high]
 [-low]
 [-front]
 [-back]

Another potentially valid hypothesis is that there is currently (not necessarily historically) no vowel in presyllables with final vowels, though phonetically, there is clearly a vowel. Presyllables that have nasal or liquid sonorant peaks lack a phonetic vowel.

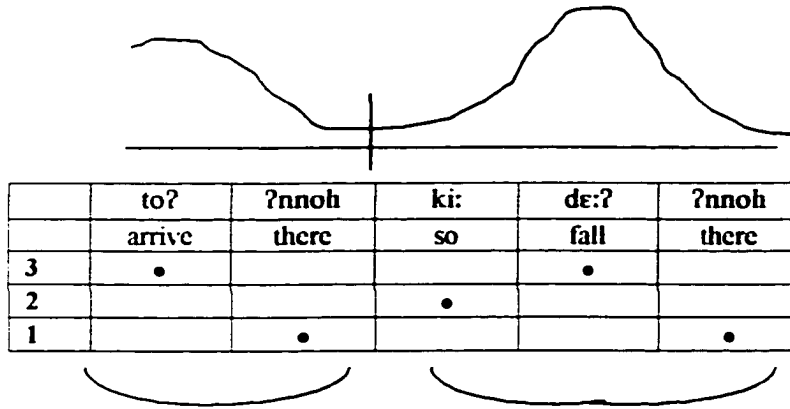
2.4.5 Intonational Units

Recorded data of Pacoh native-speaker speech is limited, minimizing what can be said in this section about intonational units. An intonational unit is characterized by having one primary phrasal stress, beyond the lexical stress of individual words. Attributes of intonation include pitch, contour, loudness, and pauses, among other related phenomena.

Pacoh is primarily a mora-timed language. The second syllables of bisyllabic words always have two moras and tend to be more phonetically prominent. As a result, bisyllabic words can in part condition phrasal intonation since stressed syllables tend to create intonational peaks in phonological phrases. However, the phonological shape of words may not contribute as much to the intonation as the difference between content and function words. Content words tend to have more intonational prominence than grammatically functional words. Consider S7, which contains two intonational phrases to form a sentence. In each phrase, the intonation peak falls on a verb (content words), while the grammatical vocabulary (function words) tends to be low.

S 7: Sample Pacoh intonational unit

‘When it reaches here, it falls down here.’

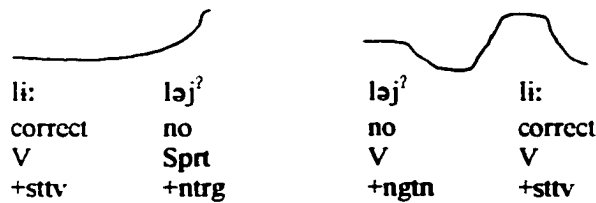


In general, non-interrogative statements have falling pitches at the ends of sentences, as in S7 and S8b, while interrogative statements rise, as in S8a. Despite the grammatical function of the interrogative sentence particle, the question intonation requires a rise in pitch, though the loudness of both words in the sentences is about equal.

S 8: Interrogative versus statement intonation

(a) ‘Is that right?’

(b) ‘No, it’s not.’



2.5 LOANWORD PHONOLOGY

Pacoh is experiencing increasingly intense language contact with Vietnamese. The most immediate effect of this is the borrowing of Vietnamese vocabulary. The phonologies of Pacoh and Vietnamese differ in a number of ways, and in borrowing Vietnamese words, Pacoh has either adopted the Vietnamese words without phonological

changes or it has changed Vietnamese loans to fit Pacoh phonological constraints. In both cases, the loanword phonology reveals something about the range of phonological constraints in Pacoh, including some that are not otherwise attested in native Pacoh vocabulary.

Vietnamese is a tonal language, meaning it has lexically distinctive prosodic pitch and contour. Pacoh is not tonal and has not developed tones as a result of borrowing Vietnamese vocabulary. However, some of the associated phonetic characteristics of Vietnamese tones, such as the glottalization that lasts the duration of the sonorant parts of Vietnamese syllables, are reflected in Pacoh phonology. In Table 29, the Vietnamese and Pacoh forms are compared. Vietnamese tones²⁸, based on Northern standard Vietnamese, are indicated using the 5-point (5 being high and 1 low), Y. R. Chao tone-marking system. The underscore marks glottalized tones. Though Vietnamese only distinguishes two pairs of vowels by length (/a:/ and /æ/,²⁹ /ə:/ and /ə/), length is indicated for ease of comparison.

The borrowing of glottalized forms from Vietnamese has even lead to the creation of a post-glottalized nasal in Pacoh. Thus, although native Pacoh words contain only post-glottalized glides, other sonorants can be post-glottalized as well. In borrowed Vietnamese words with non-sonorant finals and glottalized tones, Pacoh does not add glottalization. Vietnamese words with non-glottalized tones are borrowed without tones and with no phonetic indication of lexically distinctive tone. The one apparent example

²⁸ For a description of these tones, see Thompson 1985.

²⁹ [æ], though differing in both length and vowel quality, is historically connected to [a:].

is the form for the city of Hué, though, in Central Vietnam, that particular tone is pronounced with glottalization. The Vietnamese loan *cūng* (phonetically [kuŋ^{31?}]) ‘also’ is pronounced [kuŋ[?]] in Pacoh, with a post-glottalized velar nasal [ŋ[?]].

Gloss	Vietnamese	Pacoh
‘often’	t ^h iəŋ ²¹ -t ^h iəŋ ²¹	t ^h iəŋ-t ^h iəŋ
‘also’	ku:ŋ ^{m35}	ku:ŋ [?]
‘must’	fa:j ³¹	fa:j [?]
‘to be’	la: ²¹	la:
‘artisan’	t ^h ə: ²²	t ^h ə:ʔ
‘evil’	ʔa:c ⁴⁵	ʔa:c
‘law’	fɛ:p ⁴⁵	fɛ:p
‘punish’	fa:t ²²	fa:t
‘study’	hɔ:k	hɔ:k
‘read’	dɔ:k	dɔ:k
‘method’	kac	kac
‘hour’	zə: ²¹ /jə: ²¹	jə: ²¹
‘Hué city’	hwe: ⁴⁵	hwe:ʔ

Table 29: Vietnamese loanwords in Pacoh

There are a few other details worth noting. First, though not part of native Pacoh vocabulary, Vietnamese /f/ is preserved in the single Vietnamese loanword *phải* ‘must’, which is realized in Pacoh as [fa:j[?]]. Second, no native Pacoh words have glides in consonant clusters, only liquids. However, the ability of Pacoh to borrow such clusters from Vietnamese without phonological changes (e.g., hwe:ʔ ‘Hué city’) suggests that the constraint on clusters is broader, that liquids and glides form a class of sonorants that can occur in the cluster-final position. Third, words having the diphthong /iə/ commonly come from Vietnamese, while very few native words have this sequence.

3. LEXICASE: DEPENDENCY GRAMMAR

Lexicase is a dependency grammar with X-bar influence that was first developed in the early 1970s by Stanley Starosta at the University of Hawai'i. Since that time, over a dozen dissertations and several dozen articles have been written using Lexicase.³⁰ In this chapter, the Lexicase framework is described in order to clarify the word-formation and syntactic analyses provided in this grammar.

3.1 BASIC ASSUMPTIONS

Lexicase is a monostratal dependency grammar that focuses on the relationships between words. Lexicase uses only one level of representation for sentences, and no transformations or movements are involved. Lexically distinctive features inherent in words determine the distributional properties of words and the kind of dependents they may take. The relationships between all words are binary, in a word-to-word fashion, though stemmas (Lexicase style 'trees') are not restricted to binary branching, and single regents having two or more dependents is normal. What part of speech and subcategory a lexical item belongs to and that word's case-related function are crucial in determining word order in syntactic units. Parts of speech and their subcategories are determined through the application of syntactic tests, allowing for explicit discussion of distributional properties of those words and the formation of phrases and sentences.

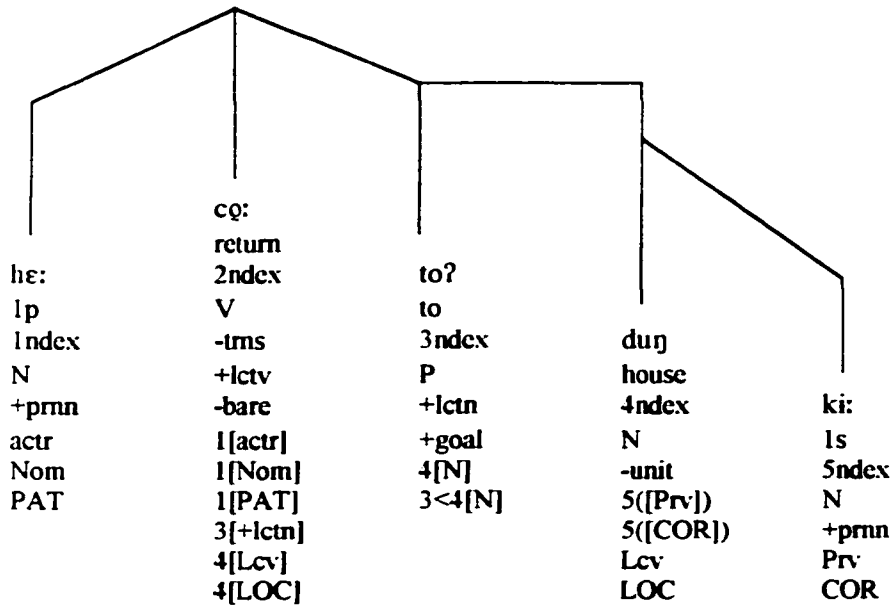
In lexical dependency relationships, there are lexical regents and lexical dependents. Lexical regents strictly control the distribution of their immediate

dependents, which may in turn be regents of other words. The consequence of this relationship is that while the regent may influence features of the dependent, the dependent cannot ‘look up’ to its regent. What ‘head’ is usually considered to be in mainstream syntactic works corresponds to what in this grammar is the highest regent in a syntactic constituent.

One key aspect of Lexicase formalization is the use of lexical features. Words may bear inherent features and may be interpreted by their regents as having certain features. All words belong to a part of speech. Different subcategories of the same part of speech are distinguished by numerous syntactic and sometimes semantic features.

S 9: Example of a Lexicase stemma

‘We went back to my house.’



³⁰ A useful resource is Starosta’s home web page, URL <http://www2.hawaii.edu/~stanley/>. It contains some downloadable forms of Starosta’s work, some Lexicase dissertations, and a bibliographic listing of Lexicase publications.

Features can be made accessible to other words in phrases through linking and chaining rules. Case forms and case relations are sometimes dependent on the inherent lexical features of verbs, adpositions, and nouns. S9 shows a sample Lexicase stemma. Downward branching lines mark endocentric relationships while horizontal lines mark exocentric constructions. Beneath each lexical item, features are indicated. Typically a word is given a rough gloss, followed by an index number (e.g., 1index, 2ndex, 3ndex, etc.), part of speech (e.g., N for noun, V for verb, etc.), a feature or features that indicate the word's part of speech subcategory, some indication of case-marking, and marking of linear ordering. Each of these aspects are discussed further in following subsections.

Rather than using multiple levels of representation connected through transformations, Lexicase differentiates between overall linear ordering in syntactic units and the specific syntactic structural relationships between the words. The contextual requirements (the 'context' being the syntactic unit) of words is formally indicated through those indices. Thus, while the ordering of the words is simply labeled with indices one to five, the preposition requires that its noun complement has a higher index, indicated by $3 < 4$. A well-formed clause is one in which all requirements are satisfied and no constraints violated.

In the Lexicase perspective, a word has three aspects: sound, meaning, and distribution. The consequence of this is that if two lexical forms differ in any of these respects, those forms represent different words. This is clear in regard to differences involving sound (e.g., 'sweat' versus 'perspire') and meaning (e.g., 'We beat₁ the eggs' versus 'We beat₂ the other team'). However, this is more difficult to see when relatively

small distributional differences are involved. One phonetic form can be shown to represent two words, even though they may belong to the same semantic scope and same part of speech. Consider the use of the phonological forms /hæv₁/ and /hæv₂/ in S10.

S 10: Example of homophonous and derivationally related words

- (a) 'I have₁ a baby.' (c) 'She's having a baby.'
 (b) 'She had a baby in her hands.' (d) 'She had a baby last month.'

All the verbs have 'baby' as complements, though the verbs differ semantically. While (a) and (b) express possession, (c) and (d) have to do with giving birth. (b) and (d) are in the past tense, while (a) and (c) are not. One important difference is that (a) does not have a derivationally related progressive tense form, and (b) has no corresponding simple present tense form. Selectional restrictions also influence the kinds of adjuncts the past tense form take. Exchanging the complements 'in her hands' and 'last month' in (b) and (d) would create semantically less tenable sentences (though admittedly not impossible). Based on these criteria, each sentence contains a different lexical item with distinctive lexical features, as in S11.

S 11: Lexical features of derivationally related words

(a) have	(b) had ₁	(c) having	(d) had ₂
V	V	V	V
-trns	-trns	-trns	-trns
+crsp	+crsp	+crsp	+crsp
-past	+past	-past	+past
-cntn	-cntn	+cntn	-cntn
+pssn	+pssn	+crtn	+crtn

All are intransitive correspondent verbs. These are considered intransitive, which is supported by the fact that they have no corresponding passive counterparts. Two are past

and two are non-past. Three are non-continuative. Finally, two are possessive and two indicate creation.

The use of lexical features has several advantages. Using features permits explicit presentation of information. Features and their associated distributional properties are explicit and thus more easily disproven, which in turn allows for further development of the theory and understanding of linguistic properties. The use of explicit lexical features allows for ease in comparison of languages for historical, typological, and second language acquisition studies, much like the use of phonological features. Parts of this grammar are the results of analyses using feature-based lexical tables that could be sorted and searched through for identifiable patterns.

3.2 PARTS OF SPEECH

Clearly defining parts of speech and their subcategories allows for clear analysis, description, and usefulness in other linguistic subfields (e.g., comparative linguistics and computational linguistics). In Lexicase, there are eight posited word classes, which all words must belong to: nouns, verbs, adpositions, adverbs, adjectives, determiners, conjunctions, and sentence particles. This section provides explanation of the definition of 'word' and then describes characteristics of parts of speech in the Lexicase perspective.

3.2.1 Definition of Syntactic Word

The definition of word in a Lexicase approach involves three aspects: sound, meaning, and syntactic distribution. Words can be differentiated by one or more of those aspects. In the following diagram, sets of words are contrasted in terms of their sounds,

meanings, and distributions. Homophonous words are differentiated by subscript numbers, as in 'eat₁' and 'eat₂'. Semantic (loosely indicated) and syntactic features are indicated beneath each lexical item.

<u>CATEGORY DIFFERENCE</u>	<u>FORM 1</u>	<u>FORM 2</u>
<i>Sound</i>	'cat' +feline N	'feline' +feline N
<i>Meaning</i>	'have ₁ ' +possess V. +crsp	'have ₂ ' +birth V. +crsp
<i>Distribution</i>	'cat ₁ ' +consume V. -trns	'cat ₂ ' +consume V. +trns
<i>Sound and Meaning</i>	'love' +love V. +trns	'hate' +hate V. +trns
<i>Sound and Distribution</i>	'fight' +conflict N	'war' +conflict V
<i>Meaning and Distribution</i>	'two' +number N. +nmrl	'too' +also Adv

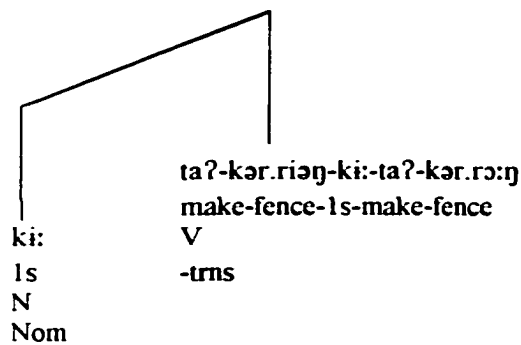
Table 30: Differences in sound, meaning, and distribution

Though 'cats' and 'feline' are both nouns and share semantic features, they are two different words. The homophonous set for /hæv/ was discussed in section 3.1. The syntactic difference between 'eat₁' and 'eat₂' can be seen by their function in answering questions. 'What will you do then?' can be answered by 'I'll eat₁' and 'I'll eat₂ a sandwich', but 'What do you want to eat?' can only be answered by 'I want to eat₂ a sandwich'.

The syntactic definition of word here differs from the phonological definition (see section 2.4), in that, whereas the syntactic definition of word has no definable phonological length, the phonological limit in Pacoh is two syllables. Words and phrases (i.e., syntactic units composed of two or more syntactic words) of more than two syllables may have more complicated prosodic realizations than the phonological word. One area where this can be highlighted is the clause-incorporation Word-Formation Strategy (as discussed in section 11.2.4.1), as in S12.

S 12: Phonologically complex syntactic word³¹

‘I make fences (in general).’



The clause-incorporative form is a single intransitive verb that contains seven syllables and five phonological ‘words’.³² Considering this to be a single word deals with the problems associated with an otherwise syntactic separation of a single word, namely the reduplicant /kər.riəŋ-kər.rə:ŋ/ ‘fences’. It also explains why other lexical material, such as a completive adverb, cannot be inserted in the middle of the word.

³¹ The transcription uses hyphens only to mark off phonological words, not morphemes. The interlinear gloss contains hypens, which are simply used as a convenience to see the WFS in action.

³² Whether or not the noun in the NOMINATIVE case form is also part of the verb would require more testing, such as whether or not time clauses could be inserted between the noun and verb.

3.2.2 Parts of Speech

The distribution of words in sentences and phrases is governed in part by the inherent features of a word. A primary characteristic is a word's part of speech. Two phonetically and semantically different words may share the same syntactic distribution and may then belong to the same syntactic class. A word class or part of speech can be defined in terms of the following aspects:

- (1) Case-related functions
- (2) Relationships with other parts of speech
- (3) Relationships with subclasses of the same part of speech.
- (4) Distributionally relevant semantic distinctions.

For example, nouns serve in case-marked functions. They may occur as the dependents of verbs and other nouns and as complements with prepositions and conjunctions. As for subclasses of nouns, numeral nouns take only unit nouns as dependents, while unit nouns can take common, relator, and pronominal nouns as dependents.

The Lexicase framework currently utilizes eight parts of speech: nouns, verbs, adpositions, adverbs, adjectives, conjunctions, and sentence particles. In Pacoh, only six parts of speech have been identified (there are no determiners or adjectives in Pacoh), as listed in Table 31, in which additional characterizing information is given. Across the top are listed categories that generally characterize each part of speech in Pacoh. Nouns, verbs, and prepositions play roles in case-assignment. The ability to be negated and the specific negation word also differentiate the parts of speech. While *ləjʔ* negates verbs and adverbs, *ʔih* negates nouns. Next, prepositions and conjunctions form exocentric

constructions, having a special kind of obligatory relationship with their noun and verb complements.

Part of Speech	Case Function	Negation	Centricity
Nouns	case-marked	?ih	Endocentric
Verbs	case-assignor	ləjʔ	Endocentric
Prepositions	case-assignor / case-marked	?ih	Exocentric
Conjunctions	NA	-	Exocentric
Adverbs	NA	ləjʔ	Endocentric
Sentence Particles	NA	-	Endocentric

Table 31: Pacoh parts of speech syntactic functions

Conjunctions are the heads of exocentric constructions that require two or more dependents that belong to the same part of speech, such as nouns, verbs, prepositions, or adverbs. They are transparent to the contextual requirements of regents (i.e., verbs requiring specific features of their noun dependents). Thus, a conjunction having two dependent nouns creates a syntactic unit that functions like a noun, occurring in case marked positions and the like.

Nouns occur as dependents and regents in case-related functions. They can occur in case forms, such as NOMINATIVE or ACCUSATIVE, as dependents of verbs. In these case forms, they are assigned case relations by their regent verbs. Noun-to-noun relationships also involve case form and case relation relationships.

Adpositions, prepositions in Pacoh, form exocentric constructions with a complement, either a noun or a verb. The view taken in this grammar (which is more in line with earlier than modern Lexicase views) is that prepositions are in a sense transparent, so that a verb is able to assign the LOC case to the noun complement of a preposition. The link between a preposition and its complement in a prepositional

phrase³³ gives prepositional constructions a special, almost word-like status. Prepositions provide features the noun otherwise lacks, such as case-related or localistic features. Non-extension prepositions (which take non-predicate nouns as complements) assist their complement in marking case forms, but the nouns are not considered as having a distinct case form or relation in the preposition-noun dependency.

Conjunctions, which also form exocentric constructions, similarly do not assign their dependent nouns case. Instead, the nouns, while syntactically linked, are what regent verbs recognize in determining the nouns' distribution and case assignment.

Sentence particles are the dependents of predicates. Their position in sentences varies according to language. They often occur at sentence boundaries, either the end (e.g., Chinese languages, Vietnamese, Mon-Khmer languages) or the beginning (e.g., Indonesian), but can occur within sentences as well (e.g., Tagalog). Sentence particles mark interrogative, imperative, and emphatic sentences.

Verbs are the predicate heads of sentences. They assign case to their dependent nouns, as well as to exocentric constructions that take dependent nouns (i.e., conjunctions and adpositions). Verbs can be subcategorized according to both case-related and non-case-related contextual features. Case-related features determine the distribution of noun and preposition dependents, while non-case-related features deal with the distribution of

³³ Lexicase does not recognize the Chomskyan notion of 'functional categories' (VPs, NPs, DPs, and the like) as being central units in syntactic representations, and 'phrase structure rules,' such as $S \rightarrow NP+VP$, are not used. Instead, words are the central building blocks of phrases, though these words and their dependents can together create multiword syntactic constituents. 'Prepositional phrase' in Lexicase is a general term referring generally to a syntactic constituent with a preposition regent, a notion similar to the 'headedness' requirement of functional categories, but instead, the preposition is the controlling element of the phrase rather than the abstract functional category PP.

other parts of speech or specific restrictions on the nouns and preposition aside from case-related matters. The primary case-related features and associated categories are displayed in Table 32. All verb types require the PAT case relation, and so it is not listed in the table.

Verb Types	Case Relations
±trns	AGT
±crsp	COR
±lctn	LOC
±mode	MNS
±mprs	--

Table 32: Verb classes and case relations

Each positively marked feature in a verb case-frame means that nouns with associated case relations must be located. Indrambarya (1994) accounted for this range of verbs in her subcategorization rule SR-3.

SR-3	[V]	→	[±trns]	(transitive)
			[±lctn]	(locational)
			[±crsp]	(correspondent)
			[±mode]	(mode)

In general, adverbs in Pacoh are post-verbal. Extension verbs take following predicates, either nouns or verbs. Typically, in a sentence with a verb denoting action, a regent extension verb may precede that verb, and an adverb may follow it. Considering adverbs as following dependents also fits the general pattern of left-headedness in Pacoh.

	Verb	[+ngtn]	[+spct]
P	__V	?ih	+
V/+xtns	__V	laj [?]	+
Adv	V__	laj [?]	+/?

Table 33: Combinations of parts of speech

The dependencies between regent verbs and dependent adverbs are shown in stemma form in Figure 11.

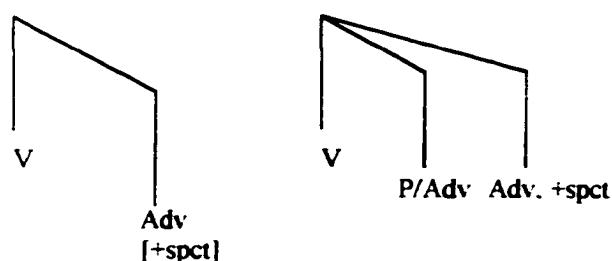


Figure 11: Verbs as regents of adverbs

In the stemmas, each type of predicate can be followed by an adverb of aspect.

3.3 FEATURES AND RULES

Features represent properties of words. Features can be used to demonstrate derivational relationships between words, to differentiate different subcategories of the same lexical category, and to determine the order of words and relationships that obtain between them. There are contextual and non-contextual features. Non-contextual features mark membership in a part of speech, the subcategory within that part of speech, semantic properties, localistic case-related contextual features, and a variety of syntactically significant distinctive features (cf. Starosta 1988:53). Contextual features deal with the relationships between words, such as case-related contextual features and constraints on linear ordering of multiple dependents of a word. Contextual features typically have requirements that are represented by $[?([\beta F_i])]$ for optional requirements (note the parentheses) of dependents by words or $[?[\beta F_i]]$ for obligatory requirements. In S13, the intransitive locative verb requires a NOMINATIVE and a LOCATIVE complement, to which it is able to locate and assign the PAT and LOC case relations. However,

locative verbs must locate the feature [+lctn] to assign the LOC case. The preposition has this feature and also marks its complement noun (required by the obligatory contextual feature [4[N]]) as being in the LOCATIVE case form. The noun 'house' takes an optional noun dependent, to which it assigns the COR case relation.

S 13: Example of lexical features

'He went to his house.'

dɔ:	po:k	toʔ	duŋ	dɔ:
3s	went up	to	house	3s
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	P	N	N
+prmn	-trns	+lctn	-lctn	+prmn
actr	+lctv	-stay	Lcv	Prv
Nom	+move	+trmn	LOC	COR
PAT	1[actr]	[4[N]]	5([Prv])	
	1[Nom]	[3<4[N]]	5([COR])	
	1[PAT]			
	-trmn			
	3[+lctn]			
	4[Lcv]			
	4[LOC]			

Rules assist and employ lexical features in a variety of ways that further manage the ordering of lexical elements in a phrase and also to state implicational relationships between sets of words (e.g., derivational relationships). Only some of the rules are used widely in the presentation of this grammar. Subcategorization rules are a major part of this grammar, which provides descriptions of the major subcategories of all the parts of speech in Pacoh. Redundancy rules that deal with distributional patterns of words are a crucial part of the descriptions of the various subcategories of words. Word-Formation Strategies are given a complete chapter (chapter 11). Zero derivation rules are mentioned occasionally as needed to distinguish homophonous forms. Chaining rules are discussed primarily with respect to some subcategories of extension verbs (i.e., verbs that take

verbs as complements). Linking rules are general mechanisms for matching features between words and are not needed for syntactic analysis. In the following subsections, each of these rules and the means of their formal representation are described.

As noted, indices are generally filled with numbers from within the domain of the regent (except with chaining rules, discussed in the next subsection). However, the letter *m* is used to mark the indices of elements recoverable from the discourse context, such as with pro-drop verbs, and the number *0* is used when the verb is impersonal and does not take an overt referential noun in the NOMINATIVE case.

3.3.1 Chaining Rules and Missing Nouns

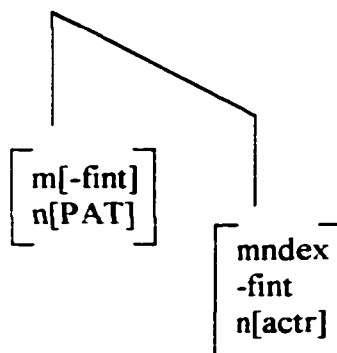
Verbs require noun complements bearing case relations. All verbs, regardless of subclass, have the requirement [?[PAT]]. However, not all verbs have overt nouns to satisfy their case-related contextual requirements, such as non-finite verbs, impersonal verbs, and so-called ‘pro-drop’ verbs. Impersonal verbs (such as verbs of existence or meteorological phenomena) can never take an overt noun in the NOMINATIVE case, simply satisfying their required index with *0*. ‘Pro-drop’ verbs (such as commands and general in-context speech) recover their index from the discourse environment, marking their index with the letter *m*.

For verbs that have no other means of satisfying their requirements, chaining rules (CRs) are powerful but necessary rules. CRs copy indices from words outside of the immediate syntactic domain of a word (i.e., the regent-head constituent). This generally involves non-finite dependent verbs recovering indices from their verb regents. There are four case-related chaining rules used in this grammar: PAT-to-actor (P2a), actor-to-actor

(a2a), COR-to-actr (C2a), and PAT-to-PAT (P2P). These rules link features of complements of the upper verb with contextual feature requirements of the lower verb. The new chaining rule introduced in this grammar is the C2a rule. This rule is primarily needed to account for the linking of COR complements to the lower verb's actor. Section 10.4.4.1 contains more discussion on this issue. The rest of this section describes each of the four chaining rules.

The P2a rule links the index of the regent verb's PAT with the requirement of the dependent infinitival verb.

Cr-1: P2a



This rule is demonstrated in S14.

S 14: Examples of the P2a rule: transitive and intransitive verbs

(a) 'He was able to sleep.'

dɔ:	ho:j	bi?
3s	able	sleep
1ndex	2ndex	3ndex
N	V	V
Nom	-trns	-trns
PAT	1[actr]	1[actr]
actr	1[PAT]	1[PAT]

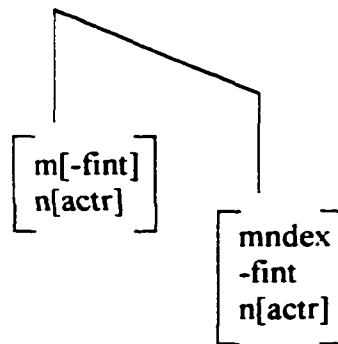
(b) 'He made the dog bite.'

dɔ:	pa.kap	?a.cɔ:	kap
3s	make-bite	dog	bite
1ndex	2ndex	3ndex	4ndex
N	V	N	V
actr	+trns	Acc	-trns
Nom	1[actr]	PAT	1[PAT]
AGT	1[AGT]		
	3[Acc]		
	3[PAT]		

In both S14a and b, the dependent verbs recover their actors from the PAT of the upper verb, though in S14a, the regent verb is intransitive, and in S14b, it is transitive.

The actor-to-actor rule links the index of the regent verbs actor with that of the dependent infinitival verb. This rule is applied by a restricted class of transitive verbs. Verbs that apply the a2a rule have been called ‘manner’ verbs (Starosta 1997, 1998, Wilawan 1993, Indrambarya 1994), though in this grammar, they are considered external non-affected verbs (section 10.4.4.2).

Cr-2: a2a



This rule is demonstrated in S15.

S 15: Example of the a2a rule

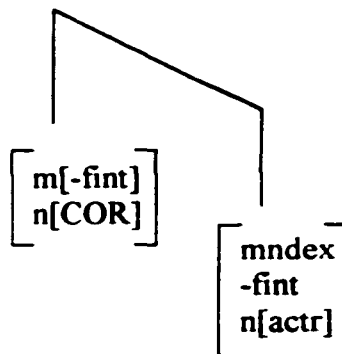
‘He took a hammer to hammer.’

də:	ʝəɪ	tər.naʃ	taʃ
3s	take	a hammer	to hammer
Index	2ndex	3ndex	4ndex
N	V	N	N
actr	+trns	Acc	-fint
Nom	+xtns	PAT	1[actr]
AGT	+ntm		1[PAT]
	1[actr]		
	1[AGT]		
	3[PAT]		

In S15, the verb ‘take’ takes as a PAT the noun ‘hammer’, but the lower verb ‘to hammer’ takes as its actor and PAT the actor of the regent verb.

The C2a rule links the indices of a verb’s COR with the required [?(actor)] of a dependent infinitival verb.

Cr-3: C2a



This rule applies only to correspondent verbs, as in S16.

S 16: Correspondent extension verb with dative relator noun

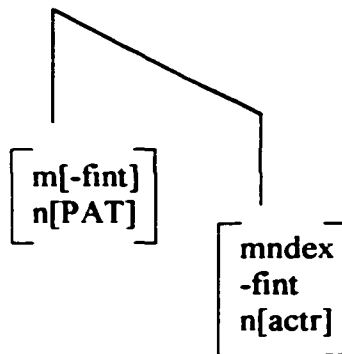
'I make my friend drink.'

ki:	pa.ŋɔ:jʔ	ʔa.dɔ:	jəw	ŋɔ:jʔ
Is	make drink	to	friend	drink
Index	2ndex	3ndex	4ndex	5ndex
N	V	N	N	V
Nom	-trns	+rltr	-unit	-fint
PAT	+crsp	+datv		-trns
	+xtns	Dat		3[actr]
	+cstv	COR		3[PAT]
	1[PAT]	3[N]		
	3[COR]			

In S16, the COR is interpreted as the actor of the dependent verb.

The P2P rules link the indices of the regent verb's PAT with the required indices of the lower infinitival verb. Verbs that apply this rule have been called 'continuation' verbs in the literature.

Cr-4: P2P



It is generally applied to verbs that take transitive verb complements. The two examples in S17 both contain non-finite [ʔi... verbs, though the regent verb is transitive in S17a and transitive in S17b. In addition, the C2a rule applies before the P2P rule in S17b.

S 17: Examples of P2P rule

(a) 'This rice is good to eat.'

dɔːj	ʔn.nɛh	jiəm	ʔi.ca:
rice	this	tasty	to eat
1ndex	2ndex	3ndex	4ndex
N	N	V	V
actr	+dmns	-trns	-fint
Nom		+sttv	+trns
PAT		1[actr]	m[actr]
		1[PAT]	m[AGT]
			3[PAT]

(b) 'I gave him rice to eat.'

ki:	ɟɔːn	dɔː	dɔːj	ʔi.ca:
1s	give	3s	rice	to eat
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	N	V
actr	+trns	Acc	Acc	-fint
Nom	+crsp	COR	PAT	+trns
AGT	1[actr]			m[actr]
	1[AGT]			m[AGT]
	3[COR]			3[PAT]
	4[PAT]			

The non-finite verbs in these cases recover their actor nouns from the discourse context and are formally marked 'm'.

3.3.2 Derivation Rules and Word-Formation Strategies

Derivation rules (DRs) recognize relationships between sets of lexical classes that share phonological shapes and syntactic and/or semantic meanings but differ in a pattern of isolatable features. DRs are non-directional synchronic rules since first-language learners do not have access to diachronic processes that can be directional. DRs can, however, allow for the creation of new words or the interpretation of existing groups of words based on these analogical sets. DRs may or may not involve phonological differences, but they always involve differences in the syntactic status of two phonologically similar words.

Zero derivation simply requires sets of homophonous words that occur with regular analogical patterns. In Pacoh, there are sets of adverbs that have homophonous stative verb counterparts. There is, for example, a pattern of zero derivation between sets of common nouns and unit nouns (the only nouns that can serve as dependents of numeral nouns). The common nouns typically fall in the semantic field of ‘unit of measurement’, but do not necessarily have unit noun counterparts. S18 shows analogical sets of words, in which homophonous pairs are shown to share part of speech (N) and a general semantic feature (+container). However, they differ in the feature [\pm unit].

S 18: Analogical set for [+unit]

ti.ŋa:n ₁	:	ti.ŋa:n ₂	::
‘bowl’		‘bowlful’	
N		N	
-unit		+unit	
+container		+container	
ʔa.teh ₁	:	ʔa.teh ₂	
‘basket’		‘basketful’	
N		N	
-unit		+unit	
+container		+container	

The analogical set in S18 demonstrates DR-1, which states the relationship between these sets of words.

DR-1 [N, -unit, +container] : [N, +unit, +container]

As derivations are not always regular, not every non-unit common noun with a ‘container’ meaning may have a homophonous form.

Instead of discussing ‘morphology’, the current Lexicase approach uses ‘Word-Formation Strategies’ (WFS). WFSs refers to the concept of ‘seamless morphology’ (Starosta, forthcoming), distinguishing this approach from the traditional study of

morphology as the search for minimal, separable chunks of phonetic material with specific semantic and syntactic functions that are somehow listed, like words, in the language faculty. Throughout this work, WFSs and terms such as ‘phonetic string’ and ‘word-initial substring’ (rather than ‘morph’ and ‘prefix’) and the like are chosen to maintain consistency in the view that language speakers do not break up words into abstract units while learning and using language. Though certain speakers of languages (especially, such as language specialists, linguists, language teachers, and the like) may have conscious access to parts of words, in general, this is not the case in the acquisition of such word-formation strategies by children and not likely for most speakers of languages. Instead of a conscious awareness of the phonetic forms that are associated with meaning, groups of words which share phonetic substrings form the basis for unconscious analogies that allow the creation of other words with shared phonological shapes.

WFSs are formally indicated in this grammar through analogies. Taking the following set of corresponding word forms and syntactic and semantic features, a WFS rule can be deduced.

S 19: Analogical set for [+cstv]

kap ‘to bite’	:	pa.kap ‘to cause to bite’	::
V		V	
-cstv		+cstv	
-sttv			
bi? ‘to sleep’	:	pa.bi? ‘to cause to sleep’	
V		V	
-cstv		+cstv	
-sttv			

In this case, the input can be any non-causative active verbs. The word-initial shape, a presyllabic [pa..., is associated with the feature [+cstv]. Such a rule can be formally represented as follows.

WFS-11: Causative verb word-formation

$$\begin{array}{l} \left[\begin{array}{c} \bar{V} \\ -cstv \end{array} \right] \\ [X] \end{array} : \begin{array}{l} \left[\begin{array}{c} \bar{V} \\ +cstv \end{array} \right] \\ [paX] \end{array}$$

The phonological shapes involved (in this case, nothing versus [pa...]) are shown in the lower level, and the syntactic and semantic categories are shown in the upper one (in this case, non-causative verbs corresponding to causative verbs).

In terms of the prosodic hierarchy, there are word-dominated and phrase-dominated substrings. Word-dominated word-shapes are the primary issue in the chapter on word-formation strategies in Pacoh. A more complete prosodic representation is that shown in WFS-13 of the generation of multitude stative verbs.

WFS-13: Multitude stative verb formation

$$\begin{array}{l} \left[\begin{array}{c} \bar{V} \\ +sttv \\ \beta F_j \end{array} \right] \\ \acute{\sigma} \\ / | \\ [C... \end{array} : \begin{array}{l} \left[\begin{array}{c} \bar{V} \\ +sttv \\ +mltd \end{array} \right] \\ \acute{\sigma} \\ / | \\ [Ca.C... \end{array}$$

The word-form in this instance is a word-dominated form.

3.3.3 Linking Rules

Linking rules (LRs) have the crucial function in Lexicase of connecting feature-requirements of lexical regents with features of their lexical dependents. They apply in all dependency relationships where a regent requires certain features of its dependent.

The formal aspect of LRs is to assign the lexical index number of a dependent to the contextual feature requirement of a regent. There are two types of LRs: valence linking rules, which link indices between words, and internal linking rules, by which regents assign feature-related interpretations to their dependents.

Linking rules affect both endocentric and exocentric relationships. The following two valence linking rule formulas are taken from Starosta (1997).

$$\text{LR-1a. } [?(+WC_i)] \rightarrow [n(+WC_i)] \quad / \quad \left[\begin{array}{c} \text{ndex} \\ + WC_i \end{array} \right]$$

$$\text{LR-1. } [?(+WC_i)] \rightarrow [n(+WC_i)] \quad / \quad \left[\begin{array}{c} \text{ndex} \\ +WC_i \end{array} \right]$$

The first rule applies to adjuncts in endocentric constructions, and the second applies to complements in exocentric constructions. In each rule, any word that can take or requires a word class 'WC' as a dependent copies the index number 'n' from the index number of such a word that is within the regent's domain 'ndex'.

Internal linking rules also refer to both exocentric and endocentric constructions. In each rule, contextual requirements or options are satisfied by the copying of the index of the word class to the required feature ('n' to '?').

LR-1a. Endocentric complement:

$$\left[\begin{array}{l} n[+WC_i \] \\ ?[\alpha F_i \] \end{array} \right] \rightarrow \left[\begin{array}{l} n[+WC_i \] \\ n[\alpha F_i \] \end{array} \right]$$

LR-1b. Endocentric adjunct:

$$\left[\begin{array}{l} n([+WC_i \]) \\ ?([+F_i \]) \end{array} \right] \rightarrow \left[\begin{array}{l} n([+WC_i \]) \\ n([+F_i \]) \end{array} \right]$$

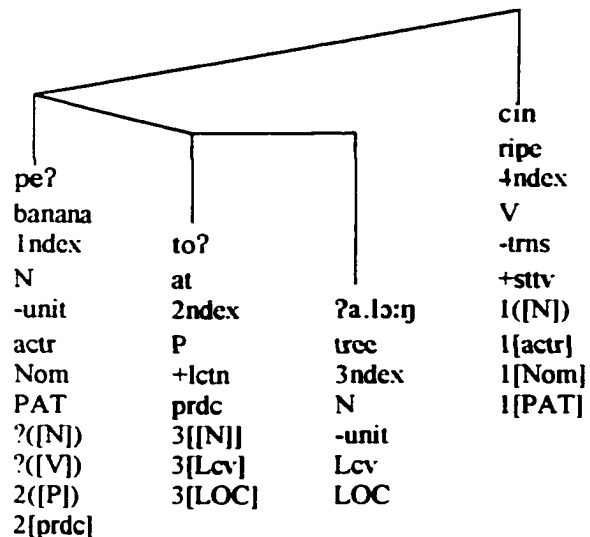
LR-1c. Exocentric (complement):

$$\left[\begin{array}{l} n[[+WC_i \]] \\ ?([+F_i \]) \end{array} \right] \rightarrow \left[\begin{array}{l} n[[+WC_i \]] \\ n([+F_i \]) \end{array} \right]$$

A common function of these rules is to assign case to nouns and prepositions. S20 demonstrates a variety of regularly occurring LRs.

S 20: Linking rules applied

'The bananas in the tree are ripe.'



The double-brackets indicate complements in an exocentric construction, while single brackets are for complements (which are obligatory) in endocentric constructions.

Parentheses indicate the dependents are adjuncts (which are optional). The noun ‘banana’ could take a noun and/or verb adjunct, but there is no violation if they do not. In this case, it finds a preposition and assigns it the feature [prdc]. The preposition must take a noun, to which it assigns the LOC case relation. The verb in the sentence locates the noun in the sentence and assigns it the PAT case relation.

3.3.4 Redundancy Rules

Redundancy rules (RRs) (as discussed in Starosta 1998) serve to indicate implicational relationships between sets of words in a lexical class (and so do not produce speech, but simply refer to relationships between words) and also to determine distributional properties (a more active rule in governing syntactic organization), as listed within the lexical matrix of single words. A RR can indicate that having one particular feature indicates that it has one or more other features as well.

RR-N12 [+prnn] → [N]

This rule simply states that any word marked [+prnn] (pronoun) is a noun. RRs can also make general implicational statements about certain types of lexical subcategories.

RR-N17 [N] → [-prnn]

Since rules cannot change the already specified features of words, this rule indicates that any unmarked noun is [-prnn].

The more productive aspect of redundancy rules is their role in constraining dependents of words. RRs allow or require words with certain features to be their dependents. For example, RR-N1 states that nouns in Pacoh can take as adjuncts nouns and verbs and that those adjuncts follow their regent.

$$\text{RR-N18} \quad [N] \rightarrow \left[\begin{array}{l} ?([N]) \\ @<?([N]) \\ ?([V]) \\ @<?([V]) \end{array} \right]$$

Parentheses indicate the optionality of these words, that they are adjuncts in exocentric constructions. These are stepping stone rules that state first a general requirement and then a following more specific requirement. This rule states that these words may appear as optional dependents and that they follow the nouns, as indicated formally by the ‘less-than’ sign, as shown in S21.

S 21: Adverb dependent of verb

‘He ran very quickly.’

dɔ:	la.luh	ɲa?	li:
3s	run	fast	very
1index	2index	3index	4index
N	V	Adv	Adv
	3([Adv])		
	3<4([Adv])		

Exocentric constructions take only complements as dependents. For example, RR-4 states that Pacoh prepositions require a noun complement and that the noun complement follows the preposition.

$$\text{RR-4} \quad [P] \rightarrow \left[\begin{array}{l} ?[N] \\ ?@[N] \end{array} \right]$$

RRs are seen often throughout this grammar.

3.3.5 Subcategorization Rules

Subcategorization rules (SRs) distinguish between two or more subtypes of words in a shared lexical category, which can be a major category (e.g., nouns or prepositions) or a subcategory (e.g., transitive verbs or interrogative sentence particles). Pacoh conjunctions consist of extension and non-extension conjunctions.

SR-1 [Cnjc] →
 [±xtns]
 [±prsn]
 [±ltn]

This rule states that Pacoh conjunctions can be [±xtns], [±prsn], and [±ltn]. Each of these features can then be subcategorized.

SR-2 [Cnjc, +xtns] → [±ltn]

SR-3 [Cnjc, -xtns] →
 [±prsn]
 [±ltn]

SRs are usually not listed in this grammar, but instead are generally indicated by means of hierarchically layered branching diagrams.

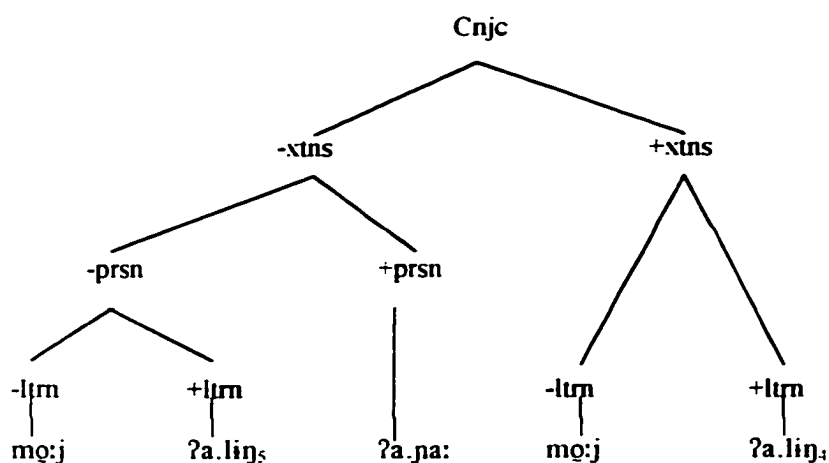


Figure 12: Subcategorization diagram for Pacoh conjunctions

The organization of subcategorization diagram is not extremely important. In some cases, general features are placed above more marked features, in order to group generally recognized categories of words (e.g., the feature [±trns] occurs above [±mode] in the Pacoh verb subcategorization stemma). In other cases, more marked features are placed above less marked features in order to show that the least marked class does have

the fewest lexically distinctive features (e.g., common nouns are at the lowest branch of the Pacoh noun subcategorization stemma).

3.4 GRAMMATICAL ROLES

This section discusses the function of grammatical roles in a Lexicase perspective. Grammatical roles—including case relations, predication, themes, and the actor macrorole—are not semantically based, though they may have recognizable patterns of correspondence with semantic classes.

3.4.1 Case Relations

In Lexicase, the term ‘case’ refers to the grammatical roles played by nouns in sentences and the system in which those roles are indicated in syntactic phrases. Lexicase uses the term ‘case relation’ to refer to the grammatical relationship between verbs (or nouns) and their dependent non-predicate nouns or noun-bearing prepositional phrases. Case relations relate overt syntactic information (especially word order and word subcategories) to semantic roles and scope phenomena (Starosta 1988:114, 116). Though each case relation may correspond to semantic concepts of participants in sentences, in the Lexicase view, determining syntactic categories does not rely on semantic properties.³⁴

While case relations are grammatical roles in sentences, they require some means of case-marking, that being ‘case forms’ in Lexicase. Case forms employ a range of general grammatical elements, such as word order, word forms, noun subclasses marked by inherent lexical features (e.g., nouns marked [+lctn] for the LOCATIVE case form and

LOC case relation), and preposition or noun regents that carry certain required features. The exact number of case forms varies per language, though all languages have the NOMINATIVE and LOCATIVE case forms, while the ACCUSATIVE case form is seen only in accusative languages and ERGATIVE in ergative languages.

The Lexicase view is that there are five grammatical relations--PAT (Patient), AGT (Agent), COR (Correspondent), LOC (Locus), and MNS (Means). The PAT case relation is the central case relation in any sentence, and if there is only one noun dependent of a root predicate, that noun must bear the PAT case relation. The COR case tends to be used to mark possession, third noun complements, and noun complements of intransitive verbs. In accusative languages, AGT corresponds to the 'subject' when referring to sentences with transitive verbs. The LOC case may mark the general orientation of an action in space and time. The MNS case is used to indicate the means by which an action is enacted. It should be emphasized here that in this syntactic analysis, the non-grammatical semantic functions of these case relations are secondary to the grammatical functions of the case relations themselves. This approach may better serve the goal of determining whether the human language faculty does indeed compartmentalize certain syntactic mechanisms separate from semantic matters.

Another important aspect of the Lexicase definition of case is that it is a perspectivist view rather than a situational one. Consider S22a, b, and c. Rather than assigning differing semantic roles to the first nouns in each sentence, the first NOMINATIVE noun bears the actor macrorole, which demonstrates what the perceived

³⁴ See a similar statement in Marantz 1985:306.

grammatical ‘subject’ is in each case. Whether the case form is PAT or AGT is not semantically determined by the situation, but rather by the verb, transitive or intransitive. This difference between semantic notions of participants in a sentence is generally dealt with through the use of syntactic and semantic features borne by words.

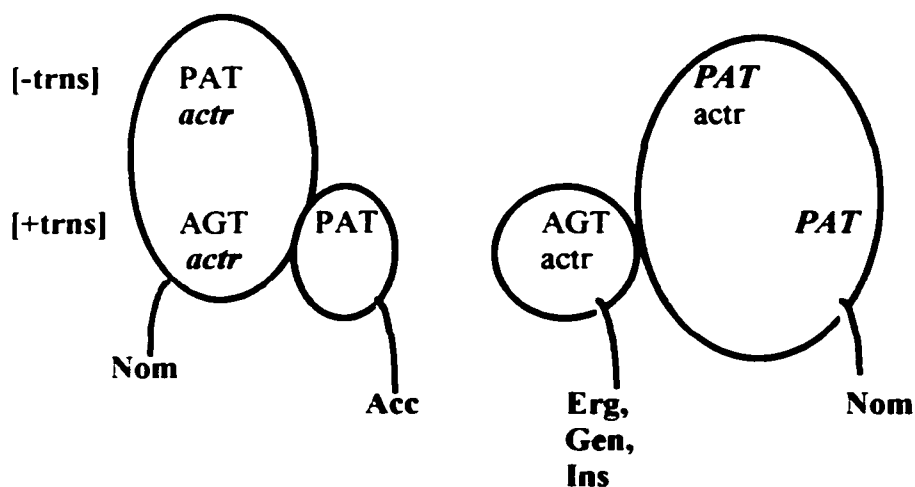
S 22: Example of a perspectivist view of case

- (a) ‘He opened the door with his hand.’
 actr PAT MNS
 AGT
- (b) ‘His hand opened the door.’
 actr PAT
 AGT
- (c) ‘The door was opened by his hand.’
 actr MNS
 PAT

3.4.2 The Actor Macrorole

Actor macrorole nouns are important for chaining rules that link the actants of upper verbs with their lower non-finite verbs (see section 3.3.1). As a general cross-linguistic case-related role, the actor macrorole is required in Lexicase to account for the distinction between accusative and ergative languages, as discussed by Starosta (1998:9). Using the traditional terms ‘subject’, ‘agent’, and ‘object’, the difference between accusative and ergative languages is that case forms of the ‘subject’ of intransitive verbs and agent of transitive verbs are the same in accusative languages, while in ergative languages, it is the ‘subject’ and ‘object’. In Lexicase, a more general statement can be made. Accusative languages mark actors in the same way for both transitive and intransitive verbs, while in ergative languages, it is the PAT case relation that is marked the same.

ACCUSATIVE: actr ↔ Nom ERGATIVE: PAT ↔ Nom



3.4.3 Themes and the TOPIC Case Form

The feature [them] is used in Lexicase to account for the ‘topic-comment’ pattern seen in many human languages. Theme nouns in Pacoh are always clause-initial, coming before the noun in the NOMINATIVE case form in a sentence in the TOPIC case form. All predicates can take [them] as adjuncts and require them to precede nouns in the NOMINATIVE case form, if present.

RR-1 [prdc] → [?[them]<?[Nom]]

In Pacoh, they may precede verbs, predicate nouns, or predicate prepositions.

S 23: Theme noun in TOPIC case form

‘It was him that the dog bit.’

?a.ʔe:m	?a.co:	kap	je:
1 _{Index}	2 _{Index}	3 _{Index}	4 _{Index}
3s (younger)	dog	bite	already
N	N	V	Adv
Tpc	actr	+trns	+spct
them	Nom	2[actr]	
	AGT	2[Nom]	
		2[AGT]	
		1[them]	
		1[PAT]	

In S23, the verb takes the index of the theme noun and copies it to the required PAT complement. See section 10.1.4 for more discussion on topics and relating of theme nouns and required case relation complements.

Pacoh has a class of comment extension prepositions³⁵ that overtly mark the presence of a topic (section 8.2.3.3). Theme nouns can be used to satisfy contextual requirements of verbs with otherwise missing dependents. The indices of theme nouns may satisfy the requirements of verbs expecting nouns bearing the PAT, AGT, or LOC case relations. Notably, they do not link the theme with a COR, which is always a postverbal complement in Pacoh.

³⁵ These comment prepositions could also be a new lexical category (Starosta p.c.). Considering these prepositions does pose logic problems regarding the passing of lexical features and even the phonological link to the dependents.

4. SUMMARY OF PACOH PHRASE STRUCTURE

This section summarizes lexical dependency relationships in Pacoh that form the foundation for overall Pacoh phrasal structure. There are non-case-related dependencies between parts of speech (e.g., verb regent and adverb dependent) and case-related dependencies between verbs, nouns, and prepositions (e.g., intransitive verb regent and noun dependent in the NOMINATIVE case form and bearing the PAT case relation).

4.1 DEPENDENCY RELATIONSHIPS BETWEEN PARTS OF SPEECH

Pacoh has six parts of speech—including verbs, nouns, prepositions, adverbs, conjunctions, and sentence particle—that occur in a variety of dependency relationships. One way to characterize the syntactic patterns of a language is to look at the range of combinations of parts of speech. Additional lexical subcategories further restrict the possibilities, but looking at the parts of speech as a whole is a good place to start. Table 34 lists the regents along the top and dependents down the left side. Potential combinations are marked plus or minus. These are only general statements about the relationships between parts of speech, though numerous constraints may still prevent subclasses from co-occurring.

	CASE			NON-CASE		
	N	V	P	Adv	Cnjc	Sprt
N	+	+	+	-	+	-
V	+	+	+	-	+	-
P	+	+	+	-	+	-
Adv	+	+	-	+	-	-
Cnjc	+	+	+	-	+	-
Sprt	+	+	+	-	-	-

Table 34: Combinations of parts of speech and case marking

The categories 'Case' and 'Non-Case' refer to grammatical functions of those parts of speech within Pacoh. These possible dependency constructs are shown in stemma form in Figure 13.

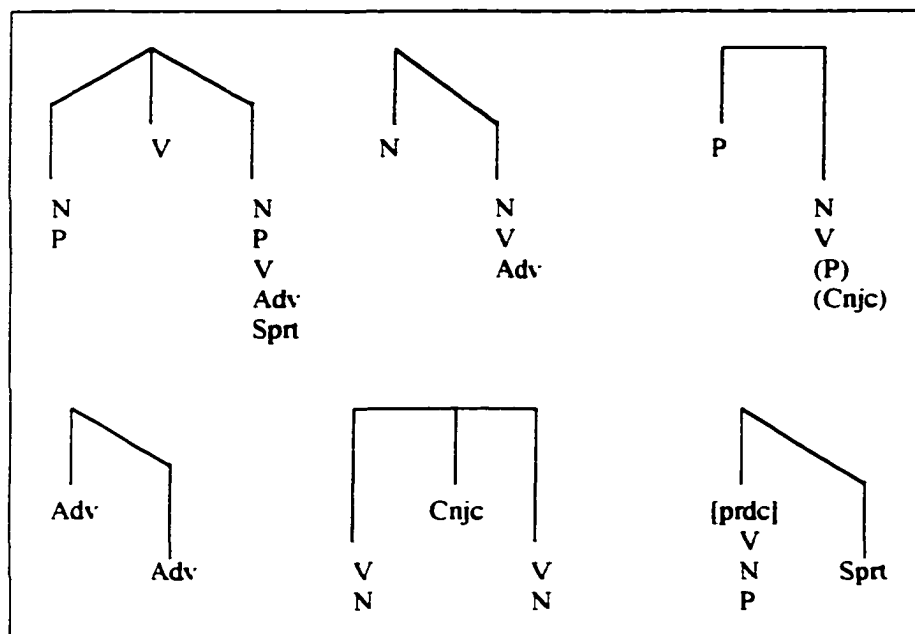


Figure 13: Pacoh dependency relationships

Verbs take nouns and prepositions in both the preverbal and postverbal positions, but dependent verbs, adverbs, and sentence particles only in the postverbal position.

Verbs assign case to their noun or preposition complements. Conjunctions are dependents of verbs based on the kinds of dependents the conjunctions have, nouns or verbs.

Nouns can take nouns and verbs as following dependents, forming strictly right-branching structures. Prepositions form exocentric constructions with their following dependent nouns or verbs. Their dependents can include extension prepositions, which are predicates and have verb complements, and conjunctions with verb complements.

Sentence particles are always the following dependents of predicates, including verbs, predicate nouns, and predicate prepositions. Adverbs have only been found to take other adverbs as adjuncts.

4.2 CASE FORMS AND CASE RELATIONS

Word order, dependency-based structural relationships, and subcategories of parts of speech are all part of the case marking system in Pacoh. The five case forms in Pacoh (NOMINATIVE, ACCUSATIVE, LOCATIVE, DATIVE, PREDICATIVE, and TOPIC) involve linear ordering of dependencies between verbs, nouns, and prepositions, as shown in the stemmas in Figure 14. The TOPIC case form precedes all the other case forms, appearing in the clause-initial position. A noun before a verb marks the NOMINATIVE case form, while a noun after the verb typically marks the ACCUSATIVE case form. However, there is a class of nouns that all share the presyllable [ʔa... (see sections 7.6.2.3.3 and 11.2.1.3) which is considered to constitute a special DATIVE case form.³⁶ A locational preposition (which takes a noun complement) marks the LOCATIVE case form and then assigns its noun dependent the appropriate case relation based on the preposition's subcategory.³⁷ A

³⁶ The motivation for this case form is that, though word classes are the primary means of distinguishing case forms, and normally postverbal nouns are considered to be in the ACCUSATIVE case form, these nouns do demonstrate shared properties that mark them overtly. They are always postverbal, though they can precede or follow ACCUSATIVE PAT nouns. In addition, they share an overt phonological shape. In all other case forms, word class alone is used to determine case forms, which I consider to be more superficial and less indicative of the grammatical roles, the latter of which are assigned by regent verbs. Through this approach, the ACCUSATIVE and PREDICATIVE case forms in Pacoh correspond to four case relations. Furthermore, in breaking with other Lexicase descriptions, not all LOC are considered to be in the LOCATIVE case form, and conversely, not all nouns in the LOCATIVE case form bear the LOC case relation.

³⁷ This approach is similar to earlier Lexicase writings that claimed the preposition is transparent to the regent verb, and the noun is then directly assigned a case relation. Current Lexicase writings show the preposition as bearing the case form and case relation. In that approach, there is no problem regarding locality and the ability of a regent to influence the dependent of a dependent. Since the preposition and its

noun dependent of a noun marks the PREDICATIVE case form. Figure 14 shows in stemma forms the different case forms and lists the possible associated case relations beneath each.

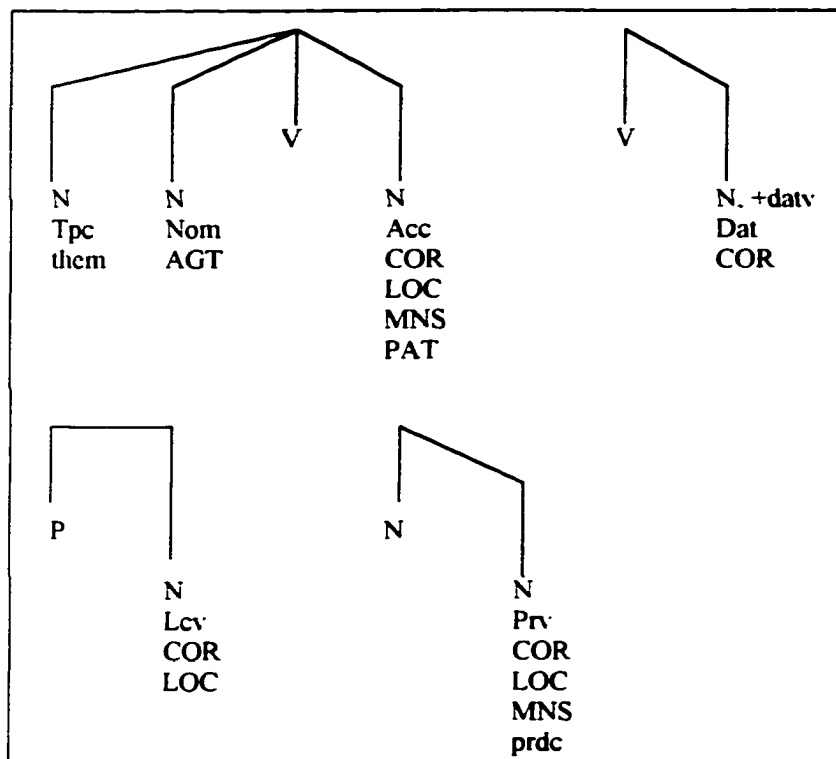


Figure 14: Correspondences of case forms and case relations in Pacoh

There are two differences between the approach here and current Lexicase works. First, the case forms that obtain between verbs and nouns (i.e., either the ACCUSATIVE or DATIVE case form) and between nouns and nouns (i.e., the PREDICATIVE case form) are considered to be different. That issue is dealt with more in section 7.3.2.4. Second, prepositions are not considered to be able to receive case, though they assist in assigning

noun complement form an exocentric construction, the approach used does not interfere with the claims made in this study.

case to nouns. There are problems with this approach, in particular, associating the case-requirements of verbs and the indirectly connected nouns. The prepositions have been seen in earlier Lexicase works as transparent to the verbs (as is also the case with conjunctions), closer to the approach taken in this grammar, but then there is the problem of what case the nouns take as dependents of prepositions. I do not see this as a resolved issue.

The 13 correspondences of case forms and case relations in Pacoh are shown in Table 35. Theme nouns are considered to be in the TOPIC case form (see section 3.4.3), though [them] is not a case relation and is not included in this table.

	PAT	AGT	COR	LOC	MNS	prdc
Nom	1	2				
Acc	3		4	5	6	
Lcv			7	8		
Dat			9			
Prv			10	11	12	13

Table 35: Case relation and case form correspondences

S 24: NOMINATIVE case form: Nom-PAT (1) and Nom-AGT (2)

(a) 'Now, I live in America.'

ho:j-ʔn.nəh	ki:	tu.məŋ	ʔat	daŋ	mi:ʔ
now	Is	live	at	place	US
N	N	V	P	N	N
+time	Nom	-trns	+lctn	Lcv	Prv
Tpc	PAT	+lctv	+lctv	LOC	COR

(b) 'He helped that older lady.'

dɔ:	pɔ:r	ʔa.ma:	ʔŋ.koh
3s	help	older lady	that
N	V	N	N
Nom	+trns	Acc	Prv
AGT		PAT	prdc

S 25: Transitive locative verb: Nom-AGT (2), Acc-PAT (3), and Acc-LOC (5)

‘He put the book on the table.’

dɔ:	dɔ:ʔ	ʃa:c	ʔi.niəŋ	ki.ba:n
3s	put	book	top	table
N	V	N	N	N
Nom	+trns	Acc	Acc	Prv
AGT	+lctv	PAT	LOC	COR

S 26: ACCUSATIVE case form: Acc-COR (4) and Acc-MNS (6)

(a) ‘How many kilograms do you weigh?’

ʔa.ca:j	ʔn.ta:ŋ	li.mɔ:	kən
brother	weigh	how many	kilograms
N	V	N	N
Nom	-trns	Acc	Prv
PAT	+crsp	COR	prdc

(b) ‘I shot the bird with a crossbow.’

dɔ:	pɛ:ŋ	ʔa.ceʔ	daŋ	tu.miəŋ
3s	shoot	bird	means	crossbow
N	V	N	N	N
Nom	+trns	Acc	Acc	Prv
AGT	+mode	PAT	MNS	prdc

S 27: Comparing Lcv-COR (7) and Lcv-LOC (8)

(a) ‘Buy bananas for him.’

pləj	pɛʔ	ʃɔ:n	ʔa.ca:j-ʔŋ.koh
buy	banana	for	he
V	N	P	N
	Acc	+datv	Lcv
	PAT		COR

(b) ‘He went up to the house.’

dɔ:	ʃər ₁	toʔ	duŋ
3s	went up	to	house
N	V	P	N
Nom	-trns	+lctn	-lctn
PAT	+lctv		Lcv
			LOC

S 28: Dat-COR (9)

‘Give me your book.’

jɔ:n	ʔa.ki:	ʃac	maj
give	to-1s	book	2s
V	N	N	N
+trns	+datv	Acc	Prv
+crsp	Dat	PAT	COR
	COR		

S 29: Noun Phrases: Prv-COR (10), Prv-LOC (11), Prv-MNS (12), and Prv-[prdc] (13)

(a) ‘The bananas that are ripe in the tree.’

peʔ	ʔən	cin	daŋ ₁	ʔa.lɔ:ŋ
banana	that	ripe	location	tree
N	N	V	N	N
	Prv	+sttv	Prv	Prv
	prdc		LOC	COR

(b) ‘My trap made of stone.’

ʃiŋ	ki:	daŋ ₂	bul
trap	1s	of	stone
N	N	N	N
	Prv	Prv	Prv
	COR	MNS	prdc

In an ACCUSATIVE language, the NOMINATIVE case form corresponds to the PAT of an intransitive verb and the AGT of a transitive one. The ACCUSATIVE case form is borne by the PAT of a transitive verb and the LOC, COR, and MNS case relations of verbs of location, correspondent, and mode verbs, respectively. The LOCATIVE case form always bears the LOC case relation. The PREDICATIVE case form marks noun-to-noun dependencies. The LOC and MNS case relations are assigned to location and mode nouns respectively. The COR case relation and [prdc] are marked by modifying or possessive nouns. More specific details of these combinations are discussed in the various relevant subsections on noun, preposition, and verb dependency constructs.

4.2.1 Verb-to-Noun Case Dependencies

Verbs mark contextual case relation requirements. The main verb types include intransitive [-trns], transitive [+trns], locative [+lctv], correspondent [+crsp], and mode [+mode] verbs, although verbs can have combinations of these features. Each verb subcategory has specific case requirements, as shown in the stemmas below.

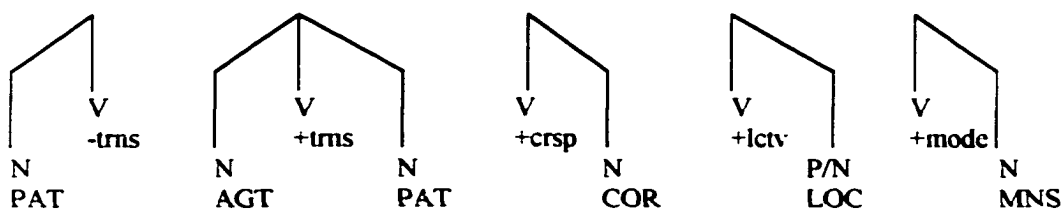


Figure 15: Verb-to-noun case-related dependencies

Intransitive verbs require a PAT complement in the NOMINATIVE position, while transitive verbs require an AGT in the NOMINATIVE position and a PAT either in the ACCUSATIVE position or through chaining rules (see section 3.3.1) that link the index of the sentence-initial theme-marked position with the index of the verb. Correspondent, locative, and mode verbs all assign case relations as shown. They take PAT or AGT complements only as subcategories of the feature [\pm trns]. Chapter 10 describes all of these verbs and their assorted subcategories.

4.2.2 Noun-to-Noun Dependencies Case

Dependency relationships between nouns consist of two types. The first type is a sentence in which the second noun is a predicate regent in an equational construction. The other is a noun phrase in which the second noun is a non-root predicate dependent.

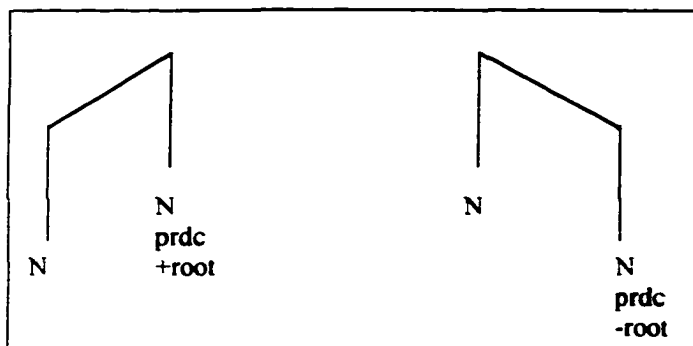


Figure 16: Noun-predicate and noun phrase

The relationship is parallel to that of a V-to-N dependency relationship. In both cases, a predicate can be root or non-root.

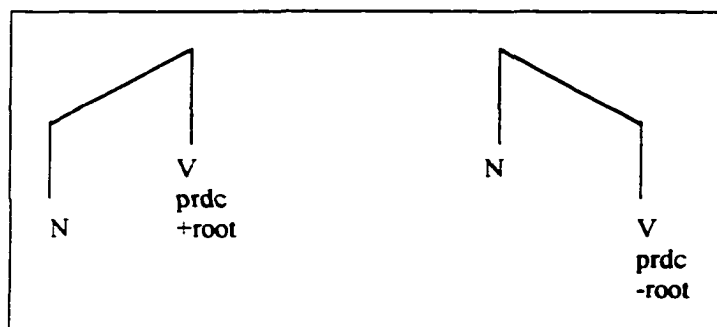


Figure 17: Finite clause and noun phrase

The non-sentential N-to-N dependency may involve four case relations: LOC, MNS, COR, and [prdc]. In each case, an N-to-N relationship is considered as marking the Predicative case form, but different case relation.

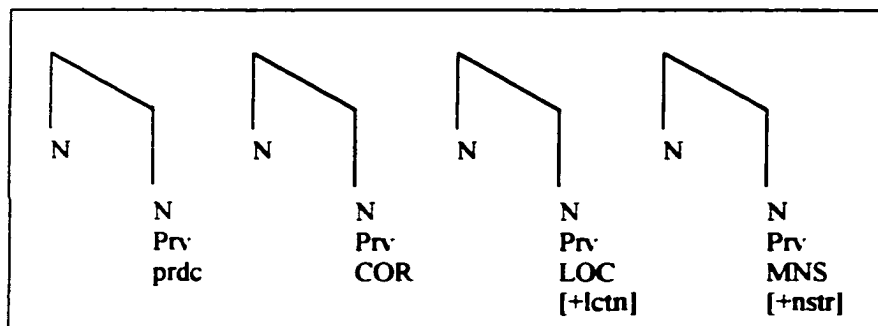


Figure 18: Noun-to-noun dependency relationships

The feature [prdc] in noun-to-noun relationships represents general modifiers that semantically restrict the regent (see section 7.3.2.4 for additional discussion). The COR case relation encodes the possessors of nouns. The LOC and MNS case relations are assigned to nouns having the features [+lctn] or [+nstr] respectively.

5. ADVERBS IN PACOH

In this chapter, Pacoh adverbs are characterized as a lexical class (with a focus on distinguishing them from verbs) and then subcategorized into five subcategories: aspectual, general, intensifying, resultative, and sequential adverbs.

5.1 CHARACTERISTICS OF PACOH ADVERBS

Pacoh adverbs always follow their regents, which can be verbs, other adverbs, or degree numeral nouns. These possible dependencies are shown in the following linear-order redundancy rules and representative stemmas in Figure 19.

- RR-A1 [V] → [@<([Adv])]
 RR-A2 [Adv, +degr] → [@<([V, +nstf])]
 RR-A3 [N, +degr] → [@<([Adv, +nstf])]

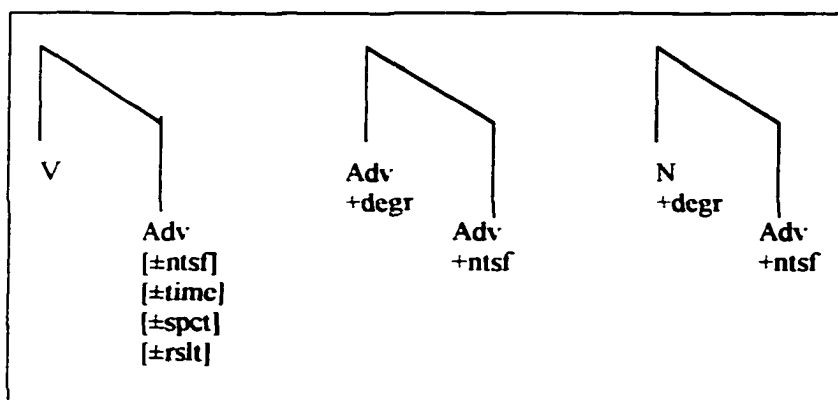


Figure 19: Distribution of Pacoh adverbs

Pacoh adverbs always follow their regents, a fact that coincides with the right-branching tendency of Pacoh syntax. Verbs take the widest range of adverb subcategories as dependents, and correspondingly, adverbs occur most often as dependent of verbs.

As for their semantic functions, Pacoh adverbs describe manner (e.g., *ʃaʔ* ‘quickly’, ‘together’), state of completion (e.g., *ʃə:* ‘already’), and result of actions and conditions (e.g., *ca: ʔa.ʃaj* (eat-full) ‘Eat until you’re full’). Many adverbs (especially those of the general adverb subclass) are derivationally related to stative verbs that describe manner, as shown in DR-3.

DR-3: [V, +sttv] : [Adv]

In S30, the derivationally related forms *ho:j₁* ‘capable’ and *ho:j₂* ‘capably’ are shown in their differing contexts.

S 30: Comparing homophonous verbs and adverbs

(a) ‘He’s very capable.’

do:	ho:j ₁	li:
3s	capable	very
N	V	Adv
	+degr	+ntsf

(b) ‘He tells stories very capably.’

do:	ʔn.ʃuər	ho:j	li:
3s	tell stories	capably	very
N	V	Adv	Adv
	-degr	+degr	+ntsf

What differentiates an adverb from its derivationally related stative verb correlate is that a derived adverb cannot take a noun ‘subject’, as seen in S31, which also demonstrates that adverbs cannot be predicates.

S 31: Verb versus adverb

(a) ‘This is enough.’

ʔn.nəh	k ^h am
this	enough
N	V
Nom	+sttv

(b) ‘This is enough.’

*ʔn.nəh	ʔa.k ^h am
this	enough
N	Adv
Nom	+rsIt

In the sentence above, ‘enough’ can be a predicate head and take a NOMINATIVE ‘subject’ in S31a, while in S31b, the resultative adverb cannot, meaning it cannot be a verb.

S32 demonstrates distributional differences between verbs and homophonous adverbs. In S32a, the phonetic form is ambiguous, representing two possible sentences, one with a verb and the other an adverb. In S32b, *?a.faj* 'to fullness' cannot be a verb since it has the phonological marking of resultative adverbs [*?a...*. In S32c, *faj_i* is a dependent verb of the extension preposition 'in order to', which requires a word with the feature [prdc], while the resultative adverb form *?a.faj* in S32d cannot occur in that position since it is not a predicate.

S 32: Testing verbs and resultative adverbs

<u>Example</u>	<u>Interlinear</u>	<u>Translation</u>
(a) ca: faj	(eat - be full)	'Eat and be full.' OR 'Eat to fullness.'
(b) ca: ?a.faj	(eat - to fullness)	'Eat to fullness.'
(c) ca: jo:n faj	(eat - in order to - be full)	'Eat in order to be full.'
(d) *ca: jo:n ?a.faj	(eat - in order to - to fullness)	'?Eat in order to be fullness.'

Though the semantic fields of some adverbs may overlap with those of some extension verbs, Pacoh adverbs still belong to a distinct syntactic category, as determined by their postverbal position.

S 33: Aspectual extension verb and aspect adverb

(a) 'I've already eaten.'				(b) 'I've already eaten.'			
ki:	k ^h ɔ:j ^ʔ	ca:	dɔ:j	ki:	ca:	dɔ:j	je:
1s	already	eat	rice	1s	eat	rice	already
N	V	V	N	N	V	N	Adv
	+spct						+spct

In S33a, the aspectual word is a prime extension verb (see section 10.4.4.5.1 for discussion of prime verbs) that can only precede its dependent verb, while in S33b, the aspectual word is an adverb that can only follow its regent verb.

Negation tests have proved somewhat ineffective in differentiating verbs and adverbs. Where adverbs are the dependents of verbs or other words, native speakers tended to prefer to negate the regent verb rather than the adverb (cf. the oddness of saying in English ‘??He went not fast’).

S 34: Negation of regent verb, not adverb

‘This ladder is not good to climb.’

kəm.pɔːŋ	ʔn.nɛh	ləjʔ	ʃər	ʔa.ʔɔː
ladder	this	not	climb	for-good
N	N	V	V	Adv
		+ngtn		

Thus, in S34, the only position for negation is preverbal.

Differentiating adverbs from verbs with aspect is more productive. If given a bare verb with no dependents, an aspectual adverb may follow. This is most clearly seen in resultative adverbs, which can be phonologically marked through Word-Formation Strategies. Pacoh adverbs cannot stand alone and be followed by an aspectual adverb, as in S35b, while its verb counterpart can, as in S35a.

S 35: The aspectual adverb test with resultative adverbs

(a) ‘He’s better already.’

(b) ‘*He’s well (Adv) already.’

ʔɔː	jeː	*ʔa.ʔɔː	jeː
good	already	well	already
V	Adv	Adv	Adv
	+spct		+spct

Presumably, such is also the case for homophonous verbs and adverbs, though it is something of a non-disprovable issue since they are already homophonous and it is difficult to prove that they are adverbs in the mind of the speaker.

S 36: The aspectual adverb test with unmarked adverbs

(a) 'He's already skilled.'

ho:j	je:
skilled	already
V	Adv
	+scpt

(b) '*He's already skillfully.'

ho:j	je:
skillfully	already
Adv?	Adv
	+spct

More data is needed to clarify the status of Pacoh adverbs and to verify some of the claims made in this chapter.

5.2 PACOH ADVERB SUBCATEGORIES

Adverbs in Pacoh are subcategorized by the features $[\pm\text{ntsf}]$, $[\pm\text{spct}]$, $[\pm\text{smlt}]$, and $[\pm\text{rslt}]$, resulting in five subclasses: general, result, simultaneous, aspectual, and intensifying adverbs, as in Figure 20.

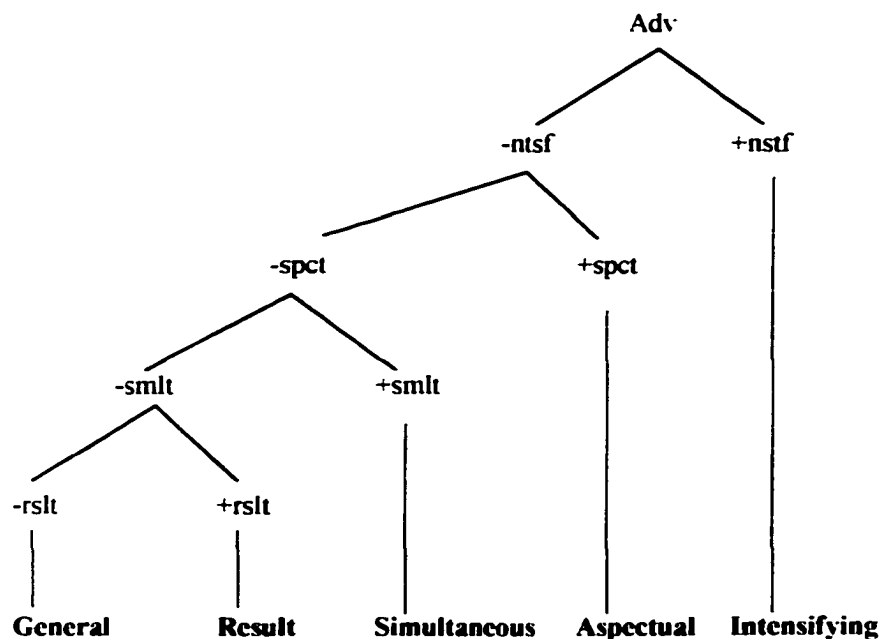


Figure 20: Subcategorization of Pacoh adverbs

The primary means of determining each of these subcategories is their syntactic distribution, though to a certain extent, their distribution can be viewed as selectional/semantic restrictions.

Intensifying [+ntsf] adverbs are selectable as the dependents of verbs, adverbs, and indefinite numeral nouns marked [+degr]. All other adverb subcategories can only be the dependents of verbs. Simultaneous [+smlt] adverbs, which follow general adverbs as dependents of verbs, refer to the order of actions performed by different actors (before, after, or simultaneously). Aspectual [+spct] adverbs occur as the dependents of verbs and occur as the last adverbs of regent verbs. Result [+rslt] adverbs, most of which can contain the word-forming substring [ʔa...], are dependents of verbs. General adverbs have no other distinguishing features, though they tend to be closest to the regents when their regent verbs have other marked adverbs. Each of these subcategories is dealt with in the subsequent sections.

5.2.1 Aspectual Adverbs

There are two phonetically similar aspectual adverbs, *je:* and *jə:*, both meaning ‘already’, which mark the completion of an action or condition. Both forms carry the feature [+prfc], and redundantly, [+spct]. All verbs, including aspectual verbs, can take these adverbs as complements.

RR-A4 [Adv, +prfc] → [ʔ([+spct])]

They can occur as the dependents of any verb subtype, as in S37.

S 37: Aspectual adverbs as dependents of different verb subcategories

(a) 'They already left.'			(b) 'They're working.'			(c) 'They've not yet gone.'				
ʔa.pɛ:	po:k	jə:	ʔa.pɛ:	ʔat	ta?	jə:	ʔa.pɛ:	jo:h	po:k	jə:
3p	go	already	3s	(prog.)	do	already	3p	not yet	go	already
N	V	Adv	N	V	V	Adv	N	V	V	Adv
		+prfc		-cmpl		+prfc		-real		+prfc

The predominant position for aspectual adverbs is in sentence final position. In S38, a perfective adverb follows a resultative adverb.

S 38: Aspectual adverbs after stative and non-stative verbs

(a) 'It's taken care of already.'			(b) 'I'm full already.'	
ta?	ŋɛ?	jɛ:	saj	jɛ:
do	all	already	full	already
V	Adv	Adv	V	Adv
	+rslt	+prfc		+prfc

Aspectual adverbs have not been found anywhere other than after verbs, supporting their status as adverbs rather than verbs.

5.2.2 General Adverbs

General adverbs describe manner of actions that cover a wide range of semantic scopes. These adverbs occur as dependents of verbs according to numerous non-syntactic, selectional restrictions.

S 39: Manner adverb with animate 'subject'

(a) 'He ran very fast.'				(b) 'Don't speak loudly.'			
dɔ:	la.luh	ŋa?	li:	ʔa.kəp	to:ŋ	ŋən	li:
3s	run	fast	very	don't	speak	loud	very
N	V	Adv	Adv	V	V	Adv	Adv

Table 36 contains a list of Pacoh general adverbs and semantic subtypes. Most adverbs in the table are manner adverbs, though there are also extent, repetition, sequential, and solitary adverbs.

Gloss	Pacoh	Function
afterward	?a.tu:n	sequential
again	lɔ:j	repetition
alone	li:l-vi:l	manner
alone	bɔ:m	manner
before	?a.fuəj	sequential
capably	hɔ:j	manner
difficult	diəj ⁷	manner
enough	ʃaj	manner
far	jo:ŋ	manner
firmly	k ^h əm	manner
gradually	ti?-ji?	manner
happily	buj	manner
happily	rə:r-ri:c	manner
hastily	pər.həp-pər.həp	manner
hastily	pər.həp	manner
hurriedly	kər.tu:h-tu:h	manner
hurriedly	həp	manner
loudly	ŋən	manner
meticulously	məl-mi?	manner
oneself	bɔ:m	reflexive
own	?n.daj	reflexive
quickly	ʃa?	manner
sneakily	tə:j ⁷	manner
straight	ti.nəŋ	manner
studiously	?m.min	manner
studiously	pər.tat	manner
suddenly	ki.kər	manner
suitably	pjə?	manner
in such a way	?i.koh	manner
totally	ŋɛ?	extent
well	hɔ:j	manner

Table 36: List of Pacoh adverbs

Manner general adverbs are the complements of reverse simple intransitive verbs (see section 10.3.1.1.2), as in S40.

S 40: Adverb after inanimate actor verb

‘That shirt fits you well.’

ʔa:w	ʔŋ.koh	fɪ:p	piəjʔ
shirt	that	wear	suitable
1ndex	2ndex	3ndex	4ndex
N	N	V	Adv
actr		-trns	+mnr
Nom		+rns	
PAT		4[Adv]	
		4[Adv. +mnr]	
		3<4[Adv]	

There is one repetition adverb, /ɔ:j/, meaning ‘again’ or ‘more’. S41a and b show the position of the adverb both before and after nouns in the ACCUSATIVE form.

S 41: Repetition adverb

(a) ‘Say that again one time.’

to:m	ɔ:j	mɔ:j	kən.ti:ʔ
say	again	one	time
V	Adv	N	N
	+rptn		

(b) ‘Eat more rice/eat rice more.’

ca:	dɔj	ɔ:j
eat	rice	more
V	N	Adv
		+rptn

There is an extension verb *liəh* ‘again’ that is not an adverb as seen by its ability to participate in WFS-12, indicating that it recovers its actor from the discourse context.

S 42: Repetition extension verb with actor-marking word-form

‘He was happy again.’

ʔu.liəh	bu:j-ʔe:m
3s-again	happy
V	V
+xtns	+sttv
+actr	

The forms *bo:m* and *ʔn.daj* are reflexive adverbs, expressing ‘oneself’ or ‘one’s own’. In S43a, the adverb precedes the ‘object’.

S 43: Reflexive adverbs

(a) 'I worked on the field myself.'

ki:	ta?	bo:m	pi.daj
1s	work	self	field
N	V	Adv	N
		+rflx	

(b) 'Those two live on their own.'

ba:r	na?	?a.na:	?at	?n.daj
two	people	they	live	self
N	N	N	V	Adv
				+rflx

The two sequential adverbs refer to the actor performing the action either before or after another external actor.

S 44: Sequential adverb with singular 'subjects'

'They came first, and the teacher came after.'

?a.na:	to?	triəŋ	?a.ʃuəj	tʰəj-jaw ²	to?	ta.tun
3d	arrive	school	before	teacher	arrive	after
N	V	N	Adv	N	V	Adv
			+sqnc			+sqnc

5.2.3 Intensifying Adverbs

The only word in this class, /i:₃/, means 'very/really'. It is derivationally related to the stative verb /i:₁/ 'true/correct', as well as the extension verb /i:₂/ 'truly'. The differences are shown in S45a to c.

S 45: /i:₁/, /i:₂/, and /i:₃/

(a) 'Is that right?'

li: ₁	ləj ²
true	no
V	Sprt

(b) 'I'm really tired.'

ki	li: ₂	?a.le?
1s	truly	tired
N	V	V

(c) 'That's very big.'

?ŋ.koh	pi:t	li: ₃
that	big	very
N	V	Adv

Both the adverb and the extension verb share the semantic function of intensification.

The adverb is considered by some speakers to be more natural than the extension verb, though both are entirely grammatical. In S46, /i:₁/ is considered an extension verb as part of a sequence of verbs.

S 46: Intensifying adverb

'My uncle's good at telling stories.'

ʔm.pi:t	ki:	ʔn.fuər	li:	ho:j
uncle	Is	tell stories	very	well
N	N	V	V	V
			+ntsf	

/i:ʒ may also serve as the dependent of degree adverbs and degree indefinite numeral nouns, such as *ʔe:* and *kli:ŋ*, which both mean 'many', and *bjəʔ* 'few'. The intensifying adverb is always found to follow degree indefinite numerals, though there is no negative evidence available.

S 47: Intensifying adverb with degree numeral noun

'He knows very many stories about us Pacoh.'

də:	cə:m	ʔe:	li:	ka:ŋ	pər.na:j	hɛ:	pa.kəh
3s	know	many	very	unit	story	lp	Pacoh
N	V	N	Adv	N	N	N	N
		+degr	+ntsf				
		+nmrl					
		-dfnt					

This adverb has semantic features beyond the meaning 'very', as demonstrated by its ability to occur as the dependent of non-degree verbs.

S 48: */i:* with non-degree verbs

(a) 'You really have money.'

(b) 'If you go into the house, the dog will really bite you.'

maj	bo:n	li:	praŋ	mə:t	toʔ	duŋ	ʔacə:	kap	li:
2s	have	really	money	enter	to	house	dog	bite	really
N	V	Adv	N	V	P	N	N	V	Adv
	-degr	+ntsf						-degr	+ntsf

What semantic restrictions there may be on this usage is not yet clear.

5.2.4 Resultative Adverbs

Result adverbs refer to the targeted manner of an action. These adverbs consist of two types, the difference being whether or not they have the word-initial substring [ʔa....

Result adverbs that do not have the word-initial substring are homophonous with their stative verb counterparts.

S 49: Homophonous verb and result adverb

(a) 'Dig it till it's deep.'		(b) 'Dig deeply.'	
pi?	tru:	pi?	tru:
dig	dcep	dig	dcep
V	V	V	Adv
+xtns		-xtns	

Further evidence is needed to clarify this distinction between homophonous stative verbs and result adverbs.

Result adverbs marked phonologically by the word-initial substring [ʔa... are more easily identified and differentiated from verbs. These adverbs are derivationally related to stative verbs by a Word-Formation Strategy (see section 11.2.3).

S 50: Result adverb word forms

(a) 'Weave to thickness.'		(b) 'Eat to fullness.'	
taŋ	ʔa.kjər	ca:	ʔa.faj
weave	thick	eat	full
V	Adv	V	Adv
	+rslt		+rslt

The use of the extension preposition *ʔo:n* 'in order to' can be used with semantically similar results, as discussed in section 8.2.3.4.

To refer to the completeness of a scale stative verb, the form *ŋɛʔ₂* 'completely', which is homophonous with the noun *ŋɛʔ₁* 'all', is often used, as in S51.

S 51: Completed resultative adverb

‘My nose is totally stuffed up.’

mɔ:h	ki:	du:t	ŋɛ?
nose	is	congested	completely
N	N	V	Adv
		-trns	+rslt
		+sttv	

5.2.5 Simultaneous Adverb

Only one simultaneous adverb in Pacoh, *ʔm.bɔ?*, which is marked [+smlt], is found in the data. This adverb is only the dependent of verbs with plural or coordinated actants. It can express simultaneous action and actions suggesting reciprocity, as in S52.

S 52: Mutual verb expressing simultaneous action

‘The four are all looking at the same time.’

pɕən	na?	ʃuə	ʔm.bɔ?
four	person	searching	together
N	N	V	Adv
			+smlt

S 53: Mutual verb suggesting reciprocity

‘They walked and talked together.’

ʔa.ɲa:	viə	la.luh	viə	pa.pi	ʔm.bɔ?
they	both	run	both	spoke	together
N	P	V	P	V	Adv
					+smlt

The formal mechanism for determining whether this adverb can be selected by a verb having multiple or coordinative ‘subjects’ is unclear.

6. CONJUNCTIONS IN PACOH

Conjunctions are the heads of exocentric constructions having two or more complements that belong to the same syntactic category. The distribution of these conjunction constructions follows the restrictions of the part of speech of their dependents. The conjunctions are ‘“transparent” to requirements imposed by their regents on their dependents’ (Starosta 1995:2). For example, in Pacoh, conjunctions with noun complements occur in case-marked positions, and distributionally significant features of the nouns are accessible to the regent of the conjunction phrase.

In general, conjunctions are not ordinarily used in Pacoh. More often, a series of nouns or verbs occur without conjunctions, or in other cases, clause-linking prepositions link verb-headed constructions. When they do appear, Pacoh conjunctions generally take noun complements, but occasionally verb complements. Pacoh conjunctions that take noun complements are divided into those that take any nouns and those that take only human nouns.

6.1 CHARACTERISTICS OF PACOH CONJUNCTIONS

As the regents of exocentric constructions, they require a minimum of two complements of the same syntactic category, as in RR-C1. Complements of Pacoh conjunctions include nouns and, less commonly, verbs. ‘X’ refers to either nouns or verbs.

$$\text{RR-C1 [Cnjc]} \rightarrow \left[\begin{array}{l} @<?[X] \\ ?[X]<@ \\ ?[X] \\ ?[X] \\ ?([X]) \end{array} \right]$$

Additional adjuncts can be added without limit beyond the first two complements, as indicated by the last line of the rule, which can be copied. Figure 21 shows stemmas of this kind of construction.

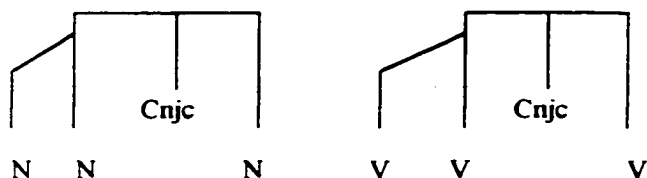


Figure 21: Conjunctions with complement verbs and nouns

The leftward slanting lines represent the additional adjuncts beyond the two complements. However, this does not explain the whole range of possibilities. More than one conjunction can be used in a conjunction construction, as in S54.

S 54: Multiple conjunctions in a phrase

‘You and Culah and Cubuat.’

maj	ʔi.pɛ:	ku.lah	ʔi.pɛ:	ku.buət
2s	and	NAME	and	NAME
N	Cnjc	N	Cnjc	N

The following is a hypothesized stemma representation of that example.

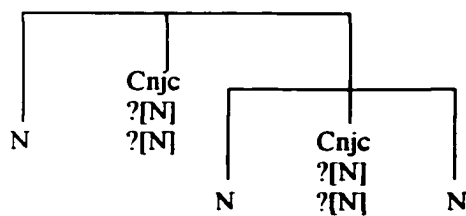


Figure 22: Multiple conjunction construction

In Figure 22, the head conjunction takes a noun to the left and a noun-bearing conjunction as a dependent. The highest conjunction sees the conjunction dependent as having the same syntactic function as that lower conjunction’s dependents, in this case,

nouns. Linking rules would allow it to copy the index of the immediate conjunction dependent. More conjunctions could be added recursively, each branching rightward.

The grammatical functions of the complement nouns or verbs determine the distribution of the conjunction phrase, such as the nouns in a conjunction phrase that are in the ACCUSATIVE case form in S55.

S 55: Conjunction construction with PAT nouns

‘I have one elder brother and three younger brothers.’

ki:	vi:	mɔːj	naʔ	ʔa.caːj	ʔa.liŋ	ba:r	ti.kuəːj	ʔa.ʔɛ:m-kɔːj
1s	have	one	(clsf)	brother	and	three	(clsf)	brother, younger
Index	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex	9ndex
N	V	N	N	N	Cnjc	N	N	N
Nom	+trns	Acc				Acc		
AGT	1[AGT]	PAT				PAT		
		3[PAT]						
		7[PAT]						

The idea that conjunctions are transparent to their regents is probable since the nouns in S55 are assigned the PAT case relation, not the conjunction. Since they are in a coordinate construction, they do not violate the one-per-sent constraint (Starosta 1978), which states that a verb may take only one of any case relations as a complement (e.g., at most, one of a PAT, AGT, COR, LOC, and MNS complements).

Pacoh conjunctions can take predicate complements, both noun and verb predicates. In S56, the contrary extension conjunction connects two predicate nouns.

S 56: Evidence for a noun as a predicate

‘Those people who came weren’t Vietnamese, but rather were Pacoh.’

ŋaːj	toʔ	ʔn.nɛh	ʔih	ti.kuəːj-viət	ma:	ti.kuəːj-pa.kɔh
3s	come	here	be not	Vietnamese	but	Pacoh
N	V	N	V	N	Cnjc	N
				prdc	+cntr	prdc

The following subsections deal with the subcategories of Pacoh conjunctions.

6.2 PACOH CONJUNCTION SUBCATEGORIES

Pacoh conjunctions are subcategorized by the features $[\pm\text{xtns}]$, $[\pm\text{prsn}]$, $[\pm\text{cntr}]$, and $[\pm\text{ltn}]$, resulting in six subcategories: contrary extension conjunctions, alternative extension conjunctions, non-alternative extension conjunctions, person non-extension conjunctions, alternative non-person non-extension conjunctions, and non-alternative non-person non-extension conjunctions.

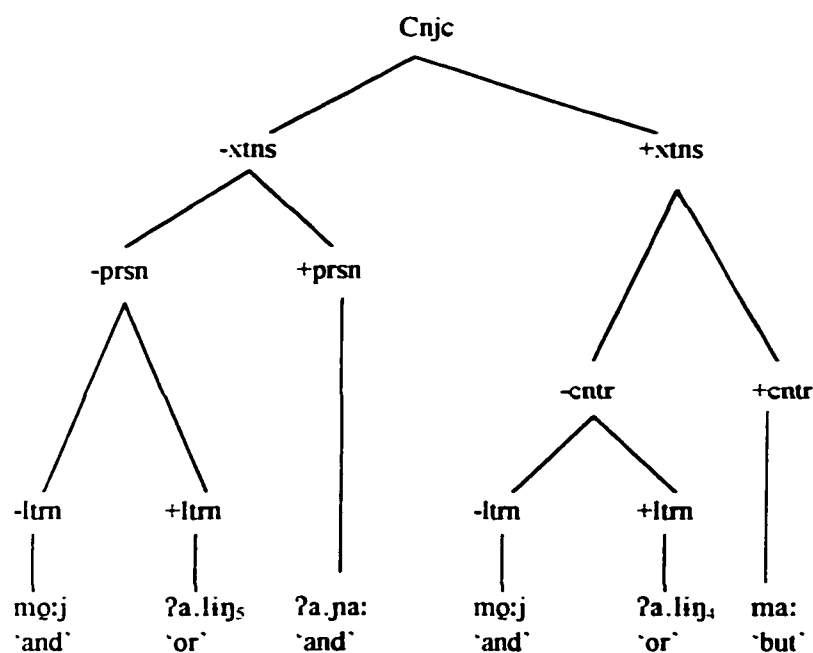


Figure 23: Subcategorization of Pacoh conjunctions

Pacoh conjunctions are subdivided into two primary subcategories by the feature $[\pm\text{xtns}]$. Extension conjunctions take predicates (verbs or nouns) as complements, while non-extension conjunctions can only take non-predicate nouns. RR-C1 applies here, as does RR-I, the general rule for extension words (such as some verbs, prepositions, and nouns).

RR-1 [+xtns] → [?[prdc]]

RR-C3 [Cnjc, -xtns] → [?[N], [?[N]]

Non-extension conjunctions are divided by the feature [±prsn]. Person conjunctions require noun complements with the feature [+humn] (human), human nouns.

RR-C4 [+prsn] → [?[+humn]]

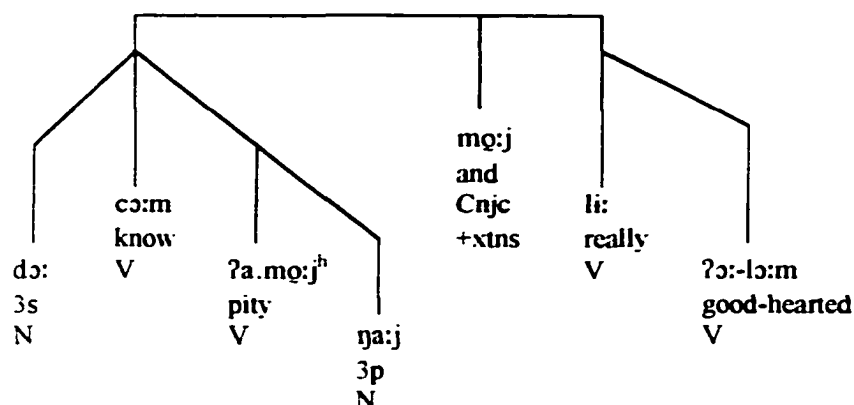
Non-person conjunctions have no restrictions and can take both human and non-human nouns. The semantic feature [±ltn] (alternative) subcategorizes extension and non-extension, non-person conjunctions. Alternative conjunctions represent the meaning ‘or’ while non-alternative conjunctions represent the meaning ‘and’. Each subcategory is discussed further in the subsequent sections.

6.2.1 Non-Alternative Extension Conjunctions (‘and’)

Non-alternative extension conjunctions take both verbs and nouns as predicates with an additive meaning. There are two words in this subcategory, *?aliḡ*₆ and *mō:ḡ*₃, both meaning ‘and’, which are non-alternative conjunctions. In S57 below, the conjunction connects two root verbs. Similar constructions are quite rare in available data.

S 57: Stemma of conjunction construction with two main verbs

'He knows how to pity others and has a good heart.'



6.2.2 Alternative Extension Conjunctions ('or')

Alternative extension conjunctions require predicate complements, either verbs or nouns, and have an alternative meaning 'or'. The form, *?aliŋ* 'or', is the only alternative extension conjunction.

S 58: Alternative extension conjunction

'Is that right or not?'

li:	?a.liŋ	lɔjʰ
correct	or	not
V	Cnjc	V
+sttv	+xtns	+ngtn
	+ltn	

In this case, the verb in the other half is a negation verb. Such alternative forms are extremely rare in available data.

6.2.3 Person Non-Extension Conjunctions ('and')

Person non-extension conjunctions are all non-alternative non-extension conjunctions that take non-predicate nouns marked [+humn]. All of them are forms

homophonous with bisyllabic pronouns in Pacoh, and all share semantic features with those derivationally related forms, as both are related to humans.

These conjunctions require their complements to be human, second or third person, and consist of either two or more than two nouns. Table 37 lists the forms and the type of complements they take, as discussed in S. Watson 1964.

FORM	NO.	PERSON
?i.ja:₂	2	2 nd dual
?a.ja:₂	2	3 rd dual
?i.pɛ:₂	3+	2 nd plural
?a.pɛ:₂	3+	3 rd plural

Table 37: Dependents of person non-extension conjunctions

Watson (*ibid.*) also noted that the forms *?a.ja:₂* and *?a.pɛ:₂* can take a combination of a singular noun and a semantically plural noun. There is apparently semantic agreement between the factors of number and person. In each case, the required features of the complements of the conjunctions match the features of the homophonous pronoun forms.

S 59: Person non-predicate conjunctions

(a) 'mother and father'

?a.ʔi: ?a.ja: ?a.ʔam
mother and father
N Cnjc N
+humn +humn

(b) 'you and Cubuat'

maj ?i.ja: ku.buət
2s and (name)
N Cnjc N
+humn +humn

In data I collected from Pacoh speakers who were 16 to 20 years old, the form *?a.ja:* 'and' is used without regard either to the quality of the noun (human or non-human) or the number of complements involved. In S60, the conjunction has non-human complements, and in S61, it has two plural complements.

S 60: *ʔa.ɲa:* with non-human noun dependents

‘I want to buy two knives and a hoc.’

ki:	ʔiɲ	pləj	ba:r	lam	ʔa.ci:w	ʔa.ɲa:	mɔ:j	lam	kuək
1s	want	buy	two	unit	knife	and	one	unit	hoc
N	V	V	N	N	N	Cnjc	N	N	N
					-humn	-prsn			-humn

S 61: *ʔa.ɲa:* with plural noun dependents

‘We and they are waiting for each other.’

hɛ:	ʔa.ɲa:	ɲa:j	tər.pən
1p	and	3p	wait (recip.)
N	Cnjc	N	V
+plrl		+plrl	

The conjunction *ʔa.ɲa:* is considered, at this point, to be a non-person non-extension conjunction. Unless this turns out to be a regional variant, the conjunction paradigm described by Watson may be in the process of being lost, and the conjunction *ʔa.ɲas* is becoming dominant.

6.2.4 Non-Alternative Non-Person Non-Extension Conjunction (‘and’)

Non-alternative, non-person, non-extension conjunctions take any non-predicate nouns as complements. This is the least marked class since it occurs with the greatest regularity in the data and has the smallest number of subcategorizing features. There are three forms in this category: *mɔ:j*, *ʔa.liŋ*, and *ʔa.ɲas*, all meaning ‘and’.

S 62: Unmarked conjunction *ʔa.liŋ*

‘I have one elder brother and three younger brothers.’

ki:	vi:	mɔ:j	naʔ	ʔa.ca:j	ʔa.liŋ	ba:r	ti.kuə:j	ʔa.ʔɛ:m-kɔ:ɲ
1s	have	one	(clsf)	brother	and	three	(clsf)	sibling-male
N	V	N	N	N	Cnjc	N	N	N
Nom					Acc			
AGT					PAT			

The form *ʔa.liŋ₇* is homophonous with the comitative preposition *ʔa.liŋ₁* ‘with’. The comitative preposition only appears with nouns in the NOMINATIVE position, while this conjunction can appear in the ACCUSATIVE position, as in S62. S63 and S64 show examples of the other two conjunctions in this subclass.

S 63: Unmarked conjunction *mɔːj*

‘There are several houses and a school.’

vi:	li.mə:	lam	duŋ	mɔːj	mu.lam	triəŋ
exist	several	unit	house	and	one-unit	school
V	N	N	N	Cnjc	N	N

S 64: Unmarked conjunction *ʔa.ŋa₃*

‘A person has two arms and two legs.’

mɔːj	ti.kuəj	vi:	ba:r	lam	ʔa.ti:	ʔa.ŋa ₃	ba:r	lam	ʔa.ŋiŋ
one	person	has	two	unit	hand	and	two	unit	leg
N	N	V	N	N	N	Cnjc	N	N	N

6.2.5 Alternative Non-Person Non-Extension Conjunction (‘or’)

The only alternative, non-person, non-extension conjunction, *ʔa.liŋ₄* ‘or’, does not require human noun complements but takes any nouns without regard to specific features or to the number of complements.

S 65: Alternative non-person non-extension conjunction

‘Did he buy a pig or a chicken?’

dɔ:	pləj	ʔa.lik	ʔa.liŋ	ʔn.truəj
3s	buy	pig	or	chicken
N	V	N	Cnjc	N
			+ltn	

6.2.6 Contrary Extension Conjunction (‘but’)

The single contrary extension conjunction in Pacoh is *ma:* ‘but’. It typically occurs with two verbs as complements.

S 66: Contrary extension conjunction

(a) 'I've seen them make them, but I don't know how to.'

ho:m	ŋaj:	taʔ	ma:	ki:	ləj ²	cə:m	taʔ
see	3p	make	but	Is	no	know	make
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex
V	N	V	Cnjc	N	V	V	V
	+prnn	-trns	+cntr	+prnn	+ngtn	+xtns	
			1[prdc]				
			6[prdc]				

(b) 'I went but didn't want to.'

ki:	po:k	ma:	ləj ²	ʔij
I	go	but	no	want
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	Cnjc	V	V
		2[prdc]		
		4[prdc]		

They can take noun predicates as complements, as seen in S56.

6.3 COORDINATION WITHOUT CONJUNCTIONS

In Pacoh, not only do series of nouns and verbs in coordinative-like constructions not require conjunctions, they rarely use conjunctions. Juxtaposition alone is enough in any case.

S 67: Verb sequence without conjunction'The stone *kup* trap is smooth and broad.'

kip	baŋ	bul	pa.pat	ci:r
kup trapof		stone	smooth	broad
N	N	N	V	V

In S67, the order of the stative verbs is not important, and these verbs do not form a general semantic class, suggesting that they do not constitute a single lexicalized item. Instead, they are both regents of the noun 'trap' rather than being linked by a conjunction. A conjunction could be used in Pacoh, but generally is not with these kinds of modifiers.

Another kind of conjunction-like construction is the result of what are called clause-incorporated reduplicants (section 11.2.4.1). These long polysyllabic words, consisting of the phonological parts of nouns, can participate in a complex Word-Formation Strategy involving the copying of sentential elements up to and including the 'subject' of the regent verb. Generic nouns, formed with phonological material from nouns with overlapping semantic scopes, also resemble coordinative constructions. S68 appears to have a verb with multiple complements unlinked by a conjunction.

S 68: Noun sequence without conjunction

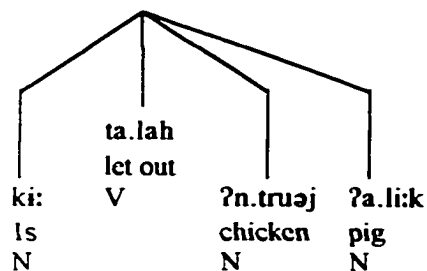
'I let the animals out to eat.'

ki:	ta.lah	?n.truəj	?a.li:k	jə:n	?i.ca:-?i.ca:
1s	let out	chicken	pig	so to	eat
N	V	N	N	P	V

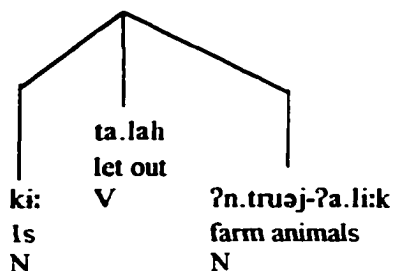
However, 'chickens and pigs' here actually has the generic meaning 'farm animals', including those that the Pacoh usually have at their houses, small animals that are eaten, and the kind that can be let out to feed. In fact, the phonological sequence is semantically ambiguous and can have both the generic meaning and the literal meaning, with correspondingly differing syntactic representations, as shown in S69a and b.

S 69: Two stemmas for noun sequence without conjunction

(a) 'I let out the chickens and pigs.'



(b) 'I let out the farm animals to feed.'



In sum, the use of conjunctions in Pacoh is less common than juxtaposition. Conjunctions, in Pacoh at least, appear to be rather marked. In numerous examples in collected data, words of the same part of speech occur in sequence as dependents. It is significant to note that single words consisting of apparent noun ‘compounds’ (see section 11.2.1.4), which could appear to be juxtaposed elements, are common in Pacoh. This minimal need for conjunctions may have, diachronically, contributed to that word-formation strategy.

7. NOUNS IN PACOH

This chapter looks at the characteristics and subclasses of Pacoh nouns. First, the syntactic, semantic, and word-formation properties of Pacoh nouns are summarized. Then, a subcategorization of the six primary noun subclasses is presented. Next is a section on the possible dependency constructs involving nouns and other parts of speech, with focus on the linear precedence of multiple dependents of nouns. For the remainder of the chapter, the six primary categories of Pacoh nouns are characterized and further subcategorized.

7.1 CHARACTERISTICS OF PACOH NOUNS

Forming a syntactic category, nouns are distinguished from other parts of speech by their syntactic distribution and functions. Shared syntactic properties of Pacoh nouns include their function in case forms and case relations and in the nature of their dependency relationships with verbs, prepositions, and other nouns. Stated below are attributes of nouns common to all languages.

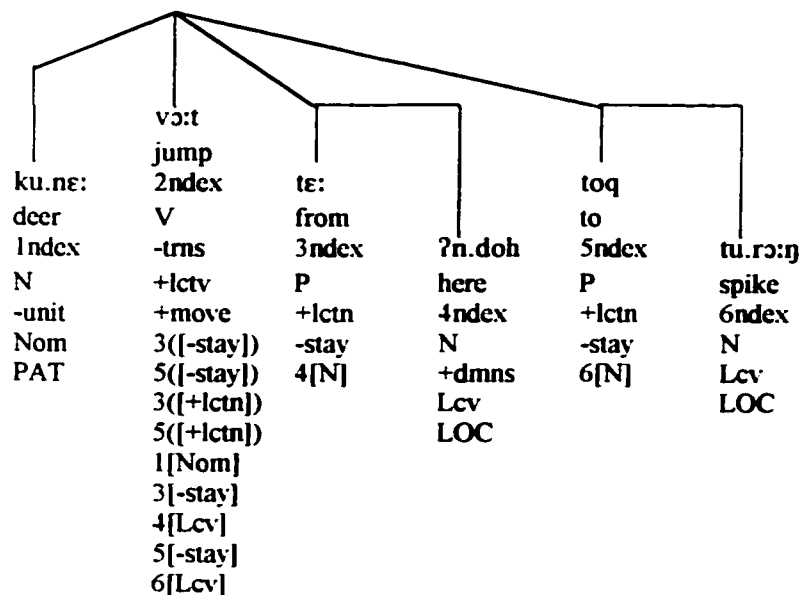
- (1) Nouns and syntactic constructions with noun regents may serve as dependents of verbs or other nouns and as complements in adpositional exocentric constructions.
- (2) Nouns may be the highest heads in case form positions.
- (3) Nouns may bear case relations assigned to them by regent verbs, nouns, or prepositions.
- (4) Nouns may take other words as dependents.

In Pacoh, nouns are the only words to occur in case-marked positions as dependents of verbs, prepositions, and other nouns. Though the last statement is true of all languages, specific constraints on the dependents nouns take (e.g., possible lexical combinations, ordering, etc.) are language specific and are the descriptive and explanatory targets of this chapter. Many nouns in Pacoh exhibit all of the above mentioned properties, while certain subclasses of nouns show more restricted usages depending on syntactic features and functions.

Some of these characteristics are illustrated in S70 and S71. In S70, the non-transitive locative verb ‘jump’ requires a noun in the NOMINATIVE case form to bear the PAT case relation. The verb is a movement locative verb, so it requires a dependent with the features [+lctn] and [-stay], namely prepositions. Each preposition takes a noun complement, assigning them LOC case relation.

S 70: Pacoh Nouns: Nom-PAT and Lcv-LOC

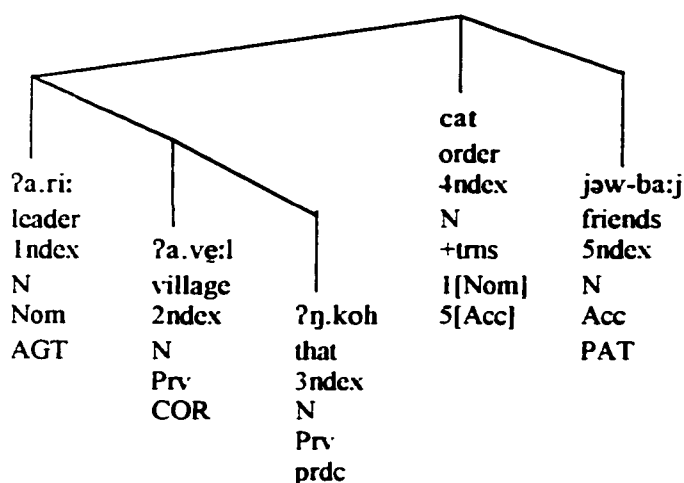
‘The deer jumps from here into the spikes.’



In S71, the transitive verb requires nouns in the **NOMINATIVE** and **ACCUSATIVE** cases to bear the **AGT** and **PAT** case relations respectively. One noun regent has two noun dependents, a noun with the **COR** case relation, with a possessive meaning, and a demonstrative noun bearing the feature **[prdc]**.

S 71: Nouns and case: Nom-AGT, Prv-COR, Prv-[prdc], and Acc-PAT

‘The head of the village orders the friends.’



The **NOMINATIVE** and **ACCUSATIVE** case forms and **PAT** and **AGT** case relations involve relationships between verb regents and noun dependents. The **LOCATIVE** case form is marked by relationships between regent locative verbs and locational nouns or between locational prepositions and non-locational nouns, while the **LOC** case relation is assigned to nouns in those positions. The **PREDICATIVE** case form is marked by direct dependency constructs involving regent and dependent nouns. The **PREDICATIVE** case form can correspond to four kinds of case relations: **[prdc]**, **COR**, **MNS**, and **LOC**. The feature **[prdc]** applies to cases of non-possessive modifying elements, the **COR** case

relation to possession, and the LOC to orientation in space or time. Noun-to-noun dependencies are further discussed in section 7.3.

Another characteristic of Pacoh nouns is their negation by the negation extension verb *?ih*, which takes noun predicates as dependents, as in S72. In contrast, verbs and adverbs are negated by *ləjʔ*, as in S73.

S 72: Negation of a Pacoh noun

‘This pen isn’t yours.’

<i>?u.ra?</i>	<i>?n.nəh</i>	<i>?ih</i>	<i>?m.maj</i>
pen	this	not	yours
N	N	V	N
		+xtns	prdc
		+ngtn	

S 73: Negation of a Pacoh verb

‘I don’t know how to do it.’

<i>ki:</i>	<i>ləjʔ</i>	<i>cə:m</i>	<i>ta?</i>
I	no	know	make
N	V	V	N
	+xtns		
	+ntgn		

Word-Formation Strategies (or WFSs) can further clarify which words in a language are nouns. Certain classes of Pacoh nouns participate in several WFSs that derive particular syntactic and semantic noun subcategories, including some of the following.

- Nouns derivationally related to verbs by the ...an... word-internal substring (e.g., *kaj* ‘to plow’ versus *ka.naj* ‘a plow’).
- Pronouns sharing the word-initial substring [*?a...* and the feature [+datv] (e.g., *ki:* ‘I’ [-lctn] versus *?a.ki:* ‘to me’ [+datv]) or the

semantic feature [+pssn] (possession) borne by words sharing word-initial homorganic nasal substrings (e.g., *ki:* ‘I’ versus *?ŋ.ki:* ‘mine’).

- Nouns referring to days and years and numeral nouns (e.g., *?i.ŋaj-* *?n.trɛ:* ‘three days ago’, *?i.ŋaj-* *?n.truən* ‘four days ago’).
- Nouns that are formed through the process of alternating-reduplication (e.g., *təp-həp* ‘an empty place’).

Section 11.2.1 describes each of these WFSs in more detail. Many nouns in Pacoh do not interact or have not historically interacted with the said WFSs, though they can still be considered nouns based on other criteria.

Semantic criteria can also aid in the identification of nouns in Pacoh. Semantic features that characterize nouns can be divided into two categories. There are syntactically-significant semantic features that directly influence syntactic distributional patterns and lexical subcategorization, and there are purely semantically significant features that affect selectional restriction and do not take part in primary noun subcategorization (though for lower levels of subcategorization, semantic criteria may be more essential). For example, certain pronouns in Pacoh are inherently singular and cannot be the sole dependents of reciprocal verbs, which require plural or coordinative ‘subjects’, as in S74, a kind of test for the nouns’ plurality.

S 74: [+plrl]³⁸ as a syntactically significant feature

(a) 'They looked at each other.'		(b) '*He looked at each other.'	
ŋa:j	tər.ŋoŋ	*dɔ:	tər.ŋoŋ
Index	2ndex	Index	2ndex
they	look-ecip.	he	look-ecip.
N	V	N	V
+plrl	1[+plrl]	-plrl	?[+plrl]

Thus, the feature [+plrl] is both semantically and syntactically significant in Pacoh. In contrast, there are no syntactic restrictions on 'sunlight' being the ACCUSATIVE noun dependent of the verb 'to eat', despite the fact that this is generally a semantically untenable proposition. In this grammar, semantic features are discussed in other subsections on more detailed noun subcategories only when needed to give a complete description of grammatical elements.

7.2 PACOH NOUN SUBCATEGORIES

Nouns in Pacoh are made up of six primary categories: common, unit, numeral, relator, pronominal, and scope nouns. Five features, namely [\pm scop], [\pm prmm], [\pm rltr], [\pm nmrl], and [\pm unit], distinguish those six classes, as shown in Figure 24. Additional subcategorization features, which are discussed in respective subsections, are listed beneath each primary subcategory. Common nouns make up the least marked group and form an open class. In Pacoh, they must be dependents of unit nouns to occur in quantified noun phrases. Pacoh unit nouns—including time, classifier, and general measures—serve as immediate dependents only of numeral nouns. Pacoh numeral nouns take only unit nouns as noun dependents. Pacoh relator nouns—including locative,

³⁸ The choice to refer to plural is made for ease of communication. For purposes of lexical subcategorization, which starts from which features are more marked, singular is the base, and noun

instrumental, and extension relator nouns—have the grammatical function of satisfying the feature requirements of their regents, features that the dependents of the relator nouns lack. Pacoh pronominal nouns—including demonstrative, pronoun, social, and indefinite pronominal nouns—are discourse-grounded referential words.

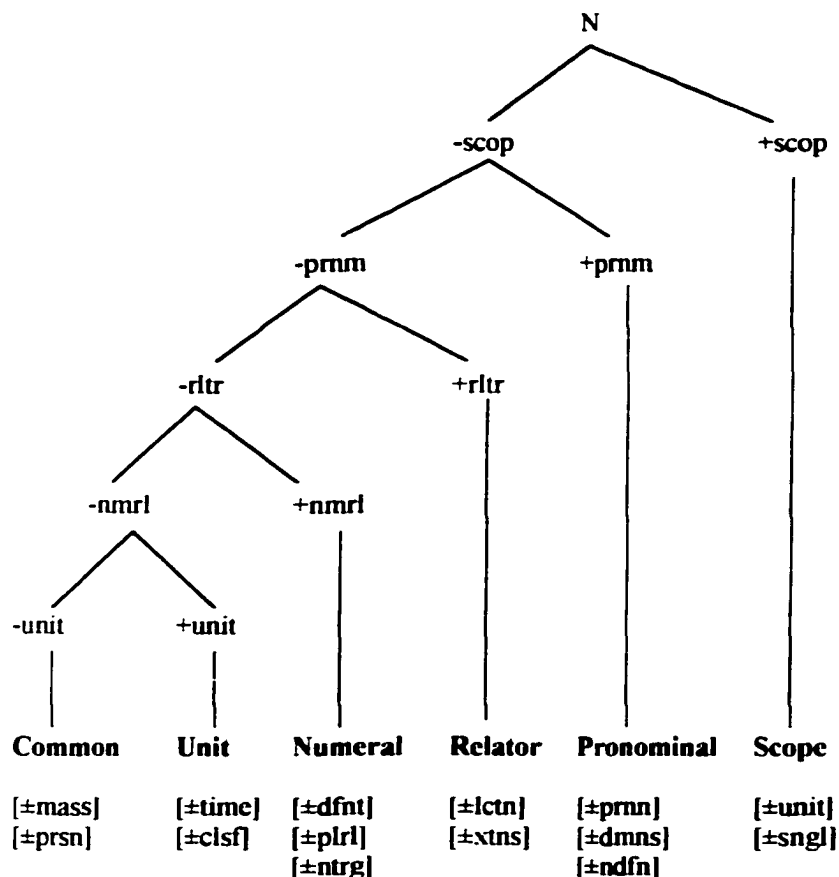


Figure 24: Primary categories of Pacoh nouns

Pronominal nouns cannot take possessive nouns bearing the COR case relation, their primary distinguishing characteristic. Pacoh scope nouns, referring to ‘each’, ‘every’, or ‘all’, are always the highest regents in a noun phrase. In the next section, Pacoh noun

subclasses may have singular and non-singular nouns.

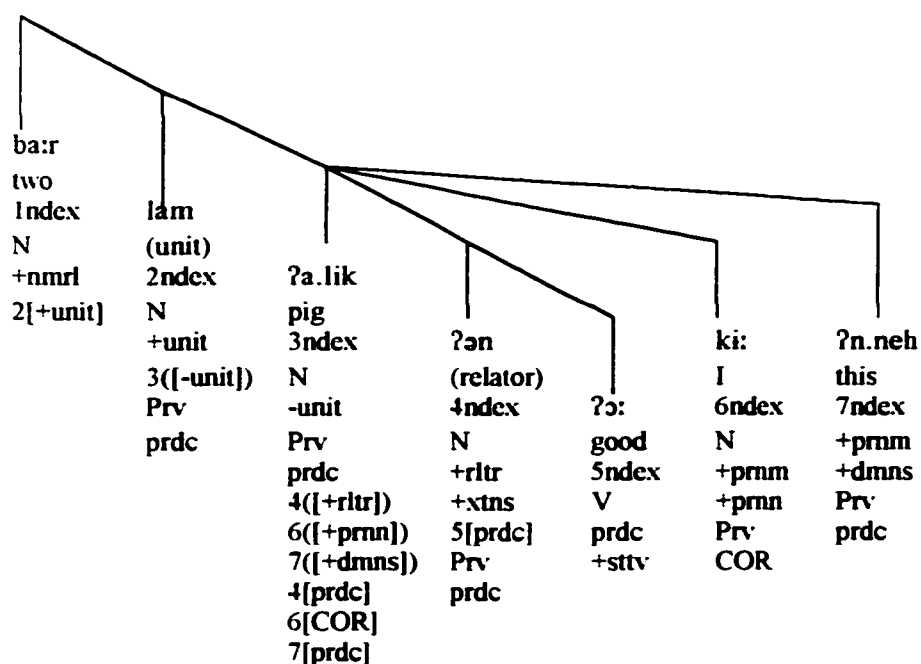
phrase structure is discussed to highlight the dependency relationships between the six primary Pacoh noun subcategories.

7.3 PACOH NOUN DEPENDENCIES AND NOUN PHRASES

In a dependency view, the general term ‘noun phrase’³⁹ refers to a noun plus any dependents it may have, and ‘noun phrase structure’ refers to the ordering of elements within each construction. This does not mean that one single element is the direct regent of all other elements in a total noun phrase. Pacoh quantified noun phrases constitute layers of dependency relationships, as seen in the example in S75, which represents the standard relative ordering of elements in a noun phrase.

S 75: Noun phrase with regent numeral noun

‘These two good pigs of mine’



³⁹ ‘Noun phrase’ does not mean that Lexicase employs a functional category NP as used in the transformational tradition.

The highest regent is the numeral noun, which takes only one immediate dependent, the unit noun. The unit noun then takes its semantically selected common noun, ‘pig’. The common noun (marked [-unit] based on the noun subcategorization discussed in section 7.2) then takes the relator noun, pronoun, and demonstrative as dependents. The next two subsections describe Pacoh noun phrase linear precedence, noun-to-noun relationships, and case-related aspects of noun phrases.

7.3.1 Noun Phrase Linear Precedence

This section first discusses the ordering of elements in noun phrases overall and then the restrictions on the order of dependents of nouns. Two general statements characterize noun phrase structure in Pacoh. First, Pacoh noun phrase structure is strictly right-branching.⁴⁰ Second, multiple elements within a noun phrase are strictly ordered. S. Watson (1976:220) summarized Pacoh noun phrase structure as ‘quantifier-classifier-head-qualifier-possessor-orientation’. My field data is consistent with this overall order, though some of Watson’s posited categories are further divided in the analysis presented here. The feature [prdc] corresponds to Watson’s ‘qualifier’, though only to noun modifiers, since verb modifiers do not bear case roles. Also, [prdc] applies to unit noun dependents of numerals and of dependent demonstrative nouns. The MNS case relation also falls under the ‘qualifier’ category, though [prdc] nouns precede MNS-bearing nouns in multiple-dependent noun phrases. COR corresponds to ‘possessor’ of its regent noun. LOC often corresponds to ‘orientation’, though LOC has a wider range of syntactic and

⁴⁰ This right-branching structure in noun phrases is the case for languages throughout much of Southeast Asia. Recognizing the right-branching nature of these languages explains some otherwise typological anomalies, such as varying orders of unit and non-unit nouns (Savetamalya and Reid 1995)

semantic functions. A simple linear ordering of the elements of a Pacoh noun phrase is shown in Figure 25. Watson's functional categories are listed across the top, and lines connect those to one or more noun subcategories.

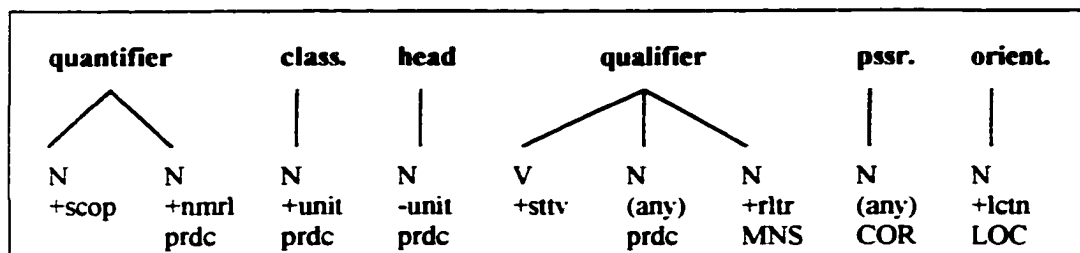


Figure 25: Pacoh noun phrase order (category versus case)

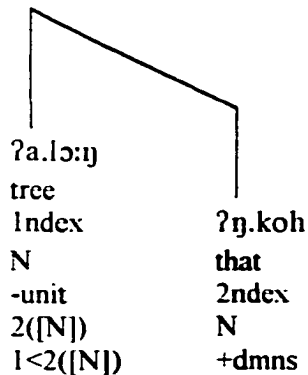
The positions of dependents in relation to their regents as well as other dependents of the same regents are explained in Lexicase through several linear-precedence redundancy rules (see section 3.3.4 for more on these kinds of rules). Linear precedence is indicated formally by the use of less-than signs with the variable '?' filled in by the index numbers of the two primary features to be ordered. The most basic linear precedence rule of Pacoh nouns share by all subclasses is that they take their dependents to the right, as stated in RR-N1.

RR-N1 [N] → [@<?([X])]

That is, a regent noun requires that the index '?' of a dependent 'X' (which can be a noun, verb, or preposition) be higher than that of its own '@'. In S76, the noun 'tree' takes a noun adjunct 'that', and its own index is lower than that of the dependent, 1<2. All other linear order precedence rules discussed below are in relation to this general ordering redundancy rule.

S 76: Demonstration of linear precedence in a noun phrase

‘That tree.’



Noun subclasses are here used to present linear ordering in Pacoh noun phrases since each noun subcategory has different rules. The following discussion moves from the highest to lowest components of a noun phrase. First of all, scope nouns (e.g., *ŋɛ?* ‘all’), which always occur as the highest regent of noun phrases, may take only a single immediate dependent noun, though the dependents can be from any noun subclass.

RR-N2 [+scop] → [@<?([N])]

Numeral nouns, the next highest possible regent in a noun phrase, take only unit nouns as complements.

RR-N3 [+nmr] → [@<?([N, +unit])]

Next, unit nouns take their syntactically selected [+slct] complement (which may only be omitted in a discourse context), as stated in RR-N4.

RR-N4 [+unit] → [@<?([N, -unit, +slct])]

RR-N4 states that a unit noun takes as a following dependent a semantically selected [+smsl] common noun. The last two rules were demonstrated in S75 above.

From this point on in a Pacoh noun phrase, common nouns (and unit nouns without their semantically selected dependent nouns⁴¹) can take as dependents stative verbs and any of the four possible case relations that can apply in noun-to-noun dependencies. There are several kinds of ‘sibling rivalry’ rules that serve to restrict the ordering of multiple dependents. First, verb dependents precede all noun dependents.

RR-N5 [N] → [?(V)<?(N)]

S 77: Dependent verb before dependent noun

‘That big banana.’

pe:ʔ	pi:t	ʔŋ.koh
banana	big	that
1 _{ndex}	2 _{ndex}	3 _{ndex}
N	V	N
-unit	+sttv	+dmns
2({V})		
3({N})		
2({V})<3({N})		

Other apparent combinations of common nouns and following common nouns are not in violation of this rule since they are considered single words derived through WFSs, as discussed in section 11.2.1.4. This accounts for the fact that the verbs must occur after these supposedly modifying nouns.

S 78: Noun and following dependent verb

‘This new Vietnamese medicine.’

təɾ.haw-juən	təm.mɛ:	ʔn.nəh
medicine-Vietnamese	new	this
1 _{ndex}	2 _{ndex}	3 _{ndex}
N	V	N
-unit	+sttv	+dmns
2({V})		
3({N})		
2({V})<3({N})		

⁴¹ Unit nouns not taking grammatically selected common nouns only occur in an established discourse context.

In S78, rather than being analyzed as two words, ‘Vietnamese medicine’ is a single word consisting of phonological material that is similar to two other words. See section 11.2.1.4 for more discussion.

Next, nouns bearing the feature [prdc] (typically demonstrative nouns or extension relator nouns with predicate dependents) precede all other case types.

RR-N6a [±unit] → [?([prdc])<?([COR])]
 RR-N6b [±unit] → [?([prdc])<?([LOC])]

Finally, COR nouns precede LOC nouns.

RR-N7 [±unit] → [@<?([prdc])<?([LOC])]

These rules are demonstrated in S79.⁴²

S 79: Case relation ordering

‘My friend at school.’

jəw	ki:	daŋ	triəŋ
friend	1s	place	school
1ndex	2ndex	3ndex	4ndex
N	N	N	N
-unit	+prnn	+lctn	-unit
2([COR])	COR	LOC	COR
3([LOC])			
2([COR])<3([LOC])			

The last COR adjunct is the dependent of the locational relator noun. Further distinctions apply within subsidiary subcategories of nouns, as discussed in respective sections.

7.3.2 Noun Dependency Relationships

This section deals with various dependency relationships of nouns, both as regents and dependents. First, the case-related functions of nouns are summarized. Then, in

⁴² The MNS case relation has not been fully tested yet.

subsequent sections, specific dependency relationships are discussed, such as nouns as predicates, nouns as regents, nouns as dependents, and other related issues.

7.3.2.1 *Nouns in All Case-Marked Positions*

The primary syntactic function of nouns is to receive case from regents. Nouns can occur as the dependents of verbs, prepositions, and nouns. Noun-dependent order marks five different case forms: NOMINATIVE, ACCUSATIVE, DATIVE, LOCATIVE, and PREDICATIVE. These case forms correspond to case relations.

Dependency	Case Form	Case Relation
Noun-Verb	Nom	AGT, PAT
Verb-Noun	Acc	COR, LOC, MNS, PAT ⁴³
	Dat	COR
Preposition-Noun	Lcv	LOC, COR
Noun-Noun	Prv	COR, LOC, MNS, [prdc]

Table 38: Pacoh noun case-related dependencies

Table 38 shows the dependency relationships (e.g., noun-verb), possible case forms marked by these orders, and possible case relations assigned to nouns in those case forms. Stemmas in Figure 26 show these relationships.

⁴³ The correspondence between the Locative case form and the LOC and MNS case relations is not typical in Lexicase descriptions. This approach is based on the view that case forms are relatively superficial, based on word class, while case relations are assigned by verbs.

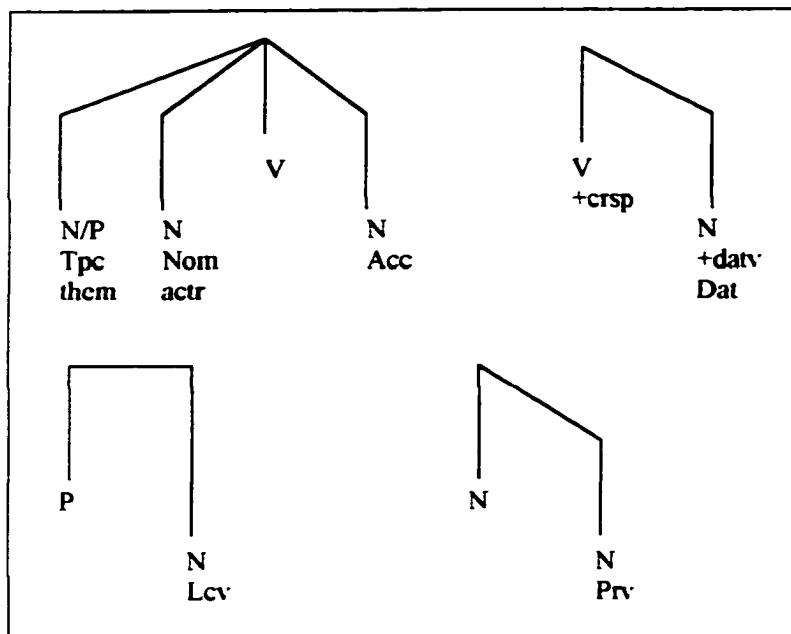


Figure 26: Stemmas of nouns in case-related positions

Figure 26 also indicates certain subclasses, namely locative prepositions, dative prepositions, and dative nouns, as overt markers of case forms. Such relationships are described in more detail in the relevant subsections. For special attention to the noun-to-noun dependencies, see section 7.3.2.3.

7.3.2.2 *Noun-to-Noun Dependencies versus Semantically-Specialized Nouns*

Not all supposed sequences of nouns are noun phrases. Some are single words formed through common Word-Formation Strategies (WFSs), in this case, semantically-specialized noun word-formation (see section 11.2.1.4). Recognizing this WFS solves the otherwise odd problem of ordering verbs after these nouns, rather than before them. Consider S80 and the two hypothesized syntactic representations. S80a shows the word ‘Vietnam’ as a predicate noun modifier, whereas in S80b, it is part of the noun. The fact

that the stative verb follows the phonological form /jʉən/ is thus simply a modifier outside of a sort of compound noun.

S 80: [prdc] versus ‘compound’

(a) ‘A new Vietnamese-style house.’

duŋ	jʉən	təm.məj
house	Vietnam	new
N	N	V

(b) ‘A new Vietnamese-style house’

duŋ-jʉən	təm.məj
Vietnamese house	new
N	V

A simple parallel is the pattern of words in English with the word-final ...stor], such as ‘bookstore’, ‘drugstore’, and ‘grocery store’, each of which are single lexical items. None can take modifiers in the middle of those words (e.g., ‘new bookstore’ and not ‘*book new store’). These words are simply the result of analogies with other sets of words. Such words are sometimes considered ‘compounds’, as discussed in section 11.2.1.4.

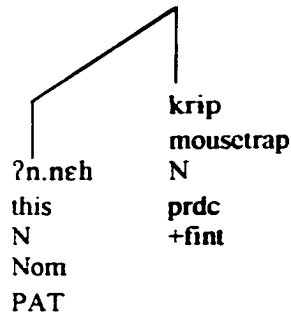
7.3.2.3 *Noun-to-Noun Dependencies and Case*

Pacoh nouns may be both predicates and non-predicates and combine to form either finite clauses or noun phrases. As predicates, they may form a finite clause and take another noun as a NOMINATIVE noun in an equational construction.⁴⁴ In this type of construction, that is the only case relation that can apply.

⁴⁴ Pacoh does not use a copula verb to form equational constructions, as discussed in section 10.4.2. Nominal Extension Verbs.

S 81: Predicate nouns in Pacoh and English

'This is a mousetrap.'



When non-predicate nouns serve as dependents of nouns, noun phrases are formed. Restrictions on the kinds of noun subclasses that can combine vary. Four case relations apply to the dependents in these constructions: COR, LOC, MNS, and [prdc]. Below, there are four tables that show the possible combinations of nouns based on the case relation that the dependent noun bears. Regents are listed down the sides and dependents along the top. Each of these tables is followed by tables containing examples of each kind of relationship.

Table 39 shows 15 possible noun-to-noun combinations involving the feature [prdc]. Pronominal nouns, with the exception of social pronouns (as indicated by [+socl] in this and subsequent tables), cannot be the dependents of either numeral nouns or other pronominal nouns. Demonstrative nouns can be the [prdc] adjuncts of common nouns.

DEP \ REG	Numeral	Common	Pronominal	Unit	Relator	Scope
Numeral	-	-	[+socl]	prdc	-	-
Common	-	- ⁴⁵	[+dmns]	-	prdc	-
Pronoun	-	-	-	-	prdc	-
Unit	-	prdc	-	-	prdc	-
Relator	prdc	prdc	-	-	-	-
Scope	prdc	prdc	prdc	prdc	prdc	-

Table 39: Primary noun subcategory combinations bearing the feature [prdc]

The feature [prdc] tends to mark descriptive relative clauses, as in ‘the X that is Y’ or ‘the X that is Y-like’. Examples of each are provided in Table 40. The literal glosses provide odd but representative translations of the predicative meanings. All combinations are syntactically acceptable, though not all are common or pragmatically acceptable.

COMBINATION	EXAMPLE	INTERLINEAR	LITERAL GLOSS
numeral-social	ba:r ?a.ca:j	two-you male	the two who are males
numeral-unit	ba:r lam	two-unit	the two which are units
common-relator	ti.kuəj ?ən ?ɔ:	person-that-good	the person who is that which is good
pronoun-relator	dɔ: ?ən ?ɔ:	3s-that-good	he who is that which is good
unit-relator	lam ?ən ?ɔ:	unit-that-good	the unit that is that which is good
relator-numeral	?ən ba:r	that-two	that which is two (i.e., 2 nd)
relator-common	?ən juən	that-Vietnamese	that which is Vietnamese
scope-numeral	ŋɛ? ba:r	all-two	all of that which are those two
scope-common	ŋɛ? pɛ?	all-banana	all of that which is the banana
scope-pronominal	ŋɛ? ?a.pɛ:	all-they	all of that which is them
scope-unit	ŋɛ? lam	all-unit	all of that which is a unit
scope-relator	ŋɛ? ?ən ?ɔ:	all-that-good	all of that which is that which is good

Table 40: Examples of noun-to-noun combinations with the feature [prdc]

⁴⁵ There is no slot here in the slot for common-common combination. The view taken here is that what are generally considered to be series of common nouns may in fact be single nouns. See section 11.2 for more discussion on word-formation processes involving what are sometimes called compound nouns.

Thus, in Pacoh, the feature [prdc] can be assigned to common nouns,⁴⁶ extension relator nouns, and demonstrative pronominal nouns.

S 82: Nouns bearing the feature [prdc]

‘That old man’

ʔn.kə:p	ʔən	ʔiəw ²	ʔŋ.koh
1ndex	2ndex	3ndex	4ndex
man	that	old	that
N	N	V	N
2([Prv])	+rltr		+dmns
4([Prv])	Prv		Prv
	[prdc]		[prdc]
	+xtns		
	3[prdc]		

Table 41 shows 13 possible noun-to-noun combinations involving the COR case relation. It shows that common nouns, pronouns, unit nouns, relator nouns, and scope nouns may serve as dependents to common nouns, unit nouns, and scope nouns (restrictions are dealt with in respective subsections).

DEP \ REG	Numeral	Common	Pronominal	Unit	Relator	Scope
Numeral	-	-	-	-	-	-
Common	-	COR	COR	COR	-	COR
Pronominal	-	-	-	-	-	-
Unit	-	COR	COR	COR	COR	COR
Relator	-	-	-	-	-	-
Scope	-	COR	COR	COR	COR	-

Table 41: Major noun subcategory combinations bearing the COR case relation

The COR case relation in noun-to-noun phrases marks possession, such as ‘the X of the Y’ or ‘the X which is possessed by Y’. Examples of each are provided in Table 42.

Again, the examples are syntactically acceptable but may or may not require pragmatically acceptable discourse situations to provide otherwise missing information

(e.g., classifier unit nouns do not require their selected dependent nouns in situations where the selected noun is already clear in the linguistic or physical context).

COMBINATION	EXAMPLE	INTERLINEAR	LITERAL GLOSS
common-common	duŋ ʔn.lɔ:ŋ	door-house	the door of the house
common-pronominal	duŋ dɔ:	house-3s	the house of him
common-unit	duŋ lam	house-unit	the house of a person
common-relator	duŋ ʔn.dɔ: ʔa.ca:j	house-of-he	the house of him
common-scope	duŋ ŋɛ?	house-all	the house of all
unit-common	lam ʔa.cɔ:	unit-dog	that unit of dog's
unit-pronominal	lam dɔ:	unit-3s	that unit of his
unit-unit	lam lam ʔŋ.koh	unit-unit-that	that unit of that unit
unit-relator	lam ʔn.dɔ: ʔa.ca:j	unit-of-he	the unit of him
unit-scope	lam ŋɛ?	unit-all	the unit of all
scope-common	ŋɛ? duŋ	all-house	all of that of the house
scope-pronominal	ŋɛ? ʔa.pɛ:	all-they	all of that which is theirs
scope-unit	ŋɛ? lam	all-unit	all of which is the unit's
scope-relator	ŋɛ? ʔn.dɔ: ʔa.ca:j	all-of-he	all of his

Table 42: Examples of noun-to-noun combinations with the COR case relation

Typically, common and pronoun pronominal nouns can be assigned this case relation, as in the two following examples.

S 83: Nouns in the COR case relation

(a) 'My older brother'

ʔa.ca:j	ki:
1ndex	2ndex
elder brother	I
N	N
2([Prv])	+prmm
	+prmn
	Prv
	COR

(b) 'That goat's mother'

ʔa.ʔi:	ʔm.be:ʔ	ʔŋ.koh
1ndex	2ndex	3ndex
mother	goat	that
N	N	N
2([Prv])	-unit	+prmm
3([Prv])	Prv	+dmns
2[COR]	COR	Prv
3[prdc]		prdc

Tables 43 and 44 show three possible noun-to-noun combinations involving the LOC and MNS case relations. The number of cooccurrences is limited since only relator

⁴⁶ The exact boundary between syntax and word-formation in a series of common nouns is not yet clear.

nouns can take the LOC and MNS case relations in noun phrases, and only common, unit, and scope nouns may serve as regents of relator nouns.

DEP \ REG	Numeral	Common	Pronoun	Unit	Relator, +lctn	Scope
Numeral	-	-	-	-	-	-
Common	-	-	-	-	LOC	-
Pronominal	-	-	-	-	-	-
Unit	-	-	-	-	LOC	-
Relator	-	-	-	-	-	-
Scope	-	-	-	-	LOC	-

Table 43: Major noun subcategory combinations bearing the LOC case relation

DEP \ REG	Numeral	Common	Pronoun	Unit	Relator, +nstr	Scope
Numeral	-	-	-	-	-	-
Common	-	-	-	-	MNS	-
Pronominal	-	-	-	-	-	-
Unit	-	-	-	-	MNS	-
Relator	-	-	-	-	-	-
Scope	-	-	-	-	MNS	-

Table 44: Major noun subcategory combinations bearing the MNS case relation

See section 7.7.2.3 for examples of those with the MNS case. LOC adjuncts indicate orientation. Only nouns with the inherent feature [+lctn] can serve in this case relation position.

S 84: Nouns bearing the LOC case relation

(a) 'the book on the table'

ʃa:c	ʔi.niəŋ	ki.ba:n
1ndex	2ndex	3ndex
book	top	table
N	N	N
2([Prv])	+rltr	-unit
2[LOC]	+lctn	-lctn
	Prv	Prv
	LOC	COR

(b) 'the *sing* trap for mice'

ʃiŋ	ʔa.do:	ʔa.bil
1ndex	2ndex	3ndex
<i>sing</i> trap	for	mouse
N	N	N
2([Prv])	+rltr	-unit
2[LOC]	+lctn	-lctn
	Prv	Prv
	LOC	prdc

All the combinations of primary and secondary noun subcategories are explained in the section for each respective category.

7.3.2.4 *Nouns as Predicates*

Predicate nouns can serve as root predicates of sentences. In Pacoh, noun predicates as the regents of finite clauses are common, while copula-like verbs have been used only recently through contact with Vietnamese.⁴⁷ Predicate nouns can express two types of meanings: existential and equational (marked as [+exst] and [+eqtn]).

Equational noun predicates are the least marked types. In Pacoh, an existential noun predicate typically takes a theme noun adjunct in the TOPIC case form, which can be linked to the allowed LOC adjunct of a verb. Such a sentence expresses the existence of the noun in a certain location, similar to the occurrence of LOC adjuncts with impersonal verbs.

S 85: Equational predicate noun

‘This is your house.’

?n.nɛh	duŋ	maj
this	house	2s
1ndex	2ndex	3ndex
N	N	N
Nom	prdc	prdc
PAT	+root	Prv
	+eqtn	COR
	1[Nom]	
	1[PAT]	

⁴⁷ That this is a recent phenomenon is an only partially substantiated claim. It is based on the fact that the Watsons’ materials did not contain examples of the use of the Pacoh extension verb *la*: ‘to be,’ which is clearly a Vietnamese loan. My own impression was that it was used less by older Pacoh than younger Pacoh, but further evidence is needed to determine this conclusively.

S 86: Existence predicate noun

‘There are three people in that house.’

kəl.luŋ	duŋ	ʔŋ.koh	pe:	ti.ku:əj
inside	house	that	three	people
1ndex	2ndex	3ndex	4ndex	5ndex
N	N	N	N	N
Tpc	prdc	prdc	prdc	prdc
them	Prv	Prv	+root	Prv
	COR	prdc	+exst	prdc
			l[them]	
			l[LOC]	

Currently, there are no formal means of determining how nouns are assigned these features.

7.4 COMMON NOUNS: [-UNIT]

Common nouns are the least marked of all noun subcategories. Under the primary noun subcategorization in section 7.2, common nouns are not marked plus for any feature and are indicated in formal notation by the feature [-unit]. Having the feature [-unit], they cannot be the direct dependents of numeral nouns, which require [+unit] nouns. Unit nouns impose semantic and grammatical restrictions on the possible subcategories of common nouns they can take as dependents (e.g., [±mass], [±humn], or nouns with specific physical properties, such as length, roundness, etc.). Common nouns can be subcategorized through testing of unit-noun-plus-common-noun combinations and the patterns of selectional restrictions. As regents, Pacoh common nouns may take as dependents descriptive modifiers (such as stative verbs and extension relator nouns), markers of definiteness and location (such as demonstrative and locational relator nouns), and indication of possession (nouns in the COR case, such as general pronouns, common nouns, relator nouns, etc.). These dependent elements are ordered in accordance with

linear precedence rules and are formally accounted for in the following subsection. The next subsection briefly characterizes common nouns, dependency relationships, and the subcategories of common nouns.

7.4.1 Characterization of Common Nouns

Though having the potential to refer to an endless range of semantic fields, common nouns still share the same general syntactic characteristics of nouns. They may occur in a variety of case-marked positions as the dependents of verbs, prepositions, and other nouns. They can take verbs and nouns as right-branching dependents.

Common nouns also share a number of syntactic features that differ from those of other noun subcategories. They have a limited distribution as dependents and regents, as discussed in sections 7.3.1 and 7.3.2. Common nouns cannot precede unit nouns, and thus are not numeral nouns. Similarly, they cannot be the dependents of numeral nouns, distinguishing them from unit nouns. They can assign their noun dependents the COR case relation, differentiating them from pronominal nouns. They need not be the first elements in noun phrases, as are scope nouns.

In addition to these differences, common nouns are underspecified for plurality and definiteness, unlike numeral nouns and subcategories of pronominal nouns. Instead, common nouns may cooccur with other words that provide such features, or they may be gained in a discourse context. Plurality is not carried by common nouns, as is demonstrated in S87a and b. The reciprocal verb requires a plural ‘subject’, which is clearly marked in S87b but not S87a. S87b is fully acceptable, while S87a is acceptable only in discourse situations where plurality has already been indicated.

S 87: Common nouns as [+dfnt]

(a) 'The dogs followed each other.'

? ʔa.cɔ:	tər.klɛ:ŋ
dog	follow (recip.)
N	V

(b) 'The dogs followed each other.'

ba:r	lam	?a.cɔ:	tər.klɛ:ŋ
two	unit	dog	follow (recip.)
N	N	N	V

Outside of an established discourse context or without the use of demonstratives or genitive nouns, common nouns refer to all the members of that set as an indefinite mass rather than as definite countable units. Common nouns are underspecified for definiteness and are definite only in context or through the use of demonstratives.

S 88: Common nouns with demonstratives(a) 'Dogs are good.'
'This dog is good.'

?a.cɔ:	?ɔ:	li:
dog	good	very
N	V	Adv

(b) '*Dogs are good.'
'This dog is good.'

?a.cɔ:	?n.nɛh	?ɔ:	li:
dog	this	good	very
N	N	V	Adv

In S90a, both glosses are acceptable semantic correlates since definiteness is underspecified, while in S91b, only the second gloss, which indicates definiteness, is acceptable since the demonstrative has provided indication of definiteness.

One final issue to consider is the status of common nouns in noun phrases. In this analysis, common nouns are not the 'heads' of noun phrases. Though it could be argued that they constitute the semantic 'heads' of noun phrases, syntactically, this is not so. The way to demonstrate this is through the combination of unit nouns (especially classifier unit nouns) and common nouns. First, combinations of numeral nouns and unit nouns can occur without common noun dependents; common noun dependents of unit nouns are optional in discourse contexts in which those common nouns are clearly understood by the speaker(s). Next, the relationship between unit nouns and their

cooccurring common nouns can be viewed as a kind of grammatical agreement. In S89, (c) is considered unacceptable to native Pacoh speakers.

S 89: Test for unit noun versus common noun headedness

- (a) ba:r lam ?a.cə: (two-unit-dog)
- (b) ba:r lam ti.kuəj (two-unit-person)
- (c) *ba:r na? ?a.cə: (two-unit-dog)
- (d) ba:r na? ti.kuəj (two-unit-person)

Considering the common noun the ‘head’ would mean that *ti.kuəj* ‘person’ could ‘choose’ either *lam* or *na?* as its classifier. What this paradigm suggests is that the person classifier restricts what dependents it can take, while the general classifier *lam* is unrestricted, perhaps underspecified, in what kinds of nouns it may take. Furthermore, in existing data on Pacoh, classifiers do in fact occur without common nouns, which are implied. Classifiers’ semantic scopes are so restricted that common nouns are not always needed in discourse contexts, being semantically redundant. Thus, unit nouns have to be considered the regents of their grammatically selected common nouns, otherwise no means exists in a constrained grammar to account for this distributional pattern.

7.4.2 Common Noun Subcategories

Pacoh common nouns are subcategorized by the features [\pm qntf], [\pm prpr], [\pm mass], and [\pm humn]. There are five primary subcategories: general, human, mass, proper, and semantically-generalized nouns, as shown in Figure 27.

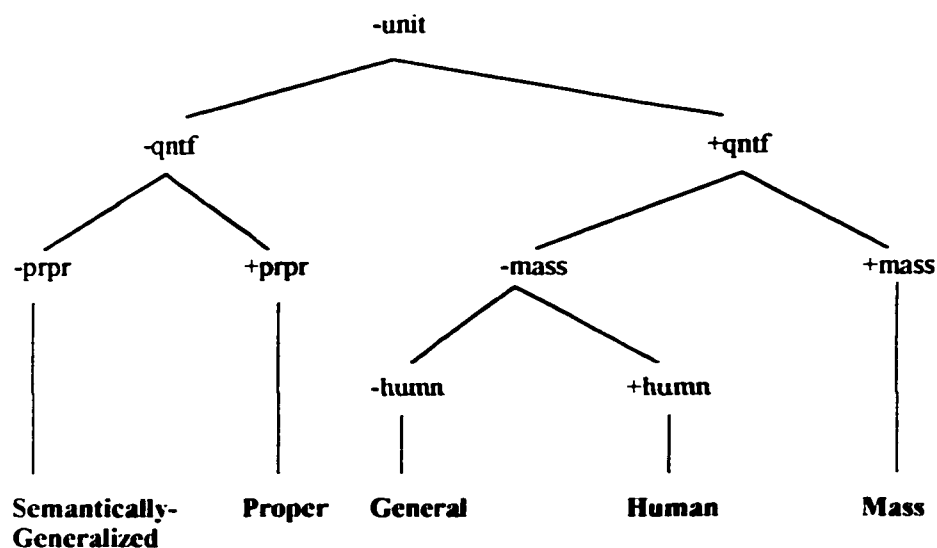


Figure 27: Pacoh common noun subcategorization

Pacoh common nouns are divided into the two primary categories of quantifiable and non-quantifiable. Only quantifiable common nouns serve as dependents of unit nouns. These include human, mass, and general common nouns. Non-quantifiable common nouns include proper nouns and semantically-generalized nouns, neither of which can be dependents of unit nouns. Proper nouns here are names given to non-human nouns, in contrast with human proper pronominal nouns (section 7.6.2.4). Semantically-generalized common nouns (see section 11.2.1.4) are the only common nouns that do not occur as dependents of unit nouns. They are in part distinguished by their function in clause-incorporation, a kind of reduplication in which phonological material from a clause is copied. Mass common nouns serve as the dependents of non-classifier general unit nouns, in which case no grammatical selection is involved (e.g., *pe:* ‘a bottle’, which takes any semantically feasible noun, such as water or seeds). In contrast, non-mass common nouns (human and general) can be the grammatically

selected dependents of classifier unit nouns (e.g., *ʔa.lɔ:ŋ*, a classifier unit noun that only takes tree dependents). Human common nouns supply the feature [+humn] required by [+prsn] nouns and conjunctions. General common nouns are the least restricted in their dependencies with unit nouns. Each primary category is further described and subcategorized in the following subsections.

7.4.2.1 *General Common Nouns*

General common nouns are the least marked of all nouns in having the fewest primary and secondary subcategorizing features and in constituting an open class of words covering the widest range of semantic fields. As a subclass, these nouns have the fewest syntactic distributional restrictions, though other semantic restrictions apply to individual words and semantic word classes. These nouns can occur freely in most case-marked positions and have no overarching restrictions on the kinds of dependents they can take (other than those restrictions discussed in section 7.3). General common nouns can be further divided into time, selected, and non-selected common nouns by the features [±slct] and [±time].

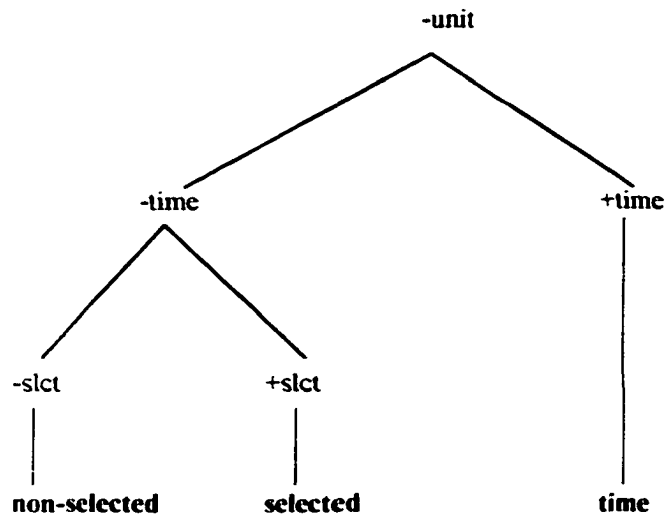


Figure 28: Subcategorization of general common nouns

General common nouns are subcategorized by the feature [\pm slct] (selected).

Table 59 in section 7.9.2.1 contains a list of classifier unit nouns and their selectional restrictions for those common nouns that are marked [+slct]. Non-selected general common nouns can be the dependents of the general classifier unit noun *lam*. Selected general common nouns cannot, and instead may be the dependents of other classifier unit nouns that impose selectional restrictions on their possible dependents.

Gloss	Form	Unit	Group
bananas	peʔ	+slct, +rond	+plnt
bird	?a.ceʔ	-slct	+anmt
coconut	tuəŋ	+slct, +rond	+plnt
dog	?a.cə:	-slct	+anmt
house	duŋ	-slct	-
person	ti.kuəj _i	+slct, +humn	+humn
rice, unhusked	trə:	+slct, +rond	-
star	pən.tə:r	+slct, +rond	-
string	?n.tar	+slct, +smln	-
student	hə:k-fjŋ	+slct, +humn	+humn
washcloth	k ^h an	+slct, +shet	-
writing utensil	?r.viət	+slct, +smln	-

Table 45: List of common nouns and associated features

Table 45 specifies the features of each word listed. Most are selected [+slct], though some are not. Those that are selected common nouns have additional features that permit classifier nouns to choose them. For classifier unit nouns referring to groups, semantic features are sometimes required by certain unit nouns, as listed in the table.

Common nouns also include a class of non-unit time nouns. Being non-unit, they cannot be the dependents of numeral nouns, though there are time unit nouns (section 7.9.2.3). Having semantic features marking number, they cannot be dependents in quantified noun phrases. These nouns refer to the past or future by number of days or years (see section 11.2.1.5 for a complete listing).

S 90: Non-unit time nouns

'He arrived five days ago.'

ʔi.ŋaj-ʔn.tro:ŋ	dɔ:	toʔ	ʔn.nɛh
five days ago	3s	arrive	here
N	N	V	N
+time	+prnn	+lctv	+dmns
	PAT		LOC

A particular Word-Formation Strategy derives these words from a combination of phonological elements related to the words for 'day' or 'year', the numerals 'two' to 'ten', and another substring between those two elements. They cannot be the dependents of numeral nouns nor can they take demonstratives.

7.4.2.2 Human Common Nouns

Human common nouns are marked [+humn] and thus can serve as dependents of person classifier unit nouns and person conjunctions.

S 91: Human common nouns

(a) 'How many children?'

li.mɔ:	na?	ʔa.kaj
how many	unit	children
Index	2ndex	3ndex
N	N	N
+nmrl	+unit	-unit
2(+unit)	+prsn	+humn
	3(+humn)	

(b) 'Men and women.'

ʔŋ.koŋ	ʔa.ŋa:	ʔŋ.kan
man	and	woman
Index	2ndex	3ndex
N	Cnjc	N
+prmn	+prsn	+prmn
	1(+humn)	
	3(+humn)	

Nouns in this category include words within various semantic fields having to do with humans, such as family relations, age groups, professions, and ethnic groups.

Gloss	Form
Vietnamese	juən
American	mi:ʔ
Hmong	ha.mɔ:ŋ
mother	ʔa.ʔi:
children	ʔa.kaj
teacher	tʰəj-jaw

Table 46: Human common nouns**7.4.2.3 Mass Common Nouns**

Mass common nouns are used as the dependents of non-classifier general unit nouns (such as *ti.ŋa:n* 'bowl', *ba:w* 'bag', or *ʔa.te:hi* 'basket') and never occur as dependents of classifier unit nouns, the latter of which grammatically select for certain properties (section 7.9.2.2). Nouns in this category are semantically mass-like, corresponding to non-count nouns in English.

S 92: Mass common nouns

'He brought two bottles of water.'

do:	ki:	do:ŋ	ba:r	bɛ:	da:ʔ
2s	1s	bring	two	bottle	water
N	N	V	N	N	N
			+nmrl	+unit	-unit
				-clsf	+mass

There is a derivational relationship between some mass and non-mass nouns. For example, *pe?*₁ 'banana' is a [-mass] noun, which may be the dependent of a general unit noun like 'basket', while *pe?*₂ 'banana' may be the dependent of the general classifier unit noun *lam*.

S 93: Mass versus non-mass common nouns

(a) 'A banana.'			(b) 'A basket of bananas.'		
<i>mɔ:j</i>	<i>lam</i>	<i>pe:?</i> ₁	<i>mɔ:j</i>	<i>ʔa.te:h</i>	<i>pe:?</i> ₂
one	unit	banana	one	basket	banana
N	N	N	N	N	N
+nmrl	+unit	-unit	+nmrl	+unit	-unit
	+clsf	-mass		-clsf	+mass
		prdc			

The use of the subscripts highlights the difference in lexical status of these words. This may also demonstrate that the noun dependents in this case are interpreted as having different features.

7.4.2.4 Quote-Derived Nouns

There is a class of nouns derived from utterances that bears the COR case as dependents of quote verbs.

S 94: Quote simple correspondent verb

'He called. 'Hey, Ba! Let's go study.''

<i>dɔ:</i>	<i>pa.fɔ:l</i>	<i>ba:-ʔə:j-po:k-hɔ:k</i>
3s	call	Hey, Ba! Let's go study.
1ndex	2ndex	3ndex
N	V	N
	-trns	+quot
	+crsp	Acc
	+spch	COR
	3([+quot])	
	3[COR]	

These nouns are derived through the ‘Camel-Belching Rule’, in which any sound can become a noun.⁴⁸

DR-N1 [X] : $\left[\begin{array}{c} [N] \\ [+quot] \end{array} \right]$

These nouns are marked [+quot], though not all nouns derived this way need be.

7.4.2.5 *Proper Common Nouns*

Proper common nouns in Pacoh include primarily the given names of places and other non-human nouns. As non-quantifiable nouns, they never occur as dependents of unit nouns in quantified noun phrases. Proper pronominal nouns, unlike proper common nouns, have human (or at least animate) reference and carry pronominal features related to person. The few examples in the data are names of local areas, such as the district *?a.liəj* and the city of *hwe?*.

7.4.2.6 *Semantically-Generalized Nouns*

Semantically-generalized nouns constitute a class of polysyllabic words that can participate in the reduplicative word-forming strategy of clause-incorporation, as discussed in section 11.2.4.1. They could be viewed as ‘lexical compounds’, but are simply single words. The nouns contain phonological material that resembles two or more words that overlap in semantic scope and refer to a shared general semantic scope. For example, *jəw-ba:j* ‘friends in general’ shares phonological material with two words

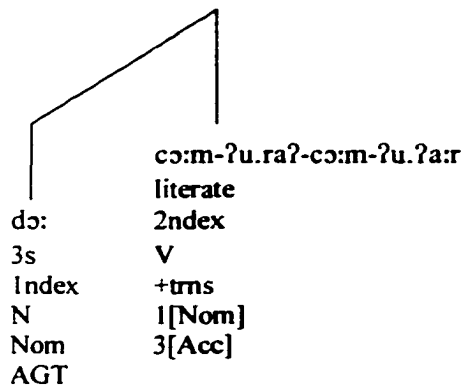
⁴⁸ Such a rule was posited by Taylor (1971) who called the rule the ‘Camel Belching Rule,’ acknowledging that any sound—human, animal, or otherwise—can serve the function of a noun.

that mean ‘friend’, and *duŋ-ve:l* ‘society’ consists of phonetic forms for ‘house’ and ‘village’.

In reduplicative clause-incorporation, these nouns appear separated by phonological material that is identical to some portion of the phrase in which the ‘splittable compound’ is a dependent. Phonologically copied material can include a verb, preposition, and noun dependents. Data on this phenomenon in Pacoh is primarily limited to R. Watson (1966 and 1979).

S 95: Separable common noun

‘He’s literate.’



In S95, the verb is transitive, taking an Acc-PAT noun. In this case, the noun is the generalized reduplicant form *?u.ra?-?u.?ar* ‘writing’.

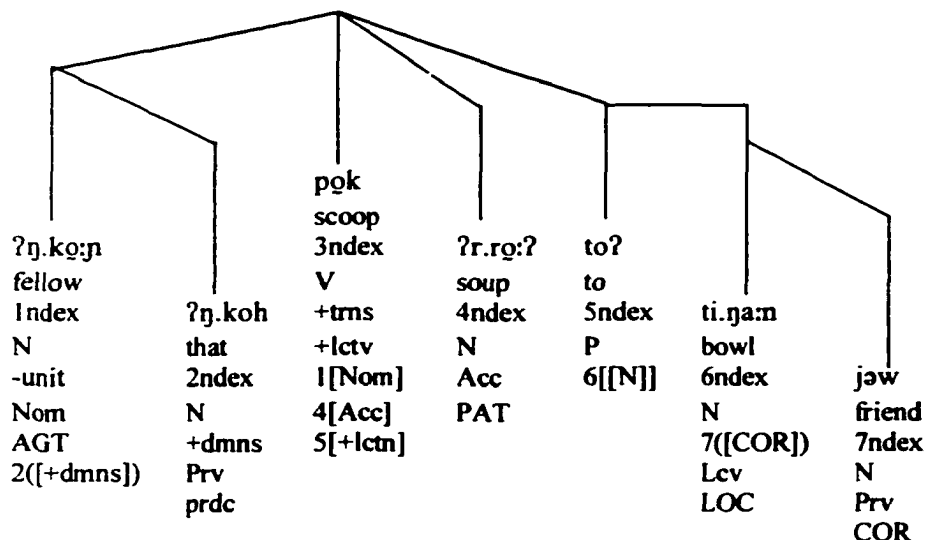
These words are considered to constitute a distinct noun subclass in part due to their WFS characteristics, but there are other syntactic aspects as well. Such words do not occur as dependents of numeral nouns or unit nouns nor do they take other words as dependents. This lack of number and definiteness emphasizes the generic semantic nature of these words.

7.4.3 Common Noun Dependency Relationships

As dependents, common nouns occur as dependents of verbs, prepositions, and nouns in various normal case-marked positions. Common nouns can occur in the TOPIC, NOMINATIVE, DATIVE, LOCATIVE, and ACCUSATIVE positions as dependents of verbs. They occur as the complements of prepositions, which assist nouns in assigning them the LOC and COR case relations. These nouns may also be the predicate dependents of other nouns, always in the PREDICATIVE case form and bearing the feature [prdc] or the COR case relation.

S 96: Sample of common noun in various case-marked positions

'The fellow scooped the soup into the friend's bowl.'



As regents, common nouns can take other common nouns, pronominal nouns, and relator nouns as dependents. All common nouns assign their noun adjuncts different kinds of case relations, as each redundancy rule indicates.

RR-N8 [N, -unit] → $\left[\begin{array}{l} ?([\text{prdc}]) \\ ?([\text{LOC}]) \\ ?([\text{COR}]) \\ ?([\text{MNS}]) \end{array} \right]$

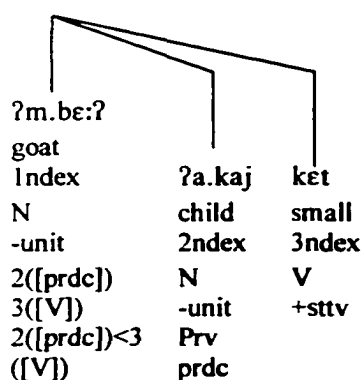
As for the interlinear ordering of dependents, common nouns take verbs before other nouns, regardless of their case relation.⁴⁹ In order, there is [prdc], COR, and LOC. These are indicated by the following redundancy rules, restated from section 7.3.1.

RR-N5 [N] → [?([V])<?([N])]
 RR-N6a [±unit] → [?([prdc])<?([COR])]
 RR-N6b [±unit] → [?([prdc])<?([LOC])]
 RR-N7 [±unit] → [@<?([prdc])<?([LOC])]

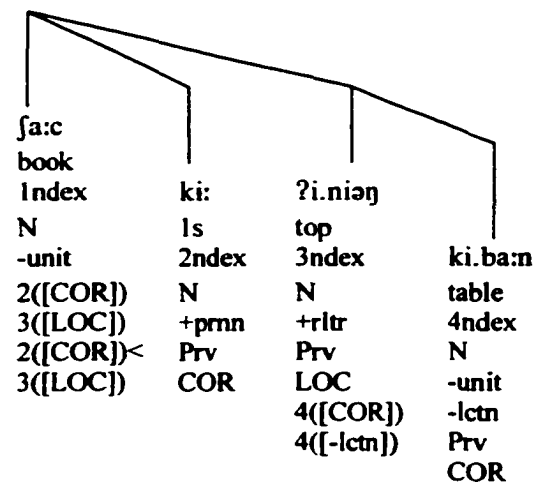
These linear precedence rules are demonstrated in S97.

S 97: Sample of common noun in various case-marked positions

(a) 'The small goat.'



(b) 'The book of mine on the table.'



⁴⁹The exact boundary between syntax and word-formation in series of common nouns is not yet clear.

7.5 NUMERAL NOUNS

Pacoh numeral nouns take only unit nouns as dependents. These numeral nouns constitute four primary subcategories: definite numeral nouns (both singular and plural); an interrogative numeral noun (i.e., ‘how much/many’); and two kinds of indefinite numeral nouns, namely degree and general indefinite numeral nouns. Pacoh numeral nouns, as nouns, have the ability to stand alone in case-marked positions and function as regents in quantified noun-phrases (i.e., noun-phrases containing nouns marked with the feature [+unit], such as classifier unit nouns or time unit nouns). Having the contextual requirement [?(+unit)], numeral nouns can take only unit noun complements, the primary characteristic that all these nouns share. This subsection supports the claim that numeral nouns belong to a distinct subcategory of nouns, describes the primary subcategories of numeral nouns, and discusses dependency relationships of numeral nouns, with focus on their occurrence with unit nouns (classifier, measure unit nouns, etc.) and ordinal numeral constructions.

7.5.1 Characterization of Numeral Nouns

In fieldwork data, Pacoh numeral nouns were used in noun phrases with unit nouns the vast majority of the time; that is, they rarely appear without dependents. The exceptions include their occurrence in ordinal constructions and certain cases where numerals served as the semantic focus in case-marked positions, in which case, they had no dependents. The predominance of numeral-unit sequences, rather than the exceptions, suggests that unit nouns are generally required, as indicated by the contextual feature of numeral nouns, [?(+unit)], and formalized in RR-N8.

RR-N8 [N, +nmrl] → [?(+unit)]

Numeral nouns without cooccurring unit nouns constitute a special subcategory. When exactly unit nouns are not needed by numeral nouns can only be answered after more data is collected, as discussed in section 7.5.3.4.

S98, S99, and S100 show examples of three different kinds of numeral nouns with unit nouns. In each case, the numeral nouns take some kind of unit noun, which in turn takes another non-unit/common noun as a dependent.

S 98: Definite numeral noun as the highest regent in a nominal predicate

‘There are three people at home, a mother and children.’

ʔat	daŋ	duŋ	ba:r	naʔ	ʔa.ʔi:	ʔa.kaj
at/in/on	side	home	three	clsf/human	mother	children
Index	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex
P	N	N	N	N	N	N
-xtns	+rltr	-unit	+nmrl	+clsf	-unit	-unit
+lctv	+lctn	-lctn	+dfnt	+unit	+humn	+humn
2[+lctn]	3[-unit]		5[+unit]	+prsn		
	3[-lctn]		prdc	6[+humn]		
				7[+humn]		

S 99: Non-interrogative indefinite numeral noun in the PAT case

‘There are many people that can’t speak the Pacoh language.’

vi:	kliŋ	ti.kuəj	ʔən	ləjʔ	ho:j	to:ŋ	ka:ŋ	pa.kəh
exist	many	human	that	not	able	speak	language	Pacoh
Index	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex	9ndex
V	N	N	N	Adv	V	V	N	N
-trns	+nmrl	-clsf	+rltr	+ngtn	+xtns	-trns	-unit	-unit
+mprs	-dfnt	+unit	+xtns		+abl	+crsp	-prpr	-prpr
2[PAT]	3[+unit]	?(+prsn)	6[V]		5([+ngtn])	-root	Acc	prdc
	PAT	+prsn			7([V])	8[N]	COR	
	Acc					8[COR]	9([N])	

S 100: Interrogative numeral noun as head of noun phrase in ACCUSATIVE case

‘How many bottles were you able to buy?’

ʔa.ca:j	bo:n	pləj	li.mə:	bɛ:	ʔa.riəw
you-older male	able	buy	how many	bottle	liquor
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	V	N	N	N
+prnm	+xtns	+trns	+nmrl	+unit	-unit
+socl	3[V]	4[PAT]	+ntrg	6([N])	
+unit	1[Nom]	1[AGT]	5[+unit]		
Nom			Acc		
AGT			PAT		

Evidence shows that numerals in Pacoh are nouns, and are not adjectives, word-initial forms, or a part of speech besides the eight used in Lexicase. First, they can occur as bare noun phrases, as in S102 below, so at least in those cases, they are not word-initial substrings.

S 101: Numeral noun as a predicate

‘It’s not 50,000.’

ʔi:h	ʃo:ŋ-cit-ŋi:n
not be	fifty thousand
1ndex	2ndex
V	N
+xtns	prdc
+ngtn	
+nmnl	
2[N]	
2[prdc]	

As is the case with other nouns, Pacoh numeral nouns may occur in case-marked positions as dependents of verbs, prepositions, and other nouns. As the highest regents in noun phrases, numeral nouns may occur in the NOMINATIVE and ACCUSATIVE case forms. They can occur as complements in linked source and goal prepositional phrases, as in S102.

S 102: Numeral noun in prepositional phrase

‘Each day one sets from five to ten tube traps.’

mɔːj	ʔi.ŋaj	puəh	tɛː	ʃoŋ	toʔ	mu.cit	pəl.loː
one	day	set	from	five	to	ten	tube-trap
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex
N	N	V	P	N	P	N	N
+nmrl	+unit	+trns	+sorc	+nmrl	+goal	+nmrl	+unit
	+spct			8[+unit]		8[+unit]	

Another aspect that demonstrates the status of Pacoh numerals as nouns is their lack of phonological fusion. Before unit nouns, numeral nouns do not show significant phonological reduction. There is a clear case of a substring being derivationally related to the numeral ‘one’. The Pacoh word *mu.lam* ‘one-unit’ corresponds semantically and phonologically to the phrase *mɔːj lam* (one-unit) ‘one unit’, but *baːr lam* ‘two units’ has no corresponding phonologically reduced **bu.lam* that means ‘two units’. A related example is the numeral ‘ten’ *mu.cit*, again having the [mu... substring. No other numerals are related to such substrings. General patterns of word-formation and associated phonological reduction provide no evidence that these are word-initial substrings with unit nouns.

The third argument against considering these to be something other than nouns is that during my own fieldwork, there were some instances of numerals either with what are considered [-unit] nouns as direct dependents or even simply a stative verb dependent and no noun dependent whatsoever (section 7.5.3.4). However, rather than confounding the issue, this furthers the claim that Pacoh numerals are distinct words rather than participants in WFSs since, in those instances, they would then be word-initial substrings shared by common nouns and stative verbs, an unlikely proposition. Overall, the

evidence leans against the notion of numeral as WFS participants and more towards their being distinct lexical units, namely, nouns.

Another possible hypothesis is that numeral nouns in Pacoh are adjectives. However, were the numerals to be adjectives, they would be the only exception to an otherwise completely left-headed noun-phrase structure. This is not an impossible hypothesis, but highly unlikely considering overall Pacoh structure as well as the general typological tendencies of neighboring languages spoken in Southeast Asia.

However, can Pacoh numerals be considered a part of speech separate from the eight of Lexicase? Other studies of Pacoh have appeared to treat numerals and other semantic quantifiers (i.e., *kliŋ* ‘many’, *biəʔ* ‘few’, etc.) as a distinct part of speech. In describing Pacoh numerals, Watson (1976:220) used the term ‘quantifiers’, a category that includes numeral quantifiers and seven other kinds of general quantifiers that were divided according to their distribution and function. Some of those categories match what are in this grammar considered numeral nouns, but some are considered in this grammar to be prepositions,⁵⁰ and others, scope nouns (see section 7.8.1 on scope nouns). ND&P et al. (1986:47) used the Vietnamese term *số từ*, meaning ‘numerals’, and divided that group into six types of unit determiners. Neither Watson nor ND&P claimed that numerals were a subclass of nouns but rather appeared to assume that these formed a distinct category of words, while still highlighting the important role numerals play in noun phrases. Descriptions of other Mon-Khmer languages (Guillon 1976 on Mon, Premssirat 1987 on Khmu, Miller 1964 and Hoang 1986 on Bru) generally contain the

term ‘numerals’, which suggests that those researchers also believe numerals in those languages to be part of a distinct lexical category.

Sak-Humphry’s work on Khmer shows how Khmer numerals are a subclass of nouns (1997, Chapter 9). Sak-Humphry made this claim based on the fact that ‘they have the characteristics of nouns, including the ability to occur as heads of ‘subjects’, ‘objects’, and predicate NPs (*ibid.* 245)’. The ability of Khmer numerals to occur alone in case-marked positions is matched in Pacoh, as seen in S103 and S104.

S 103: Numeral noun as a predicate

‘It’s not 50,000.’ (Speaking of Vietnamese currency)

ʔi:h	ʃo:ŋ-cit-ŋi:n
not-be	fifty-thousand
1index	2index
V	N
+xtns	+nmrl
+ngtn	+dfnt
+nmnl	prdc
2[N]	
2[prdc]	

S 104: Numeral noun in ACCUSATIVE case

‘I have many/much.’

ki:	vi:	kliŋ
I	have	many/much
1index	2index	3index
N	V	N
+prmn	+trns	+nmrl
+nphr	1[AGT]	-dfnt
Nom	3[PAT]	Acc
AGT		PAT

Certain indefinite nouns tended to occur more often without unit noun dependents, as discussed in section 7.5.2.

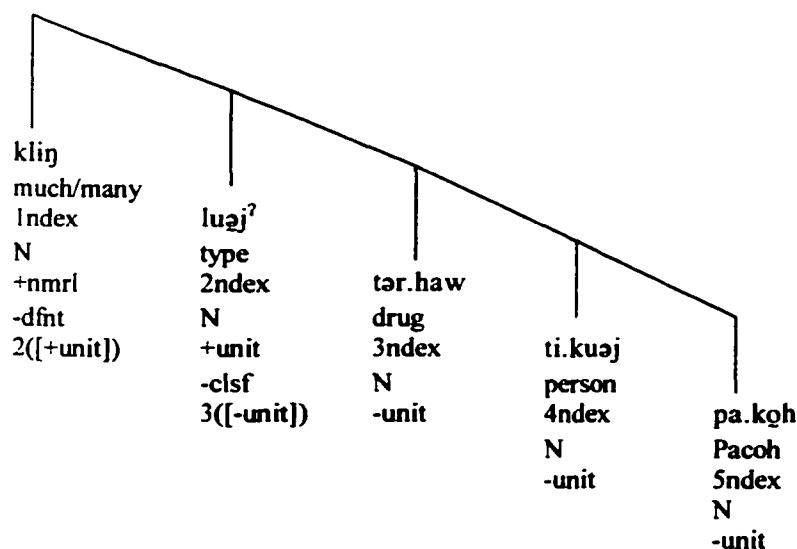
⁵⁰ Such as *klij* ‘more than’ and *mɛʔ.toʔ* ‘almost’. See section 8.2.2, Degree Prepositions.

S103 shows that the numeral 50,000 is a noun since it is negated by the negative extension verb ?ih, which requires a noun dependent. In S104, the numeral is a PAT in the ACCUSATIVE case form. Sentences like S103 are not common in the data. In most cases, numeral nouns cooccur in the data with their unit noun dependents. Still, they exhibit the syntactic behavior of nouns and are classified as such.

This has consequences in the analysis of regent status in noun phrases. Numeral nouns are the most likely candidates for highest regents of numerically quantified noun phrases since the highest regents of noun phrases must be nouns and numerals are nouns. Moreover, Pacoh phrase structure is right-branching (see sections 4.1 and 7.1 for more discussion on linear precedence of noun dependents), so the other noun phrase elements are direct or indirect dependents of the numeral noun, as shown in the stemma for S105.

S 105: Numeral noun as highest regent in a noun phrase

'Many kinds of Pacoh medicines'



In sum, numeral nouns in Pacoh are nouns as seen by their case-related functions, their ability to be bare noun phrases, and their negation by the noun negation verb, *?ih*. Again, the primary characteristic of numerals is their adjacency to a certain class of nouns, namely [+unit] nouns, including unit nouns and social pronominal nouns. Considering numerals the regents of unit nouns accounts for the difference between nouns that do and those that do not appear with immediately preceding numerals. The feature [\pm unit] refers to nouns with the ability to serve as an immediate dependent of a regent numeral noun. As the highest regent of quantified noun phrases, numeral nouns require a [+unit] noun dependent, indicated by the selectional feature [$?(+unit)$].

7.5.2 Numeral Noun Subcategories

Numeral nouns in Pacoh can be divided into four primary subcategories and two additional secondary subcategories, as shown in Figure 29. The features that distinguish the primary subcategories are [\pm dfnt], [\pm ntrg], and [\pm degr]. The two features [\pm sngl]⁵¹ and [\pm prsn] further split two of the primary categories.

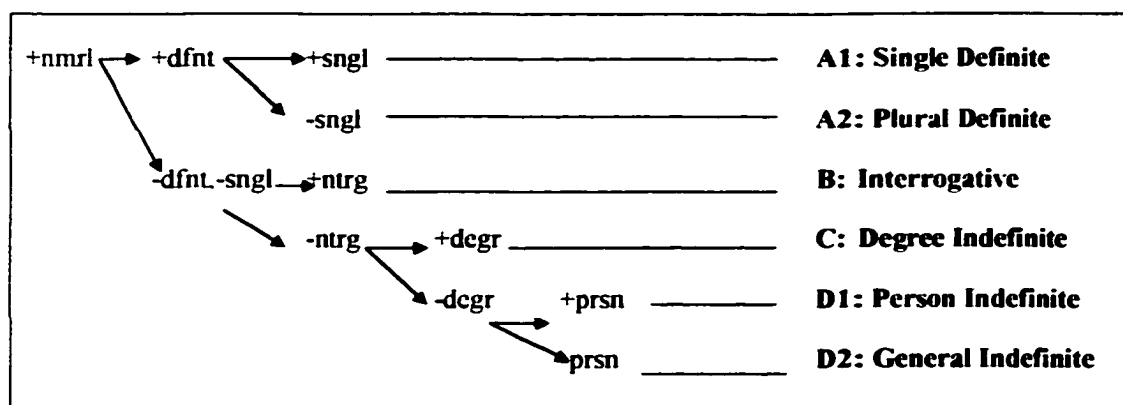


Figure 29: Subcategorization of numeral nouns

Each of these subcategories differs as follows. Definite numerals (e.g., 1, 2, 3, etc.) are the only numerals that distributive scope nouns (e.g., *tal* ‘every’ or *ki:p* ‘each’, section 7.8.2) can take as dependents. Single definite numerals may take only mono-distributive scope nouns as heads, while plural numerals take either mono- or poly-distributive scope nouns. The interrogative numeral *li.mɔ̌:1* ‘how much/many’, which has the feature [+ntrg], cannot cooccur with interrogative sentence particles (e.g., *ləʃʻ* ‘No?’) (see section 9.2.1). Indefinite numerals (e.g., *li.mɔ̌:2* ‘however many/much’) can appear in sentences with interrogative sentence particles. Degree indefinite numerals (e.g., *ʔe:* ‘many’ or *bjəʔ* ‘few’) can take the intensifying adverb *li:* ‘very’. Person indefinite numerals (e.g., *ʔa.pɛ:* ‘a few (persons)’) can only take dependents with the feature [+humn].

Definite numerals differ from the other numeral noun subcategories by being semantically definite and consisting of an open class. In terms of distribution, definite numeral nouns can be dependents of mono-distributive scope nouns (see section 7.8.2.3 for examples) while indefinite numerals cannot. Indefinite numerals are inherently plural and are marked [-sngl]. Plurality can be tested by a numeral’s ability to be the dependent of reciprocal verbs, which have the selectional feature [?(+plrl)], as in S106. All indefinite numeral nouns are inherently plural since they can serve as ‘subjects’ of reciprocal verbs (section 10.3.1.2). All numeral noun subcategories may occur in

⁵¹ Singular is considered the more marked feature, and thus is used as a basic feature for numerals as well as pronouns in this grammar.

exocentric constructions with comparative prepositions, except for human indefinite and interrogative numeral nouns. The next four subsections deal with each numeral noun subcategory.

S 106: Plural interrogative numeral noun

‘How many people talked with each other?’

li.mə:	ti.kuəj	tər.to:m
how many	person	spoke-reciprocal
1ndex	2ndex	3ndex
N	N	V
+nmrl	+unit	-trns
+ntrg	-clsf	l[+plrl]
-dfnt		
-sngl		
2[+unit]		

7.5.2.1 Definite Numeral Nouns

Definite numeral nouns are ordinary cardinal numbers. They can occur with any class of unit nouns (unlike person numeral nouns), may be used in affirmative-negative interrogative sentences (unlike interrogative numeral nouns), and cannot take intensifying adverbs (unlike degree numeral nouns).

S 107: Definite numeral noun

‘Those three baskets of corn.’

pɛ:	?a.tɛh	?a.?im	?ŋ.koh
three	basket	corn	those
1ndex	2ndex	3ndex	4ndex
N	N	N	N
+nmrl	+unit	-unit	+prnn
+dfnt	-clsf	+mass	+dmns
2[+unit]			

Pacoh has a basic set of ten numerals, which serve as the phonological substrings to form the numbers 11 to 99.

Number	Pacoh	Number	Pacoh
one	mɔj	eleven	mu.cit-mɔj
two	ba:r	fifteen	mu.cit-fo:ŋ
three	pɛ:	twenty	ba:r-cit
four	pɯən	thirty	pɛ:-cit
five	fo:ŋ	forty	pɯən-cit
six	tu.pat	fifty-one	fo:ŋ-cit-mɔj
seven	tu.pɔ:l	sixty-seven	tu.pat-cit-ti.kɔl
eight	ti.kɔ:l	one hundred	məh-ku.lam
nine	ti.kiəj ^h	eight hundred	ti.kɔ:l-ku.lam
ten	mu.cit	nine thousand	ti.kiəj-ŋi:n

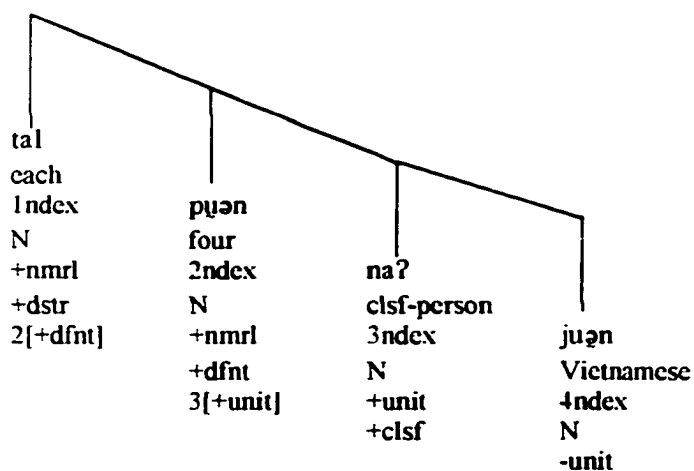
Table 47: Pacoh numeral nouns

The word *mɔj* ‘one’ is the only singular definite numeral. All other definite numerals are semantically plural and can satisfy the requirement of reciprocal verbs by occurring in quantified noun phrases in the ‘subject’ position, as in S106.

Definite numeral nouns differ from the other numeral nouns, which are all indefinite, by their ability to be dependents of the singular distributive scope noun, *tal* ‘each’, as in S108. In contrast, this scope noun cannot take indefinite numerals, as in S109.

S 108: Definite numeral noun as a dependent of a scope noun

‘Each of the four Vietnamese people’



S 109: Ungrammatical scope noun with indefinite numeral

‘Each of however many persons.’

*tal	li.mə:	na?	ti.kuəj
each	however many	unit	person
N	N	N	N
+scop	+nmrl	+unit	-unit
?([+dfnt])	-dfnt		

In sum, definite numerals are semantically definite and have the distributional properties of being a possible dependent mono-distributive scope noun.

Definite numeral nouns also have the capacity to be compared (e.g., ‘More than 3’) and put in a range context (e.g., ‘From 2 to 4’). In the data, no other numeral noun subcategory occurs in this kind of construction.

S 110: Definite numeral and comparison preposition

‘More than 50 years.’

ti.lət	fo:ŋ-cit	ku.mə:
beyond	50	year
1ndex	2ndex	3ndex
P	N	N
+cmpr	+nmrl	+unit
2[[N]]	+dfnt	
2([+nmrl])		
2([+dfnt])		

S 111: Definite numeral noun with goal preposition

‘Each day you can set from five to ten tubes.’

mə:j	ʔi.ŋaj	puəh	tɛ:	fo:ŋ	to?	mu.cit	pal.lo:
Every	day	set	from	five	to	ten	tube
N	N	V	P	N	P	N	N

7.5.2.2 Degree Indefinite Numerals

There are three words in this subcategory: the Pacoh words *ʔe:* and *kli:ŋ* ‘many’ and *biəʔ* ‘few’. Degree indefinite numeral nouns [+degr] allow for intensifying adverb adjuncts by the contextual feature [?([+ntsf])].

RR-N10 [+degr] → [?([+ntsf])]

The intensifying adverb in Pacoh is *li:* ‘very’, as in S112.

S 112: Degree indefinite numeral with degree adverb dependent

‘I have very few bananas.’

ki:	vi:	biəʔ	li:	lam	pe:ʔ
Is	have	few	truly	clsf-general	banana
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	N	Adv	N	N
+prn	-trns	+nmrl	+ntsf	+unit	-unit
-plrl	+crsp	-dfnt		+clsf	
PAT	1[PAT]	+degr			
	3[COR]	4[+ntsf]			
		COR			

They are commonly used as impersonal nominal predicates, as in S113.

S 113: Degree numeral noun with intensifying adverb

‘In the jungle, there are many kinds of trees.’

kəl.luŋ	ʔm.bu:t	ʔe:	li:	noh	ʔa.lə:ŋ
inside	jungle	many	very	type	tree
N	N	N	Adv	N	N
+lctn		prdc	+ntsf		
Nom		+degr			

Pacoh degree numeral nouns are the only numeral nouns that, in the data, freely occur as the sole heads of noun phrases (i.e., do not cooccur with unit noun dependents).

7.5.2.3 General and Person Indefinite Numeral Nouns

Non-interrogative indefinite numeral nouns are used as dependents of non-question verbs. They consist of person [+prsn] and general [-prsn] indefinite numeral

nouns. The general indefinite numerals include the non-interrogative *li.mɔː₂* ‘several’ and *ba:r-peː* ‘a few’.⁵² The form *li.mɔː₂* ‘several’ differs from its interrogative counterpart, in addition to the semantic difference (interrogative versus non-interrogative), by the former’s ability to occur in sentences with sentence final ‘yes-no’ polar question particles (as discussed in section 9.2.1), as in S114.

S 114: Comparing indefinite numerals with interrogative sentence particle

‘Do you have several of them?’

*ʔa.ca:j	vi:	li.mɔː₁	lam	ləjʔ
2s	have	however many	unit	no?
		+ntrg		+ntrg
ʔa.ca:j	vi:	li.mɔː₂	lam	ləjʔ
2s	have	several	unit	no?
N	V	N	N	Spt
+prn	+trns	+nmrl	+unit	+ntrg
+socl	+qstn	-dfnt		
	+polr	-ntrg		

The polar question verb requires an interrogative yes-no sentence particle, but not an indefinite information interrogative noun. Indefinite nouns are also semantically and syntactically plural as they can occur in the NOMINATIVE case form of reciprocal verbs.

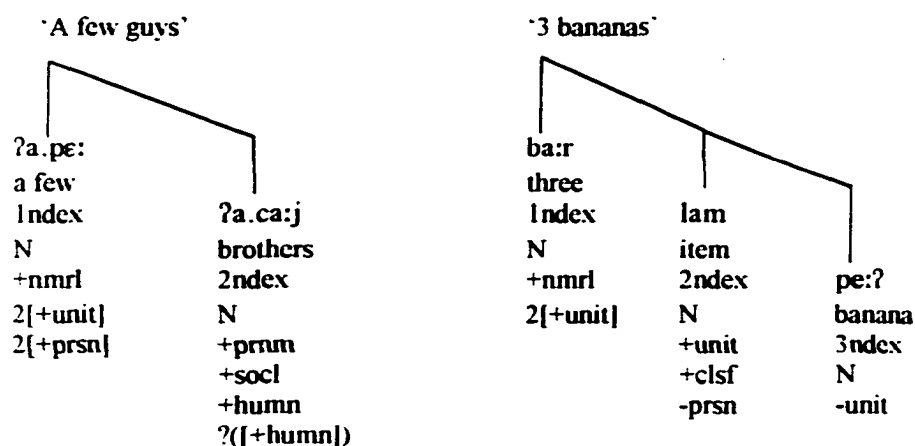
The person non-interrogative indefinite numeral noun, *ʔa.peː₂* ‘a few’, is marked [+prsn], a feature which has the contextual requirement [?(+[humn])].

RR-N11 [+prsn] → [?(+[humn])]

The form *ʔa.peː₂*, which is derivationally related to the third-person plural pronoun *ʔa.peː₁*, can only take nouns marked [?(+[humn])], as in S115.

⁵² Though *ba:r-peː* shares phonological material with the Pacoh numerals for ‘two’ and ‘three,’ *ba:r* and *peː* respectively, no other words similarly derived were found.

S 115: Person and non-person numerals



In S116b, ‘three’ has no restrictions as to what type of dependent nouns it can take. The homophonous non-numeral, pronoun form commonly occurs in bare noun phrases, while numeral nouns very rarely do.

S 116: Comparing derivational forms

- (a) ?a.pɛ:₁ po:k ‘They went.’
 (b) *?a.pɛ:₂ po:k ‘A few went.’
 (c) *ba:r po:k ‘Two went.’

In these cases, the numeral noun requires a [-unit] noun dependent. The noun feature [+humn] can be tested by such nouns’ dependence on *na?*, the person classifier unit noun, or with social pronominal nouns, all of which are [+humn] and have the contextual requirement [?(+prsn)]. In S117a to d, the definite numeral occurs with both [±humn] unit nouns, while ?a.pɛ: only occurs with the human unit *na?*. Thus, while Pacoh *ba:r* ‘two’ may precede both kinds of unit noun, ?a.pɛ: may only precede *na?* (which itself may take only non-unit [+humn] nouns, see section 7.9.2.1) or other nouns that have the feature [+humn].

S 117: Comparing [\pm prsn] numeral nouns

<u>EXAMPLE</u>	<u>TRANSLATION</u>	<u>FEATURES COMBINED</u>
(a) ba:r lam	'Two of them'	([-prsn] and [-humn])
(b) ba:r na?	'Two people'	([-prsn] and [+humn])
(c) ?a.pɛ: na?	'A few people'	([+prsn] and [+humn])
(d) *?a.pɛ: lam	'A few of them'	([+prsn] and [-humn])

7.5.2.4 Interrogative Numeral Noun

There are three words in this category, *li.mɔ:₁*, *?a.li.mɔ:*, and *li.mɔ:-?e:*,⁵³ all meaning 'how many/how much'. The form *li.mɔ:₁* is differentiated from the homophonous non-interrogative indefinite numeral noun by the former's lack of ability to cooccur in sentences with final question particles, as in S118. Verbs are subcategorized by the feature [\pm qstn], and [+qstn] verbs are then subcategorized by the feature [\pm polr]. These interrogative numeral nouns occur with verbs that are [-polr], which take only interrogative pronouns.

S 118: Interrogative numeral noun

'How many kilos do you weigh?'

*?a.ca:j	?n.ta:ŋ	li.mɔ:₁ +ntrg	kən	ləj? Sprt +ntrg
?a.ca:j	?n.ta:ŋ	li.mɔ:₂	kən	
male-older	weigh	how many	kilogram	
1ndex	2ndex	3ndex	4ndex	
N	V	N	N	
-prpr	-trns	+nmrl	+unit	
+adrs	+crsp	+ntrg		
Nom	1[PAT]	Acc		
PAT	3[COR]	COR		

⁵³ *li.mɔ:-?e:* 'how many' contains the two phonetic forms, *li.mɔ:* 'how many' and *?e:* 'many,' but is considered to be a fully lexicalized single word since the other possible combination (i.e., **li.mɔ:-klij* with *klij* 'many') does not exist.

7.5.3 Numeral Noun Dependency Relationships

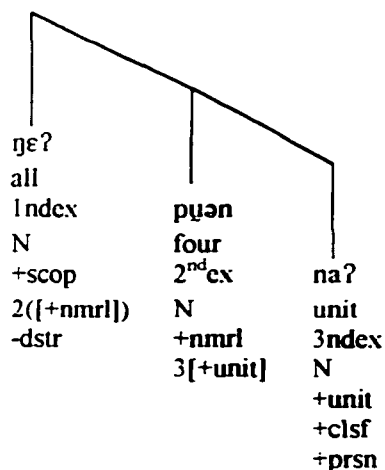
This subsection describes the primary dependency relationships of Pacoh numeral nouns with other nouns. They take strictly [+unit] nouns as their complements, though they are seen as the dependents of scope and relator nouns. They most often occur with unit noun dependents in such positions. Numeral nouns alone as predicates, especially certain indefinite and degree numeral nouns, appear to be somewhat more acceptable, as the small handful of examples suggest.

7.5.3.1 Numeral Nouns as Dependents of Scope Nouns

As dependents of scope nouns, numeral nouns can have two semantic relationships, namely, distributive and non-distributive. The non-distributive scope nouns (see section 7.8.2.1) have the meaning ‘all’, referring to the totality of the numeral noun dependent.

S 119: Numeral noun with non-distributive scope regent

‘All four of them.’



Being the leftmost element of the noun phrase, its direct syntactic dependent is the numeral noun with which it has a semantically modifying relationship, rather than the following unit noun.

Pacoh distributive scope nouns have a few meanings, consisting of mono- and poly-distributional scope nouns. Mono-distributive scope nouns have the contextual requirement [?(+[sngl])], thus they take only singular numeral nouns, while poly-distributive scope nouns have no restrictions, taking either plural or singular.

7.5.3.2 *Numeral Nouns as Dependents of Relator Nouns*

Pacoh definite numerals and the interrogative numeral can be dependents of the extension relator noun *ʔən* (see section 7.7.2.2) when functioning as ordinal numbers, as in S120. The Pacoh consultants with whom I worked also used the ordinal marking form *tʰi:*.⁵⁴ The form *tʰi:* is probably a word-initial substring since it occurs in the data with a numeral as the dependent of a relator noun, as is shown in S121. The interrogative numeral noun may be used in the same position to inquire about one of a group of ordinals, as in S122.

⁵⁴ This form is a Vietnamese loan. *tʰi:*.⁵⁵ which precedes numerals and indicates they are ordinals.

S 120: Ordinal number

‘My third child’

ʔa.ka:j	ʔən	pɛ:	ki:
child	which	three	I
1ndex	2ndex	3ndex	4ndex
N	N	N	N
-unit	+rltr	+nmrl	+prn
	prdc	prdc	
	Prv	Prv	
	3[prdc]		
	3[Prv]		

S 121: The ordinal

‘The third knife’

lam	ʔa.ci:w	ʔən	t ^h i:-pɛ:
clsf-general	knife	which	third
1ndex	2ndex	3ndex	4ndex
N	N	N	N
+unit	-unit	+rltr	+nmrl
2([+unit])	3([N])	+xtns	Prv
	3([Prv])	4([Prv])	prdc
		prdc	

S 122: Interrogative ordinal

‘The what-th liquor bottle?’

bɛ:	ʔa.riəw	ʔən	li.mə:
bottle	liquor	that	how many
1ndex	2ndex	3ndex	4ndex
N	N	N	N
+unit	+mass	+rltr	+nmrl
2([+mass])	-unit	Prv	+ntrg
2([-unit])	3([+rltr])	prdc	Prv
	3([prdc])		prdc

7.5.3.3 Numeral Nouns As Regents Of Unit Nouns

As regents, numeral nouns take unit nouns as dependents the vast majority of the time. This relationship is formalized through RR-N8a.

RR-N9a [N, +nmrl] → [?([+unit])]

However, they are still optional in some cases, though the contexts in which this is the case is not entirely clear based on available data. Native speakers stated that S123a was either not as good as S123b or not acceptable.

S 123: Numeral nouns lacking unit noun dependent

'I bought one already.'

(a) ?ki:	pləj	mɔːj	je:	
I	buy	one	already	
1 _{ndex}	2 _{ndex}	3 _{ndex}	4 _{ndex}	
		+[unit]		
(b) ki:	pləj	mɔːj	lam	je:
I	buy	one	unit	already
1 _{ndex}	2 _{ndex}	3 _{ndex}	4 _{ndex}	5 _{ndex}
		4[+unit]	+unit	

The unit noun dependents of a numeral are in the PREDICATIVE case form and bear the feature [prdc]. RR-N9 shows the requirement of unit noun predicates in the Prv case form.

$$\text{RR-N9b} \quad [N, +nmrl] \quad \rightarrow \quad \left[\begin{array}{l} ?([N]) \\ ?[Prv] \\ ?([+unit]) \end{array} \right]$$

This rule is demonstrated in S124.

S 124: Numeral nouns and unit nouns

'An older brother and three younger sisters.'

mɔːj	naʔ	?a.caːj	?a.liŋ	baːr	ti.kuəj	?a.ʔe:m-kɔːj
one	(clsf)	brother	and	three	person	sibling-female
1 _{ndex}	2 _{ndex}	3 _{ndex}	4 _{ndex}	5 _{ndex}	6 _{ndex}	7 _{ndex}
N	N	N	Cnjc	N	N	N
+nmrl	+unit	-unit		+nmrl	+unit	+unit
2([+unit])	+clsf	+humn		6([+unit])	+prsn	+humn
	3([-unit])	Prv			7([+humn])	Prv
	Prv	prdc			Prv	prdc
	prdc				prdc	

No restrictions of subcategories of numeral nouns and subcategories of unit nouns are found in the data, with one exception. The general classifier *lam* has a derivationally

related form *?l.lam* ‘one-unit’. Since this form is already singular, normal definite numerals cannot take this form as a regent.

S 125: The singular classifier and constraints on numeral nouns

- | | | | |
|-----|-------|--------|----------------|
| (a) | mɔːj | lam | ‘one unit’ |
| (b) | *mɔːj | ?l.lam | ‘one one-unit’ |
| (d) | *ba:r | ?l.lam | ‘two one-unit’ |

7.5.3.4 Numeral Nouns without Unit Noun Dependents

Pacoh numeral nouns and their dependent unit nouns are very closely bound. During my data collecting, native Pacoh speakers corrected examples of numeral nouns without unit nouns. However, in a few rare instances, some Pacoh did omit the unit nouns in their own speech and used the numerals followed by what is considered in this grammar to be a non-unit noun. For example, in S126, while the higher numeral noun does have a dependent unit noun, the lower numeral has a non-unit noun as a dependent.

S 126: Numeral noun with non-unit dependent

‘Our house has three men and four women.’

duŋ	he:	vi:	pɛ:	lam	ti.kuəj	?ŋ.kɔŋ	pɔən	?ŋ.kan
house	our	has	3	unit	person	male	4	female
N	N	V	N	N	N	N	N	N
			+nmrl	+unit			+nmrl	-unit

One possibility is that since the first unit noun is used, the second one need not be, and the index of the first unit noun might be copied through linking rules. However, there are cases in which no unit is available to copy features. In S127, the numerals do not even have noun dependents, simply stative verbs. While complicating the issue of the range of numeral dependents, this supports the notion of numerals as regent nouns of these constructs rather than partial word forms associated with word-formation strategies.

Understanding the full range of patterns of numeral noun-dependent distribution requires more data.

S 127: Numeral nouns with dependent stative verb

'He's got one black colored eye and one gray colored eye.'

mat	do:	mɔːj	lo:m	mɔːj	plu:ʔ
eye	3s	one	black	one	gray
N	N	N	V	N	V
-unit	+prmn	+nmrl	+sttv	+nmrl	+sttv

7.6 PRONOMINAL NOUNS

Pacoh pronominal nouns (formally marked [+prmn]) all have anaphoric reference within a discourse context, though the individual subcategories may express definiteness, number, person, location, gender, and/or social status. A primary characteristic of Pacoh pronominal nouns is that they cannot take dependent nouns bearing the COR case relation and thus cannot be possessed. Pacoh pronominal nouns are comprised of six primary categories: demonstrative, general indefinite, interrogative indefinite, proper, pronoun, and social pronominal nouns.

7.6.1 Characterization of Pronominal Nouns

This section characterizes pronominal nouns in Pacoh. 'Pronouns' in general are commonly defined in terms of person, number, and gender. In many languages in Southeast Asia,⁵⁵ social status and age are also important in using terms of address. This combination of grammatical, semantic, and pragmatic features is what makes up Pacoh pronominal nouns. Before discussing Pacoh pronominal noun subcategories, their shared

⁵⁵ Southeast Asian languages that use similar systems of personal reference include Cambodian (Huffman 1970:356-7), Hokkien Chinese (Chang 1979:233-234), Vietnamese (Thompson 1985:299-306), Indonesian (Wolff et al., 1992:17-18), and Laotian (Hoshino and Russell 1997:144-147). Cooke 1968 deals with the Thai, Vietnamese, and Burmese pronominal systems.

status as nouns is discussed. Pacoh pronominal nouns can occur in a variety of case forms as dependents of verbs, prepositions, and nouns, as demonstrated in S128a to d.

S 128: Pacoh pronominal nouns in case-marked positions

(a) 'Who bought this?'

ʔn.naw	pləj	ʔn.nəh
who	buy	this
N	V	N
+prnm	+trns	+prnm
+ntrg		+dmns
Nom		Acc
AGT		PAT

(b) 'I went with him.'

ki:	po:k	ʔa.liŋ	do:
I	go	with	he
N	V	P	N
+prnm	-trns		+prnm
+prnm			+prnm
Nom			Lcv
PAT			LOC

(c) 'Is this your village?'

ʔn.nəh	ve:l	maj	ləjʔ
this	village	you	not
N	N	N	Sprt
+prnm	-unit	+prnm	+ntrg
+dmns	prdc	+prnm	
Nom		Prv	
PAT		COR	

(d) 'It's hers.'

ʔn.nəh	ʔn.do:	ʔa.ʔε:m	ʔŋ.koh
this	poss.-of	3s	that
N	N	N	N
+prnm	+rltr	+prnm	+prnm
+dmns	+pssn	+socl	+dmns
Nom	prdc	Prv	Prv
PAT		COR	prdc

The primary syntactic constraint that differentiates pronominal nouns from other noun subclasses is that pronominal nouns, though being able to bear the COR case relation themselves, cannot take dependent nouns bearing the COR case relation. In effect, they cannot be possessed, as seen by the grammaticality test of S129a to c.

S 129: Constraints on pronominal nouns and the COR case

(a) 'My village.'

ve:l	ki:
village	I
N	N
	Prv
	COR

(b) 'That one of his.'

lam	do:	ʔŋ.koh
unit	3s	that
N	N	N
	Prv	Prv
	COR	prdc

(c) '*My you.'

*maj	ki:
you	I
N	N
	Prv
	COR

7.6.2 Pronominal Noun Subcategories

Pronominal nouns in Pacoh are divided by the features $[\pm\text{socl}]$, $[\pm\text{dfnt}]$, $[\pm\text{ntrg}]$, $[\pm\text{dmns}]$, and $[\pm\text{prnm}]$, resulting in six primary subclasses: demonstrative, general indefinite, interrogative indefinite, proper, pronoun, and social pronominal nouns.

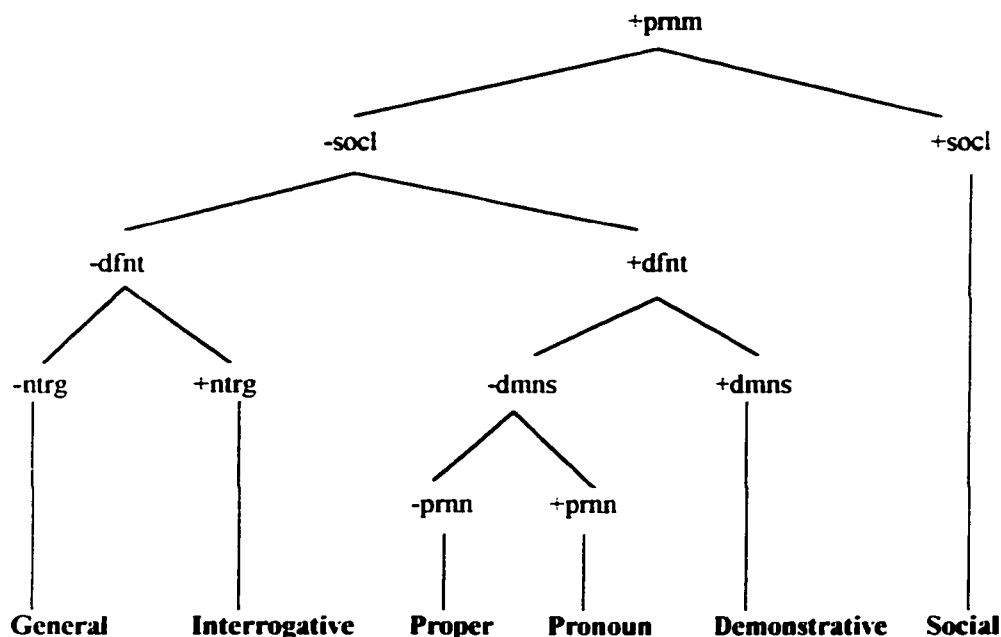


Figure 30: Subcategorization of Pacoh pronominal nouns

Pronominal nouns are first divided by the feature $[\pm\text{socl}]$. Social pronominal noun usage is conditioned by factors of age, gender, and degree of respect. The primary attributes that differentiate them from other subclasses of pronominal nouns are that (1) they are unmarked for definiteness, (2) they can take dependent demonstratives, and (3) they are $[\text{+unit}]$ and so can be dependents of numeral nouns. The non-social pronominal nouns are divided by the feature $[\pm\text{dfnt}]$. The shared characteristic of all other pronominal noun subclasses is the inability to take demonstratives to mark definiteness. Indefinite pronominal nouns cannot have definite external referents. The feature $[\pm\text{ntrg}]$

divides indefinite pronominal nouns into those that can or cannot occur as the dependents of question verbs. Definite pronominal nouns consist of demonstratives, pronouns, and proper nouns, of which the last two groups have derivationally related sets of first, second, and third person forms.

Pronouns and social pronominal nouns, which can overlap in syntactic distribution and semantic functions, do constitute distinct subclasses based partially on pragmatic function but also on syntactic properties. Their shared characteristics include:

- (1) Their subclasses are restricted from taking COR adjuncts (i.e., cannot be possessions).
- (2) Both have discourse reference to human entities.
- (3) Both have 1st, 2nd, and 3rd person references.

Differences between pronouns and social pronouns include:

- (1) Pronouns inherently carry the feature [\pm plrl]; social pronominal nouns are not marked for plurality, but are marked [+unit] and so can be dependents of numeral nouns, as in S130.

S 130: Plurality in pronouns and social pronominal nouns

(a) 'we/you/those three'		(b) 'the three of them'	
pe:	?a.?e:m	*pe:	ŋa:j
three	young persons	three	they
N	N	N	N
+plrl	?plrl	+plrl	+plrl

- (2) Only pronouns having certain word-initial substrings carry case-marking features, such as forms having [?a... that bear the feature [+datv].

- (3) Pronouns have features indicating number and person, show related patterns of word-formation strategies (e.g., [ʔi... pronouns denote 2nd person), and are inherently [+dfnt]; social pronominal nouns indicate number and definiteness lexically in combination with numerals and demonstratives, and person is recoverable from discourse contexts. This is seen in S131.

S 131: Definiteness in pronouns and social pronominal nouns

(a) 'They'	(b) 'They (the three of them)'		
ʔa.pɛ:	pɛ:	ʔa.ʔɛ:m	ʔŋ.koh
they	three	younger person	that
+plrl	+plrl	ʔplrl	+dfnt
		ʔdfnt	

- (4) Social pronominal nouns have homophonous common noun derivational counterparts (kinship terms or job titles); Pronouns do not.

7.6.2.1 Demonstrative Pronominal Nouns

Pacoh demonstrative pronominal nouns (or just demonstratives for short) occur near the ends of noun phrases, as in S132a, though they can stand alone as bare noun phrases as well, as in S132b.

S 132: Demonstrative as dependent and head noun

(a) 'All those pens'			(b) 'This isn't ripe yet.'		
ŋɛʔ	ʔu.raʔ	ʔŋ.koh	ʔn.nɛh	yo:h	ʔŋ.ŋa:m
all	pen	that	this	not yet	ripe
N	N	N	N	V	V
		+dfnt	+dfnt		
		+dmns	+dmns		

They have anaphoric reference to things based on their physical and temporal position in relation to the speaker.

Though demonstratives typically occur at the ends of noun phrases, LOC adjuncts follow them. This order is determined by a general rule that applies to nouns in general, but also affects demonstratives. Demonstratives are predicate adjuncts of their noun regents and precede COR and LOC dependents, as stated in RR-N6a and b.

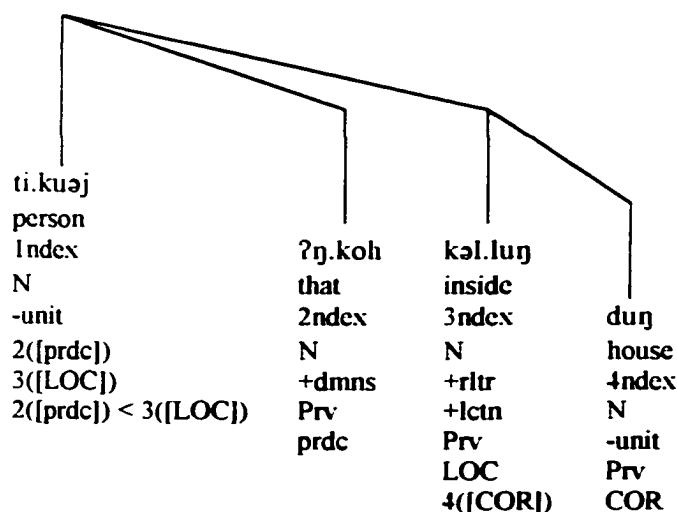
RR-N6a [±unit] → [?([prdc])<?([COR])]

RR-N6b [±unit] → [?([prdc])<?([LOC])]

Thus, demonstrative nouns have a lower index than LOC adjuncts, as is demonstrated in S133.

S 133: Linear ordering of demonstrative and LOC adjunct

‘That person in the house.’



For more discussion of order in Pacoh noun phrases and relevant linear ordering rules, see section 7.3.1, Noun Phrase Linear Precedence.

Pacoh demonstratives differ semantically according to proximity (proximal, medial, and distal (following Fillmore 1982:48)) and position (fore and aft, above and below, and beside). Table 48 follows the analysis of ND&P (1986:45-46), with English

translations and the medial indefinite *?ŋ.koh* added. *?n.nɛh* ‘something here’ and *?ŋ.koh* ‘something there’ do not specify height and direction, while all the other demonstratives do.

Distance	Fore/Higher	Aft/Lower	Beside
Proximal	<i>?n.nɛh</i>		
Medial	<i>?ŋ.koh</i>		
	<i>?n.tih</i>	<i>?n.tɔh</i>	<i>?n.trah</i>
Distal	<i>?n.ti:h</i>	<i>?n.tɔ:h</i>	<i>?n.tra:h</i>

Table 48: Pacoh demonstrative pronominal nouns

One aspect of word shape worth noting is that all Pacoh demonstratives have word-initial nasal presyllable and the word-final /-h/. Also, the difference between the medial and distal category is vowel length (see section 11.2.1.3).

The most commonly occurring forms in existing data are the two semantically least marked forms, *?n.nɛh* and *?ŋ.koh*. These two words are often dependents of common nouns, social pronominal nouns, and time unit nouns. The remaining demonstratives, which indicate position above or below and in front of or behind, were difficult to elicit as natural data. They generally occur as dependents of common nouns in existing data.

Demonstrative nouns, when occurring as dependents of time unit nouns that are not already marked for definiteness, provide temporal definiteness.

S 134: Pacoh demonstrative dependent of time noun

‘In the morning. I work in the field.’

<i>?i.laʃ</i>	<i>?n.nɛh</i>	<i>ki:</i>	<i>po:k</i>	<i>ta?</i>	<i>pi.daj</i>
morning	this	I	go	work	field
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	N	N	V	V	N
+time	+dmns		-trns		
LOC	+dfnt		1((LOC))		

However, demonstratives are not locational nouns, as they are in other languages (e.g., Vietnamese and English). As the dependents of locative verbs or prepositions, which require LOC complements, Pacoh demonstratives require locational relator nouns to provide the feature [+lctn]. In S135, (a) is grammatical and (b) is not since the former has a [+lctn] noun and the latter does not.

S 135: Demonstrative with and without locational relator noun regent

(a) 'I live here.'				(b) 'I live here.'		
ki:	?at	daŋ	?n.nəh	*ki:	?at	?n.nəh
I	live	at	here	I	live	here
1ndex	2ndex	3ndex	4ndex	1ndex	2ndex	3ndex
N	V	P	N	N	V	N
	+lctv	+lctn	-lctn		+lctv	-lctn
	3[+lctn]				?[+lctn]	

7.6.2.2 Indefinite Pronominal Nouns

Indefinite [-dfnt] pronominal nouns are subcategorized into interrogative [+ntrg] pronominal nouns and homophonous, derivationally-related non-interrogative [-ntrg] indefinite pronominal nouns.

S 136: Derivationally related indefinite pronominal nouns

[+ntrg]	[-ntrg]
?n.naw ₁ 'who'	?n.naw ₂ 'whoever'
?ə.məh ₁ 'what'	?ə.məh ₂ 'whatever'
tu.mə:₁ 'where'	tu.mə:₂ 'wherever'
mə:₁ 'which'	mə:₂ 'whichever'

Indefinite pronominal nouns cannot take definite demonstrative nouns as dependents.

S 137: Indefinite versus other pronominal nouns

(a) 'This whoever'		(b) 'This young person'	
*?n.naw	?n.nəh	?a.ʔε:m	?n.nəh
who	this	young person	this
N	N	N	N
+prnm	+prnm	+prnm	+prnm
-dfnt	+dfnt	-dfnt	+dfnt

S137a is unacceptable, but S137b is a normal combination of a social pronominal noun and a demonstrative dependent.

Pacoh indefinite pronominal nouns can be divided into two major categories distinguished by the feature [\pm ntrg]. Both interrogative and non-interrogative pronominal nouns are further divided by the features [\pm lctn] and [\pm prsn]. The feature [\pm nknw] (unknown) is a semantic distinction, indicating whether or not the question word refers to a known set of nouns (i.e., 'which' refers to a known set, while 'what' does not).

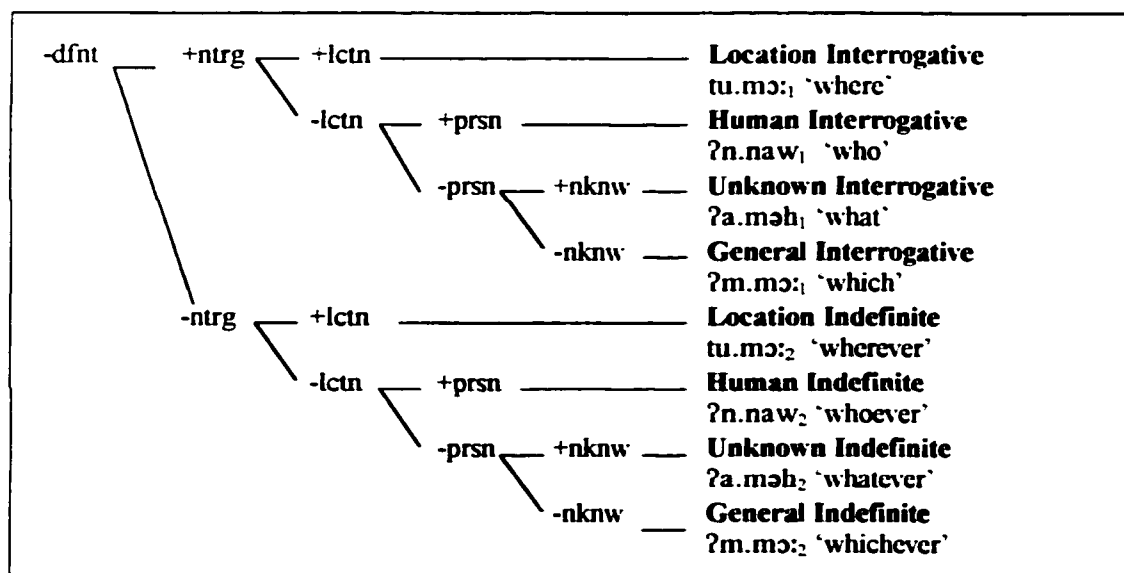


Figure 31: Subcategorization of Pacoh indefinite pronominal nouns

Pacoh indefinite pronouns share the capacity to function as case-marked dependents of verbs, bearing the PAT, AGT, or LOC case relations, and they may be predicate nouns that serve as regents of finite clauses. Locational indefinite pronominal nouns receive the LOC case, while all the other subclasses may receive the PAT, AGT, and COR positions. This criterion excludes the other interrogative words in Pacoh, including the interrogative *ʔi.mɔ:₁* ‘how’, the clausal preposition *vi:-ʔi.mɔ:* ‘why’ (section 8.2.3.2), and *li.mɔ:₂* ‘how much/many’ (section 7.5.2.4).

The status of indefinite pronominal nouns as interrogative is determined by syntactic distribution, discourse context, and through intonation. The double-interrogative test can be applied to differentiate the feature [\pm ntrg] of these forms. As discussed in section 10.1.6, question verbs have the feature [$+$ qstn] and require a [$+$ ntrg] dependent. Moreover, question verbs consist of polar and non-polar questions, the former requiring single interrogative sentence particles that require yes-no responses, and the latter requiring interrogative nouns.

S 138: Double-interrogative constraint

‘Do you know where he is?’

*maj	cɔ:m	dɔ:	ʔat	tu.mɔ:₁	ləj²
	-qstn			+ntrg	+ntrg
maj	cɔ:m	dɔ:	ʔat	tu.mɔ:₂	ləj²
you	know	he	located	where	no
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	N	V	N	Sprt
+prmn	+xtns	+prmn	-trns	+prmn	+ntrg
	+qstn		+lctv	-dfnt	
	+polr		-trns	-ntrg	
	6(+ntrg)		5{+lctn}	LOC	
			5{LOC}		

Another characteristic that distinguishes interrogative from non-interrogative pronominal nouns is that the interrogative words often occur in the clause-initial theme-marked position, while the non-interrogative words tend to stay in their case-marked positions. Topicalized nouns that are associated with PAT and LOC complements do not cooccur with topic-marking comment extension prepositions (section 8.2.3.3). One constraint on the use of these interrogative pronouns is that theme nouns are not associated with the COR case relation requirement of correspondent verbs. Each subcategory of indefinite pronominal nouns is discussed in the following subsections.

7.6.2.2.1 'Where' and 'Wherever'

Pacoh locational indefinite interrogative pronouns receive the LOC case relation, since they satisfy the requirement [?(+lctn)] of bare locative verbs and prepositions. Words in this class are shown to have the feature [+lctn] by testing their occurrence as dependents of *?at*, a locative verb that takes LOC complements.

S 139: Locational nouns

(a) 'Where is he?'

dɔ:	?at	tu.mɔ:
3s	located	where
Index	2ndex	3ndex
N	V	N
	+lctv	+lctn
	3[+lctn]	LOC

(b) 'He's at home.'

dɔ:	?at	daŋ	duŋ
3s	at	place	home
Index	2ndex	3ndex	4ndex
N	V	N	N
	+lctv	+lctn	-lctn
	3[+lctn]	LOC	

(c) 'Where is he?'

*dɔ:	?at	?m.mɔ:
3s	located	which
Index	2ndex	3ndex
N	V	N
	+lctv	+prnm
	?[+lctn]	-lctn

(d) 'He's at home.'

*dɔ:	?at	duŋ
3s	located	home
Index	2ndex	3ndex
N	V	N
	+lctv	-unit
	?[+lctn]	-lctn

The pronominal noun in 139a is in the same position as the locational relator noun in S139b, and both words are required by the verbs to have the feature [+lctn], as shown by the unacceptability of (c) and (d), which contain non-locational nouns.

The distribution of these location pronominals is flexible, occurring either before or after their verb regents, though never between the verb and nouns in the NOMINATIVE case form.

S 140: Two positions of locational pronouns

(a) 'Where are you going?'			(b) 'Where are you going?'		
maj	po:k	tu.mə:	tu.mə:	maj	po:k
you	go	where	where	you	go
1ndex	2ndex	3ndex	1ndex	2ndex	3ndex
N	V	N	N	N	V
+prnm	-trns	+prnm	+prnm	+prnm	-trns
+prmn	+lctv	+ntrg	+ntrg	+prmn	+lctv
	3[+lctn]	+lctn	+lctn		1[+lctn]
	3[LOC]	LOC	LOC		1[LOC]
	+move	-stay	-stay		+move

For an account of this variation in distribution, see section 10.2.5, Locative Verbs. The feature [\pm stay] is underspecified and provided by regent locative verbs. In S140a and b above, the verb is a [+move] verb, which assigns the feature [-stay] to its locational noun dependent. In S141, the verb is a [-move] verb, which assigns the feature [+stay] to the same location dependent.

S 141: Non-direction location interrogative pronoun

'Where are you staying, teacher?'		
tu.mə:	t ^h əj	bi?
where	teacher	sleep
1ndex	2ndex	3ndex
N	N	V
+prnm	+prnm	-trns
+ntrg	+socl	+lctv
+lctn		1([+lctn])
LOC		1([LOC])
+stay		-move

7.6.2.2.2 'Who' and 'Whoever'

The human and indefinite (*?n.naw₁* 'who') and interrogative (*?n.naw₂* 'whoever') pronominal nouns are marked [+humn], and so they can occur as the dependents of person possessional relator nouns (section 7.7.2.5).

S 142: Human pronominal nouns

(a) 'Who does this belong to?'

<i>?n.nəh</i>	<i>?n.də:</i>	<i>?n.naw</i>
this	poss.-of	who
1index	2index	3index
N	N	N
	+rltr	+prnn
	+prsn	+humn
	3[+humn]	

(b) 'What does this belong to?'

* <i>?n.nəh</i>	<i>?n.də:</i>	<i>?ə.məh</i>
this	poss.-of	what
1index	2index	3index
N	N	N
	+rltr	+prnn
	+prsn	-humn
	?[+humn]	

In S142a, the feature [?(+humn)] is satisfied, and in S142b, it is not.

One way to use the non-interrogative form is to emphasize the inclusion of all members of a set, as in S143.

S 143: Indefinite 'object' of impersonal verb

'There's absolutely no one that knows.'

<i>ləj²</i>	<i>vi:</i>	<i>?n.naw</i>	<i>?ən</i>	<i>cə:m</i>
no	exist	whoever	that	know
1index	2index	3index	4index	5index
Adv	V	N	N	V
+ngtn	-trns	+prnn	+rltr	
	+mprs	-dfnt	-pssn	
	+crsp	Acc		
	9[Nom]	COR		
	3[COR]			

This use of non-interrogative pronouns is seen in other Asian languages, such as Vietnamese and various Chinese languages.

7.6.2.2.3 'What', 'Whatever', 'Which', and 'Whichever'

The general indefinite ([-dfnt], [-ntrg]) and interrogative ([-dfnt], [+ntrg]) pronouns include two subclasses based on the feature [\pm nknw], resulting in [+nknw] and [-nknw] forms, as shown in Table 49 below.

	-ntrg	+ntrg
-nknw	?m.mɔ:₂ 'whichever'	?m.mɔ:₁ 'which'
+nknw	?ə.məh₁ 'whatever'	?ə.məh₁ 'what'

Table 49: 'What', 'Whatever', 'Which', and 'Whichever'

The difference is semantic, indicating whether or not a specific group of entities is referred to. There is a correspondence between the semantic properties and syntactic distribution of these two verbs. The [+nknw] forms ?ə.məh₁ 'what' and ?ə.məh₂ 'whatever' are generally used as bare noun phrases, having no external noun as a point of reference. In contrast, the [-nknw] forms ?m.mɔ:₁ 'which' and ?m.mɔ:₂ 'whichever' primarily occur as dependents of nouns, rather than alone, since they generally have a set of nouns (e.g., *duŋ ?m.mɔ:* 'which house') from which to select semantically. Thus, while both combinations are possible, as shown in S144 below, selectional restrictions may apply.

S 144: Known and unknown indefinite pronominal nouns

(a) 'What/which did you buy?'

?m.mɔ: maj pləj
which
-nknw

?ə.məh maj pləj
what you buy
N N V
+prnm
+nknw

(b) 'Which/what book did you buy?'

?ə.məh maj pləj ʃa:c
what
+nknw

?m.mɔ: maj pləj ʃa:c
which you buy book
N N V N
+prnm
-nknw

In addition, the interrogative *?a.məh* commonly appears in the clause-initial theme position, while interrogative *?m.mə:* generally stays in the case-related position with its regent noun.

S 145: Distribution of known and unknown indefinite pronominal nouns

(a) 'What will you buy?'			(b) 'Which one will you buy?'			
<i>?a.məh</i>	<i>?ijŋ</i>	<i>pləj</i>	<i>?ijŋ</i>	<i>pləj</i>	<i>lam</i>	<i>?m.mə:</i>
what	want	buy	want	buy	unit	which
N	V	V	V	V	N	N
+nknw						-nknw
them						

In S146, the natural positions for each type is shown, but they can be reversed. When the COR case is involved, it cannot be associated with a clause-initial theme noun and is always seen in the postverbal position, as in S146.

S 146: Interrogative pronoun and correspondent verb

'Where does it hurt/What's her sickness?'

<i>?a.ʔεm-ʔŋ.koh</i>	<i>?a.ʔaj</i>	<i>?a.məh</i>
she	sick	what
1 _{ndex}	2 _{ndex}	3 _{ndex}
N	V	N
Nom	-tms	Acc
PAT	+crsp	COR

7.6.2.3 Pronoun Pronominal Nouns

Pacoh pronoun ([+prnn]) pronominal nouns are subcategorized by the features [\pm datv] and [\pm pssn] into three primary subcategories: general, dative, and possessive pronominal nouns.

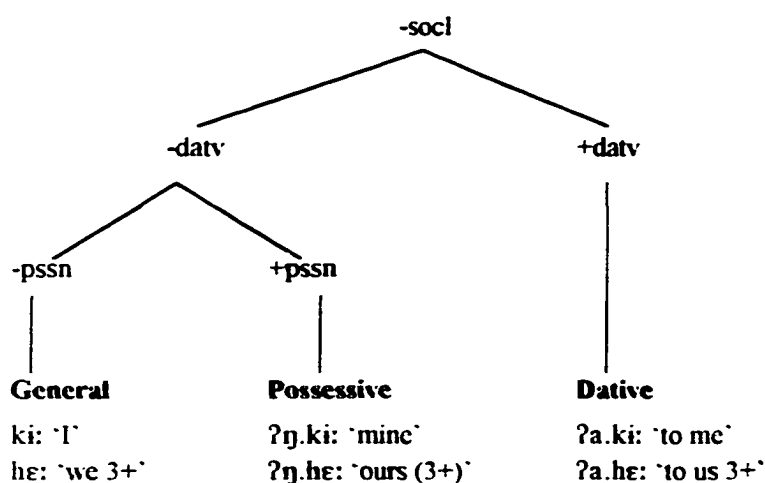


Figure 32: Subcategories of pronoun pronominal nouns

As seen in Figure 32, the three categories have derivationally related sets of words. The different sets, distinguished by the use of word-initial substrings (i.e., the homorganic nasal presyllable in [+pssn] words and [ʔa... in [+datv] words), have case-related distributions. General pronouns can bear the PAT and AGT case relations as dependents of verbs and the COR case relation as dependents of nouns, and they may be predicates. Possessive pronouns typically serve as predicate possessive absolutes in data but may bear the PAT and AGT case relations as dependents of verbs. They may not, however, be the COR adjuncts of nouns. Dative pronouns, which mark the DATIVE case form, bear only the COR case relation as the dependents of either verbs or nouns and can be predicates. Table 50 lists the case relations that each pronominal subcategory may be assigned, and for COR case relation, whether the regent is a noun or verb.

SUBCATEGORY	PAT	AGT	COR-V	COR-N	prdc
General	+	+	-	+	+
Dative	-	-	+	+	+
Possessive	+	+	-	-	+

Table 50: Case functions of Pacoh pronominal nouns

In addition to these primary categories, each pronoun subclass can be divided by the features [\pm sngl] and [\pm dual]. Plural pronouns indicate one or more persons with no specific limit, while dual pronouns refer to only two persons.

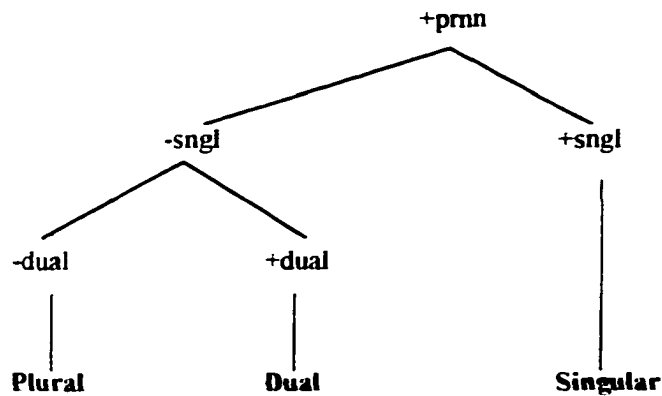


Figure 33: Plurality subcategorization of pronouns

The word classes share phonological shapes across and within subcategories.

Number and plurality is shared by classes of pronouns specific word-final portions, while forms sharing word-initial phonological shapes share case-related features. Pacoh pronouns consist of 1st, 2nd, and 3rd person categories as well as a three-way system of number, namely singular, dual, and plural. The two-syllable pronouns in the dative and possessive sets require the cooccurrence of regent dative and possessive extension relations, *?a.do:* and *?n.do:* respectively. The fact that 2nd and 3rd dual and plural pronouns have no lexical locational and possessive counterparts may reflect the two-syllable maximum for phonological words in Pacoh, possibly preventing them from participating in this word-formation strategy.

NUMBER	PERSON	GENERAL	DATIVE	POSSESSIVE
Singular	1st	ki:	?a.ki:	?ŋ.ki:
	2nd	maj	?a.maj	?m.maj
	3rd	dɔ:	?a.dɔ:	?n.dɔ:
Dual-Plural	1st	ŋaŋ	?a.ŋaŋ	?ŋ.ŋaŋ
	2nd	?i.ŋa:	?a.dɔ:-?i.ŋa:	?n.dɔ:-?i.ŋa:
	3rd	?a.ŋa:	?a.dɔ:-?a.ŋa:	?n.dɔ:-?a.ŋa:
Plural	1st	hɛ:	?a.hɛ:	?ŋ.hɛ:
	2nd	?i.pɛ:	?a.dɔ:-?i.pɛ:	?n.dɔ:-?i.pɛ:
	3rd	?a.pɛ: / ŋa:j	?a.dɔ:-?a.pɛ: / ŋa:j	?n.dɔ:-?a.pɛ: / ŋa:j

Table 51: Pacoh pronominal nouns

Each subcategory is discussed in the following subsections.

7.6.2.3.1 General Pronouns

The most commonly occurring pronominal nouns in the dataset, besides demonstratives, are general pronouns. There are ten lexical items in this category, notably more than the six forms in the other two pronoun subcategories. As shown in Figure 34, they can be divided according to the features [\pm spkr], [\pm adrs], [\pm sngl], and [\pm dual]. As a subclass of nouns, general pronouns have the least restricted usage of pronouns, occurring in most case-marked positions, such as Nom/PAT, Nom/AGT, Acc/PAT, Prv/COR, and predicates [prdc].

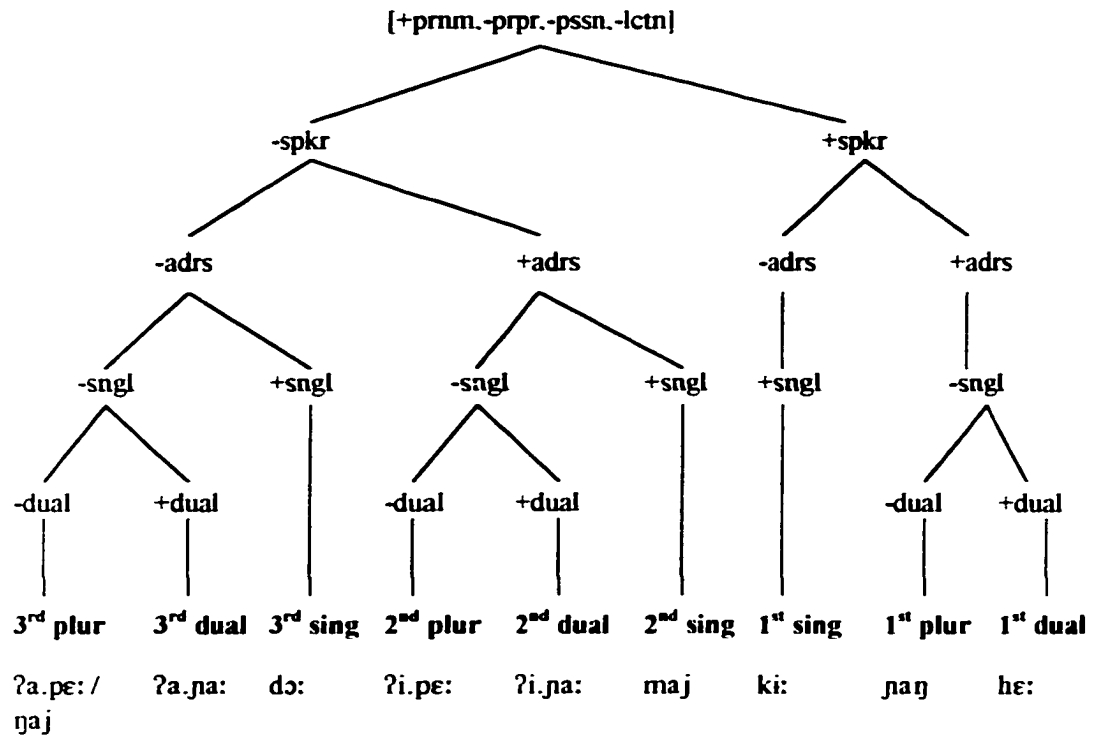


Figure 34: Subcategorization of Pacoh general pronouns

In S147, the locative intransitive verb takes a Nom-PAT and a LOC complement.

The preposition satisfies the contextual requirement [?(+lctn)] and assigns the noun the LOC case.

S 147: Pronouns in NOMINATIVE and LOCATIVE case forms

'I went toward him'

ki:	po:k	to?	dɔ:	je:
I	go	with	he	already
Index	2 nd ex	3 nd ex	4 nd ex	5 nd ex
N	V	P	N	Adv
Nom	1[PAT]	+lctn	-lctn	+prfc
PAT	4[LOC]	-stay	Lcv	
	+move	4[{{N}}	LOC	

In S148, the transitive verb requires both AGT and PAT complements. The time unit noun occurs as a LOC adjunct.

S 148: Pronouns in NOMINATIVE and ACCUSATIVE case forms

‘I will meet you tomorrow.’

ʔi.ŋaj-koh	ki:	tu.mə:ŋ	maj
tomorrow	I	meet	you
1ndex	2ndex	3ndex	4ndex
N	N	V	N
+unit	+prmn	+trns	+prmn
+time	Nom	2[AGT]	Acc
LOC	AGT	4[PAT]	PAT
		1(LOC)	

In S149, the sentence consists entirely of nouns. The sentential head is a predicate noun. The demonstrative is the Nom-PAT, satisfying the requirement of the root predicate. The pronoun is a COR adjunct.

S 149: Pronouns in PAT and COR case

‘This is my village.’

ʔn.nɛh	ve:l	ki:
this	village	I
1ndex	2ndex	3ndex
N	N	N
+prmn	-unit	+prmn
Nom	prdc	prdc
PAT	+root	-root
	3([prdc])	Prv
	3([N])	COR
	3([COR])	
	1[PAT]	

Pacoh pronouns do not take dependent demonstratives, though it might appear so in S150. However, the demonstrative is probably a discourse-related word that marks themes, like the comment extension prepositions.⁵⁶

⁵⁶ Indonesian similarly shows the use of the word for ‘that’ *itu* in noun-noun equational sentences.

S 150: Topic-marking word

'As for that guy, he didn't eat for three days.'

dɔ:	ʔn.nɛh	lɔjʔ	ʔi.ca:	pe:	ʔi.ŋaj
3s	here?	no	to eat	3	day
N	N?	V	V	N	N
them	P?		+root		
			+fint		
			m[actr]		

Also, the first noun most likely bears the theme role as indicated by the occurrence of the verb 'to eat' with the word-initial substring [ʔi... (see section 11.2.2.2).

7.6.2.3.2 Possessive Pronouns

Possessive pronoun pronominal nouns are possessive absolutes, meaning they may occur as bare noun phrases and anaphorically refer to someone's possession, like English 'mine', 'hers', etc. These pronouns may also indicate the location of existential impersonal verbs, as discussed towards the end of this subsection. Pacoh possessive pronouns are like other pronouns in having anaphoric reference while never allowing a COR dependent. There are only six words in this subclass based on the features [\pm spkr], [\pm adrs], and [\pm plrl]. The four forms in the general pronouns that are lacking here (all of which are bisyllabic) must cooccur with the person extension relator noun *ʔn.dɔs* 'possession of X'.⁵⁷

These possessive forms, all of which have nasal-initial word shapes, are not simply combinations of the extension relator noun *ʔən* and general pronouns, though this most likely was the case diachronically. They are single words, as can be seen from the phonological reduction of these presyllables as opposed to the extension relator noun,

which shows significantly less phonological reduction. The presyllables of the possessive pronouns are homorganic nasal syllables.

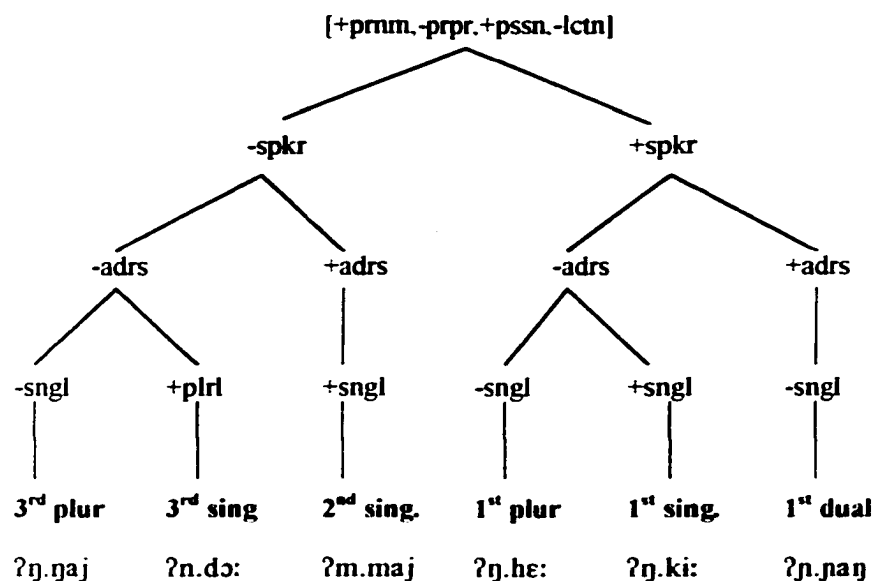


Figure 35: Pacoh possessive pronouns

Despite their possessive meanings, they cannot bear the COR case relation as dependents of nouns, the task of general pronouns.

S 151: General versus possessive pronouns bearing the COR case relation

(a) 'My book'		(b) '*The mine book'		(c) 'The book of mine'		
fac	ki:	*fac	?ŋ.ki:	fac	?ən	ki:
book	I	book	mine	book	of	I
Index	2ndex	Index	2ndex	Index	2ndex	3ndex
N	N	N	N	N	N	N
2[COR]	+prnm		+prnm		+rltr	+prnm
	-pssn		+pssn		+xtns	-pssn
	COR				COR	

In S151, while (a) and (c) are both acceptable, (b) is not.

⁵⁷ Another possibility is that these phonologically complex forms of relator nouns and pronouns, if fossilized, are completely lexicalized.

In available data, Pacoh possessive pronouns most commonly occur in the predicate position, as in S152.

S 152: Possessive pronoun as predicate

'This pen is not yours.'

?r.viət	?n.nəh	?ih	?m.maj
pen	this	be-not	yours
1ndex	2ndex	3ndex	4ndex
N	N	V	N
-unit	+dmns	-trns	+prn
2([+dmns])		+xtns	+pssn
Nom		+ngtn	prdc
PAT		↓[N. prdc]	

They can occur in case-marked positions as well, though there are limited examples in the dataset. The only way these were used in the data provided by S. Watson (1966) and Nguyễn V. L. (1986) was with an indirect possessive meaning. They are viewed here as constituting dependent theme nouns of impersonal existence correspondent verbs.

S 153: General versus possessive pronoun

(a) 'I have money.'

ki:	vi:	pra?
I	have	money
1ndex	2ndex	3ndex
N	V	N
+prn	+trns	Acc
-pssn	-xtns	PAT
Nom	1[AGT]	
AGT	3[PAT]	

(b) 'Of that which is mine, there is money.'

?ŋ.ki:	vi:	pra?
of-mine	exists	money
1ndex	2ndex	3ndex
N	V	N
+prn	+crsp	Acc
+pssn	+mprs	COR
them	3{COR}	
Tpc	1{them}	
	0{PAT}	

In S153a, the verb is a normal transitive verb, taking AGT and PAT complements.

S153b is impersonal, taking no referential PAT, but instead taking a [them] noun.

7.6.2.3.3 Dative Pronouns

Dative [+datv] pronouns only occur in the COR case relation as the dependents of correspondent verbs. These pronouns mark the DATIVE case form and consist of six subtypes based on the features [\pm spkr], [\pm adrs], and [\pm plrl], as shown in the subcategorization in Figure 36. Four forms in the general pronouns that are lacking here are all bisyllabic and must cooccur with the dative relator noun *?a.do:* ‘for X’ in order to bear the COR case relation.

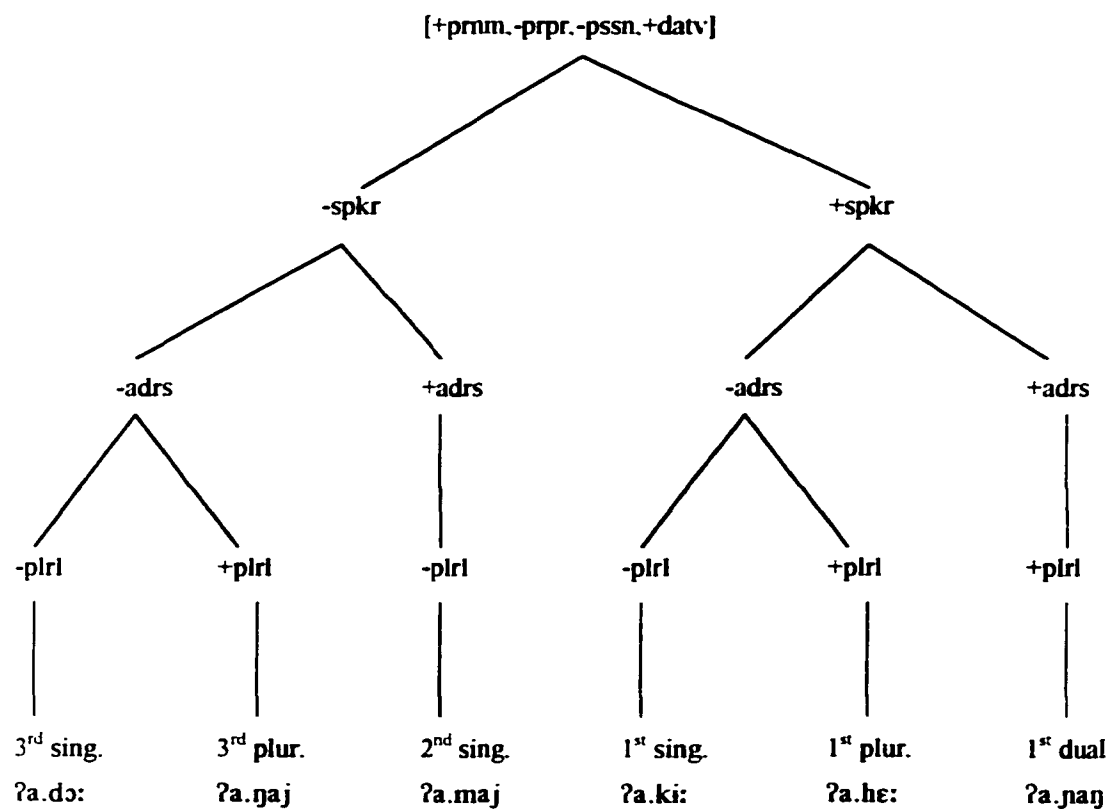


Figure 36: Pacoh location pronouns

As the dependents of correspondent transitive verbs, dative pronouns always follow their verb regents, though when they cooccur with Acc/PAT nouns, there is no specified order.

RR-V32b [-bare, +trns, +crsp] →

@>?[AGT]
@<?[COR]
@<?[PAT]

Transitive correspondent verbs require AGT, PAT, and COR complements. The AGT precedes the verb, but both the COR and PAT adjuncts follow.

Dative pronominal nouns mark the DATIVE case form and receive the COR case relation. They thus cannot appear in the LOCATIVE case form nor receive the LOC case relation. Consider S154a and b. The LOCATIVE case form, which is marked by prepositions, cannot take noun dependents that have the feature [+datv], which can only receive the COR case relation.

S 154: Dative pronoun versus locational preposition

(a) 'I threw the banana at him.'

*ki: vit pe:? to? ?a.do:
to-3s

ki:	vit	pe:?	to?	do:
Is	toss	banana	to	3s
N	V	N	P	N
Nom	+lctv	Acc	+lctn	
AGT	+trns	PAT	Lcv	LOC

(b) 'I gave him the banana.'

*ki: jɔ:n pe:? do:
3s

ki:	jɔ:n	pe:?	do:
Is	give	banana	to-3s
N	V	N	N
Nom	+crsp	Acc	+prnn
AGT	+trns	PAT	+datv
			Dat
			COR

In S155 and S156, the dative pronoun provides the DATIVE case form, which allows it to be assigned the COR case relation in each instance. Note the alternate positions before and after the other noun dependents in S155.

S 155: Dative pronoun before Acc-PAT

‘Give me that book.’

ʝo:n	ʔa.ki:	ʃa:c	ʔŋ.koh
give	to me	book	that
1ndex	2ndex	3ndex	4ndex
V	N	N	N
+trns	+prn	-unit	+dmns
+crsp	+datv	Acc	
2[Dat]	Dat	PAT	
2[COR]	COR		
3[Acc]			
3[PAT]			

S 156: Dative pronoun after Acc-PAT

‘Give that book to me.’

ʝo:n	ʃa:c	ʔŋ.koh	ʔa.ki:
give	book	that	to me
1ndex	2ndex	3ndex	4ndex
V	N	N	N
+trns	-unit	+dmns	+prn
+crsp	Acc		+datv
4[Dat]	PAT		Dat
4[COR]			COR
2[Acc]			
2[PAT]			

The overt marking of the DATIVE case form seems to correspond to this distributional flexibility since there is no semantic ambiguity regardless of position.

As dependents of non-fact extension verbs, location pronouns appear only before the lower verb complement, as seen in S157. In S157, the extension verb requires a predicate dependent, satisfied by the verb. Linear precedence is strict here; the dative pronoun dependent of these extension verbs cannot occur after the lower verb.

S 157: Causative verb and locative pronoun

'I make him drink water. (Literally 'I made for him to drink water')

(a) *ki:	pa.ŋɔ:j ²	ŋɔ:j ²	ʔa.dɔ:
(b) ki:	pa.ŋɔ:j ²	ʔa.dɔ:	ŋɔ:j ²
I	make-drink	he/she	drink
1ndex	2ndex	3ndex	4ndex
N	V	N	V
	-trns	+prmn	-fint
	+crsp	+datv	
	+xtns	Dat	
	-fact	COR	
	3([Dat])		
	3([COR])		
	4[V]		

The 3rd person singular pronoun *ʔa.dɔ:₁* has a homophonous dative relator noun *ʔa.dɔ:₂*, as shown in S158. S158a contains a dative pronominal noun, and S158b, a dative relator noun.

S 158: Correspondent verb and dative relator noun

(a) 'The mother bought her daughter a pair of socks.'

ʔa.ʔi:	pləj	ʔa.dɔ:₁	mu.to:j	tət
mother	buy	for	a-pair	sock
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	N	N
Nom	+trns	+prmn	Acc	
AGT	+crsp	+datv	PAT	
	3([+datv])	Dat		
	3[COR]	COR		
	1[AGT]			
	4[PAT]			

(b) 'The mother bought her daughter a pair of socks.'

ʔa.ʔi:	pləj	ʔa.dɔ:₂	ʔa.kaj	kan	mu.to:j	tət
mother	buy	for-3s	unit	daughter	a-pair	sock
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex
N	V	N	N	N	N	N
Nom	+trns	+rltr	+unit		Acc	
AGT	+crsp	+datv	-lctn		PAT	
	3([+datv])	Acc				
	3[COR]	COR				
	1[AGT]					
	6[PAT]					

7.6.2.4 Proper Pronominal Nouns

Proper pronominal nouns refer to 1st, 2nd, and 3rd person within a discourse-based point of reference.⁵⁸ One phonological form can represent three ‘words’. Whether the relationship between these ‘words’ in a Lexicase definition is the result of analogical word-formation or the result of discourse-related rules of feature assignment cannot be stated clearly now.

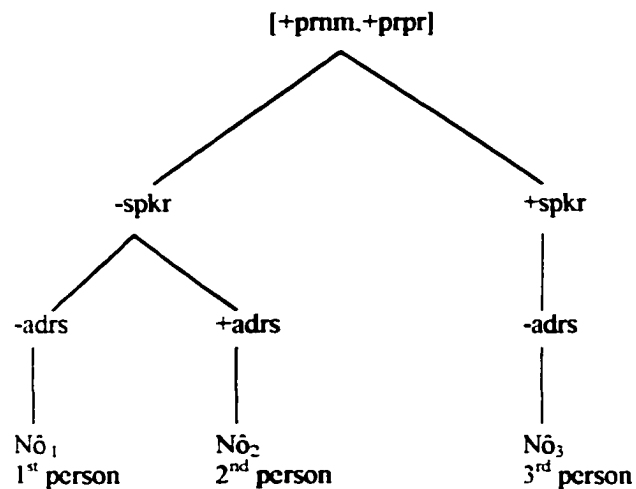


Figure 37: Subcategorization of Pacoh proper pronominal nouns

Consider S159 in which the name is ambiguous without context since it could refer to the speaker, the listener, or someone else. In S159, the name of the city ‘Huế’ is not a proper pronominal noun since it is [-humn] and cannot have personal reference. Instead, it is considered a proper non-unit (i.e., common) noun (section 7.4.2.5).

⁵⁸ A similar situation exists in Vietnamese. See Thompson 1985 for a reference.

S 159: Proper noun range of functions

‘Nô (I/you/he) studies in Hué city.’

no:	hɔ:k	?at	to?	hwe:?
(name)	study	at	to	Hué city
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	P	N	N
+prnm	-trns	+lctv	+rltr	-unit
+prpr				

Like pronoun pronominal nouns, proper nouns are inherently marked for plurality, as can be shown by the reciprocal verb test (section 7.4.1). All proper pronominal nouns found so far in the data are [+sngl] and cannot occur alone in the NOMINATIVE case form position of reciprocal verbs, which require plural or coordinative ‘subjects’. Moreover, they are not unit nouns since they cannot be dependents of numeral nouns, as in S160b. Both classes, proper and pronoun pronominal nouns, appear inherently to have the feature [+dfnt] since neither can take demonstratives as dependents, as in S160d.

S 160: Proper and pronoun pronominal nouns plurality and definiteness

(a) ‘Nam (he) ate already.’

na:m ₃	ca:	dɔ:j	je:
Nam	eat	rice	already
N	V	N	Adv
+prnm			
+prpr			
+sngl			
-spkr			
-adrs			
+dfnt			

(b) ‘*One Nam (he) ate rice.’

*mɔ:j	na:m ₃	ca:	dɔ:j
one	Nam	ate	rice
N	N	V	N
+nmrl	+prnm		
?[+unit]	+prmn		
	+sngl		
	-spkr		
	+adrs		
	+dfnt		

(c) ‘I ate rice.’

ki:	ca:	dɔ:j	je:
Nam	eat	rice	already
N	V	N	Adv
+prnm			
-prpr			
+sngl			
+dfnt			
+spkr			
-adrs			

(d) ‘*This I ate rice.’

*ki:	?n.nɛh	ca:	dɔ:j
I	this	ate	rice
N	N	V	N
+prnm	+prnm		
-prpr	+dmns		
+sngl	+dfnt		
+dfnt			
+spkr			
-adrs			

Proper pronominal nouns can be the dependents of social pronouns, the latter of which provide socially conditioned respect, as in S161.

S 161: Proper pronominal nouns with social pronominal nouns

‘Nam is the son of Mr. Pon.’

na:m	ʔa.kaj	kø:n	ʔm.pi:t	po:n
Nam	child	boy	mister	Pon
1ndex	2ndex	3ndex	4ndex	5ndex
N	N	N	N	N
+prnm	+unit	-unit	+prnm	+prnm
+prpr			+socl	+prpr
			5([+prnm])	
			5([+prpr])	

Since proper pronominal nouns have definite reference and plurality, they cannot take demonstrative noun dependents nor be headed by numerals, whereas common nouns can be derived names that do not have such definite reference or plurality. The latter instance is seen in the usage of names as general reference (e.g., ‘My best friend, John₁’ versus ‘A John₂ who just called you on the phone’). Again, as was the case in Figure 37, this difference in usage implies derivational relationships between those homophonous forms and an expected accompanying semantic difference as well.

7.6.2.5 Social Pronominal Nouns

Pacoh social pronominal nouns, formally marked by the feature [+socl], have the same anaphoric reference that other subclasses of pronominal nouns do. Unit nouns cannot take these pronominal nouns as grammatically-selected dependents, though these social pronominal nouns themselves carry the feature [+unit] and may be the dependents of numeral nouns. Saying that these are [+unit] pronominal nouns rather than [+prnm] unit nouns is based on the following reasons.

- (1) Like other pronominal nouns, they cannot be possessed by a dependent noun bearing the COR case relation.
- (2) They generally do not take noun dependents, unlike unit nouns.
- (3) As pronouns, they require the ability to be [\pm plrl] and [\pm dfnt], unlike unit nouns, which can be underspecified for either feature.
- (4) Their primary linguistic function is anaphoric, not quantifying.

Pacoh social pronominal nouns are clearly nouns since they all can serve in case-marked positions.

Social pronominal nouns are differentiated from other primary and secondary categories of nouns by a number of syntactic and semantic properties. They differ from all other pronominal nouns by having the feature [+unit] as seen by their ability to be dependents of numeral nouns. Social pronominal nouns differ from pronoun pronominal nouns in that they express politeness by referring to the speaker, listener, and others based on gender and age. Also, these social pronominal nouns do not have possessive or locative counterparts, the consequence of which is that they can serve in case-marked positions without restrictions, unlike Pacoh possessive pronouns, and may be the dependents of locational relator nouns, unlike Pacoh dative pronouns.

All of these words are derivationally related to nouns with human reference, such as kinship terms and professions, and they still carry the feature [+humn].⁵⁹

⁵⁹ There are some occasional noted variants in story-telling where animals are personified.

S 162: Social pronominal noun as [+humn]

'I'm giving this to you, sir.'

ki:	jo:n	?n.nɛh	?a.dɔ:	?a.ca:j
I	give	this	to	gentleman
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	N	N
		+dmns	+rltr	+prnm
			+lctn	+socl
			+prsn	+humn
			5[+humn]	

Social pronominal nouns are the only pronominal nouns that can take demonstratives,⁶⁰ specifically marking 3rd person, though it is not entirely necessary since features for person can be determined in the discourse context. Social pronominal nouns are the only pronominal nouns that are underspecified for definiteness and plurality, like their kinship common noun derivational correlates. Demonstrative pronominal nouns have the feature [+dfnt] that social pronouns of address lack. Also, demonstratives refer to 3rd person ([-spkr], [-adrs]), providing this to their regent pronominal nouns.

S 163: Social pronominal noun receiving [+dfnt]

'he (respectful)'

?a.ca:j	?ŋ.koh
elder male	that
N	N
+socl	+dmns
	+dfnt
	prdc
	Prv

7.6.2.5.1 Person, Age, and Gender

Social pronominal pronouns, being based primarily on the system of kinship terms, differentiate not only gender, but also a variety of ages relative to the speaker and

⁶⁰ Another possibility is that these are lexicalized forms formed through ordinary word-formation strategies.

listener. For example, a female speaking to a somewhat older male addresses herself as *ʔa.ʔɛ:m* ‘somewhat younger person’ while addressing him as *ʔa.ca:j* ‘somewhat older male’. Likewise, he addresses her and refers to himself using the same terms, namely, *ʔa.ʔɛ:m* for her and *ʔa.ca:j* for himself. Table 52 lists some of the more common terms found in the data and also the meaning of their familial common noun counterparts.

Form	Social Pronominal Nouns	Familial Common Nouns
<i>ʔa.ca:j</i>	somewhat older male	older brother
<i>ʔa.ʔɛ:m</i>	somewhat younger person	younger sibling
<i>tʰəj-jaw</i>	teacher	teacher
<i>ʔi.taʔ</i>	nurse	nurse
<i>ʔa.ʔi:</i>	mother	mother

Table 52: Pacoh term of address pronouns

The social pronominal nouns’ pragmatic usage is complex and beyond the scope of this work. The system shares some similarities with that of Vietnamese in expressing politeness and familiarity. However, pronouns are used perhaps as much as social pronominal nouns in Pacoh, while in Vietnamese, pure pronouns are used in very restricted social circumstances.⁶¹

As human pronominal nouns, social pronouns can function as 1st, 2nd, and 3rd person. These nouns have no word shapes associated with person and plurality, but instead cooccur with numerals and demonstrative nouns. Each social pronoun is inherently [+sngl] and may be marked plural by numeral noun regents, though one phonological form can represent three derivationally related words differentiated by person.

⁶¹ For a description of the Vietnamese system, see Thompson 1984-85:299-306.

Form	Gloss	±spkr	±adrs
?a.ʔɛ:m ₁	1s. younger person	+	-
?a.ʔɛ:m ₂	2s. younger person	-	+
?a.ʔɛ:m ₃	3s. younger person	-	-

Table 53: Social pronominal noun derivation

As for plurality, social pronominal nouns may be marked by person indefinite numeral nouns (section 7.5.2.3), as in S164.

S 164: Social pronoun with person indefinite numeral noun

‘Those few young people.’

bjəʔ	?a.ʔɛ:m	?ŋ.koh
few	young people	that
1ndex	2ndex	3ndex
N	N	N
+numl	+prnm	+dmns
+prsn	+socl	
2[+unit]	+unit	
2[+humn]	+humn	

7.6.2.5.2 Pacoh Social Pronominal Nouns versus Common and Unit Nouns

Pacoh social pronominal nouns differ from the other pronominal noun subclasses by having the feature [+unit], which means that numeral nouns may take them as dependents. Table 54 shows grammaticality judgements by native speakers, where an asterisk marks bad combinations and question marks indicate mixed responses from different Pacoh consultants. Social pronominal nouns are always able to cooccur with numeral nouns. Tests of the use of numeral nouns with pronouns received mixed results.

Subclass	Example	Gloss
[-dfnt]	*pɛ: ?n.naw	‘?Three whoevers’
[+dmns]	*pɛ: ?n.nɛh	‘These three’
[-socl]	?pɛ: dɔ:	‘Those three people’
[+socl]	pɛ: ?a.ca:j	‘The three of us/you/them’

Table 54: Differentiating social pronominal nouns from other subclasses

Though Pacoh social pronominal nouns carry the feature [+unit], they differ from non-pronominal unit nouns in that social pronominal nouns do not take common noun complements. Social pronominal nouns cannot serve as the dependents of unit nouns, as in the asterisk-marked example in Table 56. Moreover, unit nouns can be the highest regent of a noun phrase (i.e., without a cooccurring numeral noun regent) and be assigned the COR case.

Subclass	Example	Gloss	Translation
[-unit]	ba:r na? ?a.ʔε:m ₁	(two-unit-sibling)	'the two siblings'
[+prmm]	ba:r ?a.ʔε:m ₂ *ba:r na? ?a.ʔε:m ₂	(two-wc/you/they)	'They two of us/you/them'

Table 55: Pacoh social pronominal nouns versus common nouns

7.6.3 Pronominal Nouns as Regents

Pacoh pronominal nouns are very restricted in the kinds of dependents they can take. For the most part, they do not take predicate adjuncts, such as stative verbs or descriptive nouns, and none can take nouns bearing the COR case. However, some can take the extension relator noun, which typically has a verbal dependent.

S 165: Pronominal noun with relator noun dependent

'He who is prosperous.'

dɔ:	ʔən	ʃuk-pər.ɲa:
he	that	prosperous
1 _{index}	2 _{index}	3 _{index}
N	N	V
+prmm	+rltr	+sttv
2([+rltr])	+xtns	prdc
2([+xtns])	3([prdc])	Prv
2([Prv])	Prv	prdc
2([prdc])	prdc	

Combinations like that in S165 are only found with 3rd person pronominal nouns from different subclasses (e.g., social, pronouns, and indefinite pronominal nouns).

As noted in section 7.6.2.5.1, social pronominal nouns may take both proper and demonstrative pronominal nouns as dependents, as shown in S166.

S 166: Social pronominal noun dependents

(a) 'Those gentlemen.'			(b) 'Mr. Nô'	
?a.pɛ:	?a.ca:j	?ŋ.koh	?a.ca:j	no:
few	gentleman	that	gentleman	NAME
N	N	N	N	N
+nmrl	+socl	+dmns	+socl	-prmn

7.6.4 Summary for Pronominal Nouns

In this subsection, Pacoh pronominal nouns are shown to form a distinct subclass of nouns based on word-formation, syntactic, semantic, and pragmatic criteria. The primary features are shown in Table 56.

Subclass	Syntactic Characteristics	Semantic and Pragmatic Characteristics	Associated Word Shapes
<i>Indefinite</i>	(1) [-dfnt] (2) [±ntrg] (3) [+plrl]	Refers to unknown or non-specific entity	...mɔ:|. [?ŋ...
<i>Demonstrative</i>	(1) free (2) bound	Indicates position relative to speaker	[?ŋ...
<i>Social pronominal nouns</i>	[+unit]	Uses familial terms for politeness and intimacy	[?a ₂ ...
<i>Pronouns</i>	(1) PAT, AGT (2) COR (3) pssn	General reference Marking beneficiary Marking possessive	ZERO [?a ₁ ... [?ŋ...

Table 56: Summary of Pacoh pronominal noun characteristics

One property shared by all Pacoh pronominal noun subcategories is lexical choice based on speaker-addressee factors. The use of pronouns is governed mainly by person and plurality. Age and gender of the speaker and listener condition choice of social pronominal nouns. Demonstratives are chosen on the basis of the speaker's perception of the distance of the item referred to. These facts further highlight the discourse-related

function of pronominal nouns in Pacoh speech and the need for such rules to be developed in Lexicase.

7.7 RELATOR NOUNS

The general syntactic function of Pacoh relator nouns is to satisfy case-related feature requirements of regent verbs, prepositions, and nouns, generally providing features that the dependents of the relator nouns do not have. There are five main subclasses of Pacoh relator nouns based primarily on the case relations they may bear. Extension relator nouns, which take predicate nouns or verbs as complements, may bear the feature [prdc] as dependents of nouns. All other subcategories take only nouns as dependents. Possessional relator nouns bear the COR case relation as dependents of nouns. Locational relator nouns bear the LOC case relation as dependents of locative prepositions or verbs. Instrumental relator nouns bear the MNS case relation as dependents of mode verbs. Dative relator nouns may the COR case relation as complements of correspondent verbs and as adjuncts of verbs in general. Each of these subcategories is demonstrated in S167 to S171.

S 167: Extension relator noun

'people who are very capable'

ti.kuəj	ʔən	ho:j	li:
person	that	capable	very
1ndex	2ndex	3ndex	4ndex
N	N	V	Adv
-unit	+xtns	prdc	
2[+xtns]	+rltr		
	Prv		
	prdc		
	3[prdc]		

S 168: Possessional relator noun

‘This is the teacher’s.’

?n.nəh	?n.də:	t ^h əj
this	possession of	teacher
1ndex	2ndex	3ndex
N	N	N
Nom	+rltr	
PAT	+pssn	
	3[N]	
	prdc	

S 169: Instrumental relator noun

‘(I) hit the mouse with a stick.’

puh	?a.bil	tək	du:j
hit	mouse	with	stick
1ndex	2ndex	3ndex	4ndex
V	N	N	N
3[+nstr]		+nstr	
		Acc	
		MNS	
		4[N]	

S 170: Locational relator noun

‘(We) raised chickens under the hut.’

ciəm	?n.truəj	to?	kər.ru:ŋ	duj
raise	chickens	at	underneath	house
1ndex	2ndex	3ndex	4ndex	5ndex
V	N	P	N	N
4[+lctn]	Acc	+lctn	+xtns	
	PAT	+lctv	+lctn	
		4[+lctn]	Acc	
		Lcv	LOC	
		LOC		

S 171: Dative relator noun

‘He taught Nam the lesson.’

də:	pa.cə:m	ba:j	?a.də:	na:m
3s	teach	lesson	to	NAME
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	N	N
Nom	+trns	-unit	+rltr	-unit
AGT	+crsp	Acc	+datv	
	+cstv	PAT	Dat	
	4[+datv]		COR	
	4[COR]		5[N]	

In addition to the already stated primary relator noun subcategories, certain subcategories have secondary subclasses. The feature [\pm prsn] divides the possessional relator noun subcategory. Dative relator nouns are split by the feature [\pm bnfc]. The following sections characterize Pacoh relator nouns, summarize relator noun subcategories, and deal with each subcategory in more detail.

7.7.1 Characterization of Relator Nouns

Sak-Humphry (1997, section 8.1.1) discussed different analyses of Khmer relator nouns by researchers who analyzed them as alternately nouns or prepositions. Sak-Humphry showed this category of words to consist of nouns due to their ability to function as ‘subjects’, ‘objects’, and nominal predicates. In her analysis, the dependency of locational relator nouns on locative verbs and locative prepositions differentiates them from extension relator nouns, which cannot serve in similar positions. Sak-Humphry also used a number of syntactic tests (clefting, preposing, stranding) to determine that these words are not adverbs or verbs, but are nouns. Furthermore, those tests helped differentiate between locational prepositions and relator nouns.

The clefting, preposing, and stranding tests that Sak-Humphry (*ibid.*) used to distinguish relator nouns and prepositions from verbs and adverbs, and relator nouns from prepositions, cannot be easily applied to available data on Pacoh. I found little absolute negative data, though the positive data is clear. Though occurrences of preposed ‘objects’ of verbs are common in existing data, this never happens with dependents of prepositions or relator nouns, thus differentiating verbs from relator nouns and prepositions. For example, the PAT of a transitive verb can be preposed as the focused

theme, as in S172. The index required by the verb for case assignment is recovered from the theme position.

S 172: Theme noun and transitive verb

'As for the *sing* trap. I don't know how to make it.'

fɪŋ	ki:	ləjʔ	cɔ:m	taʔ
trap	Is	no	know	make
1index	2index	3index	4index	5index
N	N	Adv	V	V
them	Nom			1[Acc]
	AGT			1[PAT]

Locative prepositions can occur in the clause-initial position with their noun complements, as in S173.

S 173: Locational preposition in sentence-initial position

'He's going to school.'

toʔ	triə:ŋ	dɔ:	po:k
to	school	3s	go
1index	2index	3index	4index
P	N	N	V
+lctn			1([+lctn])

However, in available data, the locational relator noun and its complement only occurs after its regent verb. Native Pacoh speakers do not accept sentences in which locative relator nouns are preposed, as is the case for the asterisk-marked sentence in S174.

S 174: Locative relator noun in standard position

'He's at home.'

(a) *daŋ	duŋ	dɔ:	ʔat
(b) dɔ:	ʔat	daŋ	duŋ
he	located	at	home
1index	2index	3index	4index
N	V	N	N
	+lctv	+rltr	-unit
	2[+lctn]	+lctn	-lctn
		4[-lctn]	

While prepositional phrase adjuncts of verbs are commonly clause-initial in the data, preposed relator noun adjuncts of prepositions never occur, suggesting a difference between those two parts of speech (see section 8.3.1, Prepositions versus Relator Nouns).

Other aspects of Pacoh relator nouns show that they are nouns and not prepositions or a part of speech other than the eight currently used in the Lexicase theory. In addition to case-marking properties, Pacoh relator nouns may be the dependents of the nominal negation extension verb, *?ih*. Further details on the distribution of each subcategory are explained in each respective subsection.

7.7.2 Relator Noun Subcategories

Pacoh relator nouns are subcategorized by the features $[\pm\text{xtns}]$, $[\pm\text{pssn}]$, $[\pm\text{lctn}]$, and $[\pm\text{nstr}]$ into five primary subcategories: extension, possessional, locational, instrumental, and dative relator nouns.

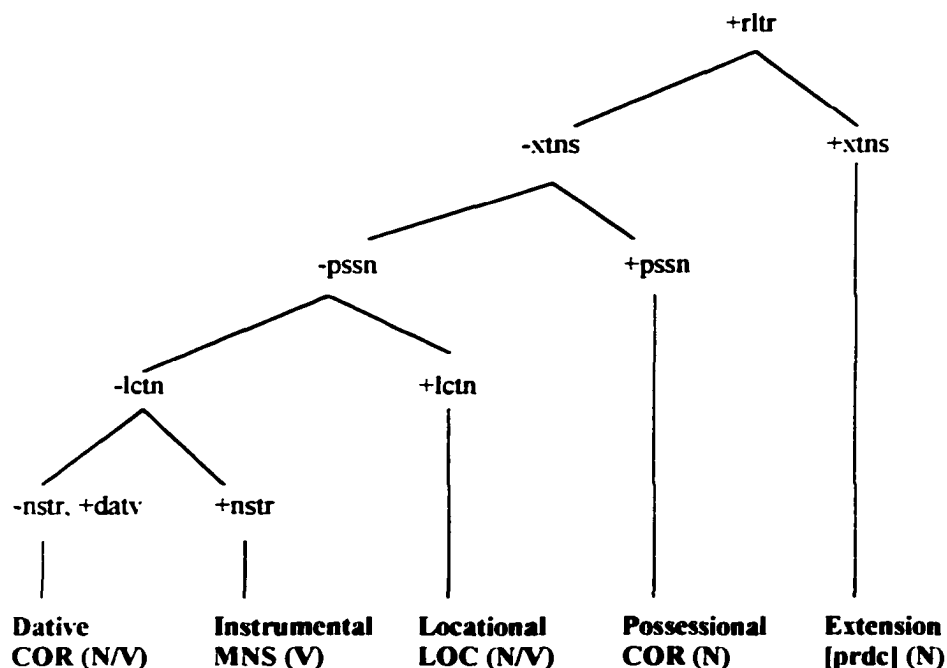


Figure 38: Subcategorization of Pacoh relator nouns

Under each category is the case relation that relator nouns in each subclass may be assigned and whether those nouns bear the said case relations as dependents of nouns, verbs, or both nouns and verbs.

The feature [\pm xtns] determines whether or not a word takes a predicate as a dependent. Extension nouns take either predicate nouns or verbs, while all other subclasses take only dependent non-predicate nouns. Possessional relator nouns serve as COR complements of nouns as case-assigned elements. All non-possessional, non-extension relator nouns can be the dependents of verbs. Locational relator nouns can be the LOC dependents of both verbs and nouns. Instrumental relator nouns serve as MNS complements to mode verbs. Finally, dative relator nouns (marked [+datv] in Figure 38 above) can be the COR complements of transitive correspondent verbs and COR adjuncts of other kinds of verbs and nouns. Table 57 matches relator noun subcategories with their potential associated combinations of case forms and case relations.

NOUN	+xtns	+pssn	+lctn	+nstr	+datv
CASE					
Nom-PAT	+	-	+	-	-
Nom-AGT	+	-	-	-	-
Acc-PAT	+	-	-	-	-
Acc-LOC	-	-	+	-	-
Acc-MNS	-	-	-	+	-
Dat-COR	-	-	-	-	+
Prv-prdc	+	-	-	-	-
Prv-COR	-	+	-	-	+
Prv-LOC	-	-	+	-	-
prdc	+	-	-	-	-

Table 57: Relator nouns and case

Most relator nouns have specialized grammatical roles they can take and thus have rather limited distributions. Only extension nouns show a wider range of functions, since they

can appear in the NOMINATIVE, ACCUSATIVE, and PREDICATIVE case forms and be the heads of finite clauses. Examples of each are provided in the respective subsections on each of the three major subcategories.

7.7.2.1 Dative Relator Nouns

Dative relator nouns have the feature [+datv], which means they mark the DATIVE case form and can be assigned the COR case relation. The dative relator noun is subdivided by the feature [±bnfc]. There are two homophonous entries in this subcategory, *ʔa.do₂* ‘to’ and *ʔa.do₃* ‘for’. Both words bear the COR case relation as dependents of verbs. However, the non-beneficiary form *ʔa.do₂* ‘to’ is a complement of transitive correspondent verbs and the beneficiary *ʔa.do₃* ‘for’ is an adjunct of any class of verb.

In S175, the transitive correspondent verb ‘give’ requires three complements: an AGT in the NOMINATIVE case, a PAT in the ACCUSATIVE case form, and a COR in the DATIVE case form. The non-beneficiary relator noun aids in semantically expressing the recipient of the PAT noun.

S 175: Non-beneficiary dative relator noun

‘They give gifts to the girls.’

ŋa:j	ʝo:n	pi.ne:ʔ	ʔa.do:	ku.mq:r
3s	give	gift	to	girl
1 _{index}	2 _{index}	3 _{index}	4 _{index}	5 _{index}
N	V	N	N	N
+pmn	+trns	-unit	+rltr	-unit
Nom	+crsp	Acc	+datv	
AGT	1[AGT]	PAT	Dat	
	3[PAT]		COR	
	4[COR]			

Transitive correspondent verbs lacking non-beneficiary dative complements are not grammatical in Pacoh.

In S176, the beneficiary relator noun does not refer to the recipient of a noun but rather the goal or beneficiary of an action.

S 176: Beneficiary dative relator noun

'This trap is made for mice.'

ʃiŋ	ʔn.nɛh	taʔ	ʔa.dɔ:	ʔa.bil
trap	this	make	for	mice
1index	2index	3index	4index	5index
N	N	V	N	N
-unit	+dmns	-trns	+datv	-unit
		4([COR])	Dat	
			COR	

These two forms are homophonous with the dative pronominal noun 'to 3s'. That form does not require a noun complement, while these relator nouns do. S177 is not grammatical without the relator noun, nor is the sentence grammatical without the noun 'mouse'.

S 177: Dative relator noun as main predicate

'The *kup* trap is for mice.'

kip	ʔa.dɔ:	ʔa.bil
<i>kup</i> trap	for	mouse
1index	2index	3index
N	N	N
Nom	+rltr	-unit
	+datv	
	+bnfc	
	prdc	
	3[N]	

Further evidence of the nominal status of this class of words is that the negation of the predicate requires the nominal negation extension verb *ʔih*, though this is rare in available data.

7.7.2.2 *Extension Relator Nouns*

The only Pacoh extension relator noun ʔən_1 is similar to a relative pronoun in function since it followed by a predicate and modifies its regent noun. This relator noun satisfies the general contextual possibility of unit and common nouns, [$\text{?}([\text{prdc}])$]. In Pacoh, this feature can be satisfied by verbs and predicate nouns.

S 178: Extension relator nouns

(a) 'The very skilled people.'

ti.kuəj	ʔən	ho:j	li:
people	that	skilled	very
1ndex	2ndex	3ndex	4ndex
N	N	V	Adv
	prdc		
	Prv		
	prdc		

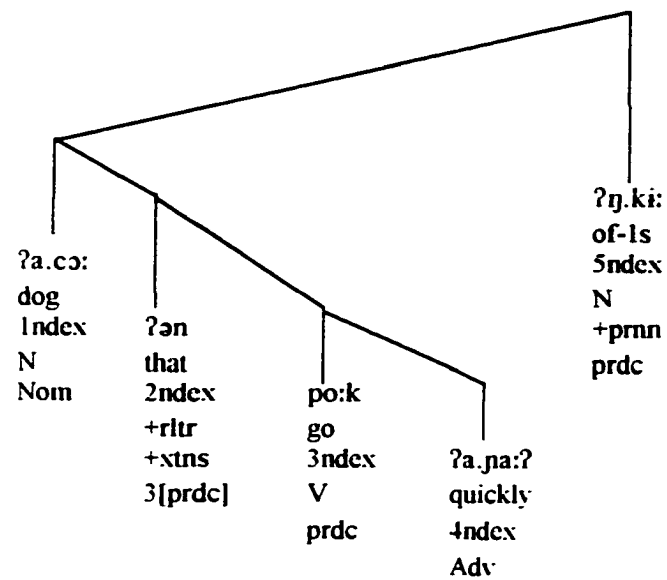
(b) 'Those fellows (literally 'They who are male')'

ŋa:j	ʔən	la.ləw
3p	that	male
1ndex	2ndex	3ndex
N	N	N
2([Prv])	+rltr	Prv
2([prdc])	-pssn	prdc
	Prv	
	prdc	
	3[prdc]	

The general extension relator is unrestricted in the kinds of noun and verb dependents it can take. In S178a above, the relator noun takes a stative verb; in S178b, a predicate noun. In S179 below, the relator nouns takes a non-stative verb; and in S180 below, a predicate numeral noun.

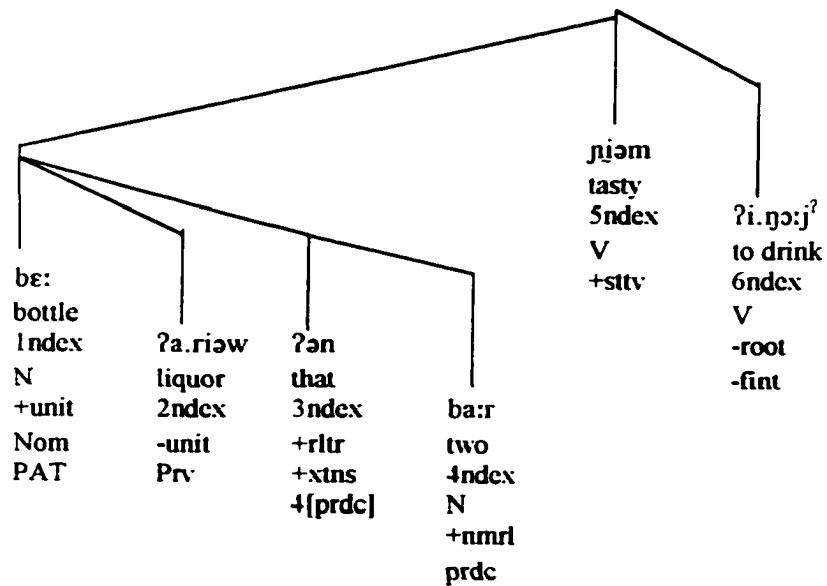
S 179: General relator noun

‘The dog that goes fast is mine.’



S 180: General relator noun with numeral noun dependent

‘The second bottle of wine is good to drink.’



As noted in section 7.5.3.2, ordinals are formed by the use of the extension relator noun and a numeral dependent, as in S181.

S 181: Ordinal with relator and numeral

‘The second bottle of wine was tasty.’

pɛ:	ʔa.rɪəw	t ^h i:	ba:r	ɲjəm	ʔi.ŋɔ:j ^ʔ
bottle	wine	(-th)	two	tasty	to drink
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	N	N	N	V	V
		+rltr	+nmrl		

The use of *t^hi:*, a Vietnamese loanword (having the same phonological shape, but lacking a tone), is very restricted in that it only cooccurs with numeral nouns. It is possible that it was borrowed unanalyzed and has become part of a WFS that creates ordinals. While *ʔən* can take any predicate, *t^hi:* only cooccurs with numeral nouns.

7.7.2.3 Instrumental Relator Nouns

Three instrumental relator nouns occur in the data: *daŋ₂*, *tək*, and *baŋ*.⁶² The first word, which is derivationally related to the locational relator noun *daŋ₁* ‘place’, is the most commonly used of the three in the data, while the other two forms appeared primarily in Pacoh spoken in Quảng Trị province.⁶³

⁶² The first form, *daŋ₂*, is seen in all varieties of Pacoh. The latter two are loans. The form *tək*, an apparent Bru loan with the same meaning and phonological shape, is used by Pacoh speakers living in the primarily Bru-speaking territories in Quảng Trị province. The Vietnamese loanword *baŋ* shares meaning and phonological shape (except for the lack of tone) with Vietnamese *bằng* ‘by/with.’

⁶³ All speakers used or were familiar with the form *daŋ*. The Bru loan *tək* was found in Quảng Trị province and not in Thừa Thiên Huế. The Vietnamese loan *baŋ* was used by speakers in both regions but the speakers were themselves fluent second-language speakers of Vietnamese.

S 182: Instrumental relator noun

‘Hit the mouse with a stick.’

puh	ʔa.bil	tək	du:j
hit	mouse	with	stick
1 _{ndex}	2 _{ndex}	3 _{ndex}	4 _{ndex}
V	N	N	N
+trms	-unit	+rltr	-unit
+mode		+nstr	
3(+nstr)			

The word *baŋ* may be used as the complement of non-finite verbs that have the [ʔi... word-initial substring.

S 183: Instrumental relator noun referring to material

‘As for the *kup* trap, it is made of stone.’

kip	ʔi.taʔ	baŋ	bul
<i>kup</i> trap	to make	with	stone
N	V	N	N
-unit	-trms	+rltr	
them	-fint	+nstr	
		MNS	

There is evidence that these words can serve as root predicates. In S184, the predicate is marked off by the topic-marking extension preposition *ki:*.

S 184: Instrumental relator noun referring to material

‘As for the prop. it’s of wood.’

kəl.laʔ	ki:	baŋ	ʔa.lə:ŋ
prop	(link)	with	wood
N	P	N	N
-unit	+xtns	+rltr	-unit
them		+nstr	
		prdc	

Instrumental relator nouns differ from prepositions, such as locational prepositions. In S184, the relator noun phrase cannot be located in the clause-initial position, while locational prepositional phrases can. Also, instrumental relator nouns differ from locational relator nouns in that they do not occur with true impersonal verbs.

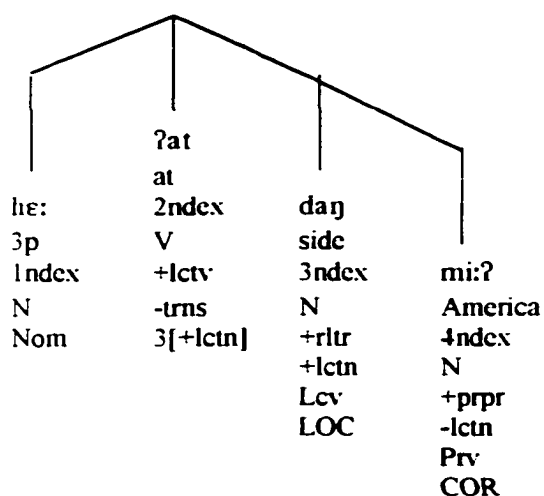
7.7.2.4 Locational Relator Nouns

Locational relator nouns have the feature [+lctn], satisfying the contextual requirement of locative verbs and prepositions, [? [+lctn]]. Locational relator nouns share the capacity to occur as the complements of the locative verb *ʔat* 'to be situated at'.

These locational relator nouns then take non-locational nouns as complements

S 185: Locative relator noun

'We live in America.'



Locational relator nouns in Pacoh include at least those shown in Table 58 below.

No.	Gloss	Pacoh
1.	at (the place of)	daŋ
2.	at (the place of)	toʔ
3.	back	ta.tu:n
4.	front	məm.mat
5.	inside	kəl.luŋ
6.	middle	tər.di:
7.	outside	təl.tiəh
8.	top	ʔi.niəŋ
9.	top	ʔm.piən
10.	underneath	ʔi.di:p

Table 58: Pacoh locational relator nouns

In the TOPIC case form, these locational nouns are typically the dependents of impersonal verbs of existence, as in S186.

S 186: Relator noun in the TOPIC case form

‘Under the *klang* floor layer are 3 *anuh* floor layers.’

ta.di:p	kla:ŋ	pɛ:	?a.nu:h
underneath	klang layer	three	anuh layer
N	N	N	N
+rltr		Prv	
+lctn		+exst	
Tpc		prdc	
them		0[PAT]	
		1[them]	

The most general locational relator noun *daŋ* ‘at the place/side of’ occurs most often in the data, perhaps due to its minimally restrictive semantic features. The form *toʔ₃*, which is derivationally related to the verb *toʔ₁* ‘to arrive’ and *toʔ₂* ‘to’, had the same distribution.

S 187: Specific locational relator noun

‘I live there.’

(a)	*ki:	?at		?ŋ.koh
(b)	ki:	?at	toʔ	?ŋ.koh
	1s	reside	at	there
	1ndex	2ndex	3ndex	4ndex
	N	V	N	N
	+prsn	+lctv	+rltr	+dmns
		3[+lctn]	+lctn	-lctn
			4[N]	

This example also shows that demonstrative nouns are not [+lctn] nouns, since S187a is not acceptable.

7.7.2.5 Possessional Relator Nouns

Pacoh possessional relator nouns include two words differentiated by the feature [±prsn]. The form *?n.doʔ*, historically derived from [ʔən] plus the third-person singular

pronoun, [dɔ:], takes only nouns with the feature plus human. The other form is the non-person general possessional relator noun, ʔən₂.

S 188: Specific possessional relator noun

(a) 'My house'			(b) 'His house'		
duŋ	ʔən	ki:	duŋ	ʔn.dɔ:	ʔa.ca:j
house	of	1s	house	of	he
1ndex	2ndex	3ndex	1ndex	2ndex	3ndex
N	N	N	N	N	N
2([Prv])	+rltr	Prv	2([Prv])	+rltr	+humn
2([prdc])	+pssn	prdc	2([prdc])	+pssn	Prv
	Prv			+prsn	prdc
	COR			Prv	
	3[prdc]			COR	
				3[prdc]	
				3[+humn]	

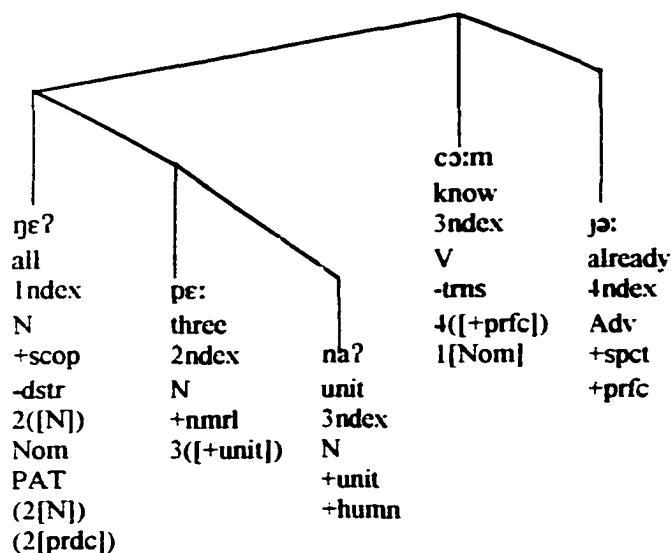
7.8 SCOPE NOUNS

Pacoh scope nouns (referred to as 'quantifiers' by S. Watson 1976a) are those nouns that occur as the leftmost nouns in all multiple-noun noun phrases, making them the highest regents in those syntactic constituents. A scope noun takes only one dependent noun, which immediately follows. Scope nouns refer semantically to the totality of their dependents, having meanings such as 'all', 'any', and 'every'. Scope nouns do not require dependents and may occur as bare nouns.

The term 'scope', which is formally indicated by the feature [+scop], is chosen for the semantic function of these nouns, though their syntactic distribution is what is used to distinguish them from other subclasses of nouns. There are three subclasses of scope nouns: general non-distributive, mono-distributive, and poly-distributive. As regents, general non-distributive scope nouns may take any of the other subclasses of nouns. The distributive scope nouns take either numeral or unit noun dependents. Consider S189.

S 189: Non-distributive scope noun

'All three of those people know already.'



The scope noun takes as its immediate dependent the numeral 'three', though the dependent of that non-distributive scope noun could be a noun belonging to another noun subcategory, such as a pronominal noun, a unit noun, or a common noun.

7.8.1 Characterization of Scope Nouns

S. Watson (1976a: 220) noted a number of words belonging to a class she called 'numeral quantification'. Some of those words are here analyzed as numeral nouns (see section 7.5.1). Other words she included in that category are here considered to be scope nouns, including *ηε?*, *ka:*, and *ηε?-ka:* 'all/the whole', *tal* and *tɔ:f* 'each', and *ki:p* 'any'.

Scope nouns do constitute a distinct noun subcategory based on their distribution in noun phrases. They differ from numeral nouns since they can occur with dependent non-unit nouns (e.g., *ηε? pe:?* 'all the bananas', not **ba:r pe:?* 'two bananas').

Furthermore, they can take numerals as dependents. They are not common nouns since

they cannot be selected dependents of unit nouns (e.g., *ba:r lam ηε?* ‘*two of those all’).

They are not pronominal nouns since they can take COR adjuncts indicating possession.

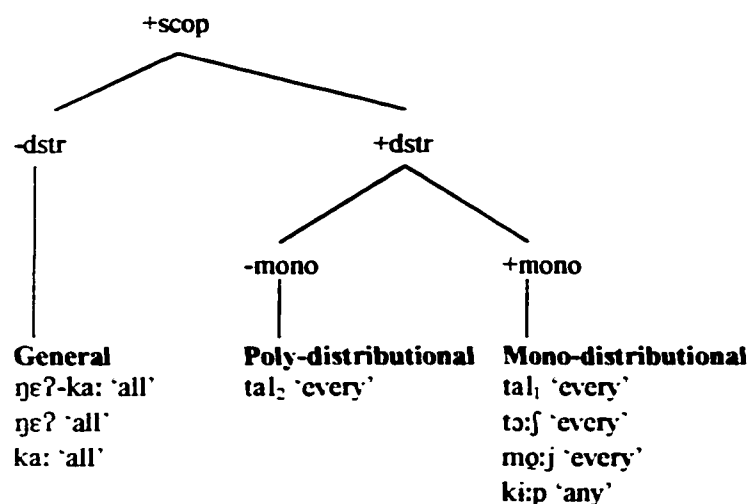
They are not unit nouns, being unable to serve as dependents of numerals (e.g.,

**ba:r ηε?* ‘*three all’ is ungrammatical). Scope noun subcategories are discussed in

subsequent sections.

7.8.2 Scope Noun Subcategories

Scope nouns are subcategorized by the features [\pm dstr] and [\pm mono] into general non-distributive, mono-distributive, and poly-distributive scope nouns.



The feature [\pm dstr] in scope nouns indicates that a certain semantic relationship obtains between scope nouns and their dependents. Distributive scope nouns semantically refer to their dependents distributively, while non-distributive scope nouns refer to the whole of their dependents, emphasizing entirety. The result of this semantic property on syntactic distribution is that, while a non-distributive scope noun can take

any noun subclass (besides scope nouns) as adjuncts, a distributive scope noun can take only a numeral or unit noun adjunct.

$$\text{RR-N15} \quad [+dstr] \quad \rightarrow \quad \left[\begin{array}{l} ?([+nmrl]) \\ ?([+unit]) \end{array} \right]$$

The feature $[\pm mono]$ has to do with the plurality of dependent nouns. Mono-distributive scope nouns take only singular numeral noun and unit noun dependents.

$$\text{RR-N16} \quad [+mono] \quad \rightarrow \quad [?([+sngl])]$$

Poly-distributive scope nouns have no requirements and can take either singular or plural dependent nouns.

S 190: Mono- and poly-distributive scope nouns

$[-mono]$	tal ₂ puən lam pe?	(each-four-unit-banana)	'each of the four bananas'
$[+mono]$	tal ₁ na? juən	(each-Vietnamese-person)	'each Vietnamese person'
$[+mono]$	ki:p ?l.lam ?a.lik	(any-unit-pig)	'every pig'
$[+mono]$	mə:j ?n.na?	(every person)	'every person'

Finally, there are examples of non-distributive scope nouns without noun dependents, but there are no examples of bare distributive scope nouns.

7.8.2.1 Non-Distributive Scope Nouns

Non-distributive scope nouns consist of the three words, *ŋɛʔ-ka:*, *ŋɛʔ*, and *ka:*, all meaning 'all'. These nouns can take dependent nouns from any noun subcategory (other than scope nouns) with no known selectional restrictions. Consider S191.

S 191: Scope noun with pronoun dependent

‘All of them are Pacoh people.’

ŋɛ?	ʔa.pɛ:	ti.kuəj	pa.kəh
all	3p	unit	Pacoh
1ndex	2ndex	3ndex	4ndex
N	N	N	N
+scop	+prmn	+unit	-prpr
	+plrl	+clsf	
		prdc	

In S191, the scope noun refers to all of the members of a set. In S192, the scope noun refers to the totality of a single unit.

S 192: Scope noun with single unit

‘My whole body hurts.’

ʔa.ʔaj	ŋɛ?	ca?
hurt	whole	body
V	N	N
+crsp	+scop	-unit
	-dstr	

Non-distributive scope nouns can occur as a bare noun in a case-marked position.

S 193: Scope noun as a bare noun phrase

‘All went.’

ŋɛ?	po:k	jə:
all	go	already
1ndex	2ndex	3ndex
N	V	Adv
+scop	-trns	+spct
-dstr		+cml

7.8.2.2 Poly-distributive Scope Noun

The single word *ta*₂ ‘each’ is the only poly-distributive scope noun. It is marked [-mono], which simply means it does not require a singular dependent. It has no constraint on plurality of its dependent and can take either singular and plural noun dependents, as in S194a and b.

S 194: Poly-distributive scope noun

(a) 'Each four dogs.'

tal ₂	puən	lam	?a.cə:
each	four	unit	dog
1ndex	2ndex	3ndex	4ndex
N	N	N	N
+scop	+nmrl	+unit	-unit
+dstr	+dfnt		
-mono	-sngl		

(b) 'Each person.'

tal ₂	?n.na?
each	one-unit
1ndex	2ndex
N	N
+scop	+unit
+dstr	+sngl
-mono	

There are no examples of these nouns without noun dependents.

7.8.2.3 Mono-distributive Scope Nouns

Mono-distributive scope nouns consist of the three words *tə:f*, *tal₁*, and *mə:j*, all meaning 'every'. They all have the feature [+mono], which means they require the feature [+sngl] of their numeral and unit dependents.

S 195: Mono-distributive scope nouns ('every')

(a) 'Every person sat and ate.'

tə:f	?n.na?	ʃjər	ci.ca:
every	one-unit	descend	eat
1ndex	2ndex	3ndex	4ndex
N	N	V	N
+scop	+unit		
+dstr	+sngl		
+mono			
2([+sngl])			

(b) 'Every time, the teacher calls us.'

mə:j	kən.ti?	t ^h əj.jaw?	pa.ʃə:l	?a.na:
every	time	teacher	call	we
1ndex	2ndex	3ndex	4ndex	5ndex
N	N	N	V	N
+scop	+unit	-prpr	+trms	+prnn
+dstr	-clsf			-sngl
2([+unit])				

S 196: Mono-distributive scope noun ('any')

'Any buffalo.'

<i>ki:p</i>	<i>lam</i>	<i>ti.riək</i>
any	unit	buffalo
1ndex	2ndex	3ndex
N	N	N
+scop	+unit	-unit
+dstr	+sngl	
+mono		
2(+sngl)		

The distributive scope nouns *tɔ:f* and *mɔ:j₂*, which both mean 'every', refer to each of their dependents, as in S195a and b, while *ki:p* 'any' refers to an indefinite range of members in a set, as in S196. There are no examples of these nouns without noun dependents.

7.9 UNIT NOUNS

Unit nouns are the only nouns in Pacoh that can serve as dependents of numeral nouns, as stated in RR-N13.

RR-N13 [+nmrl] → [?(+unit)]

Most often, they take as their dependents nouns which meet specific selectional restrictions. Unit noun subclasses include classifier, general, person, and time unit nouns. In the subsections below, unit nouns are shown to form a distinct noun subcategory, and each unit noun subcategory is described.

7.9.1 Characterization of Unit Nouns as Nouns and as a Subcategory

Unit nouns are the only possible direct dependents of numeral nouns.⁶⁴ The term ‘unit’ has been chosen for these nouns since they have semantic reference to units and because they serve as dependents of numerals. Since dependents of Pacoh nouns branch rightward, Pacoh unit nouns must be the dependents of their numeral noun regents (see section 7.3.1 on noun phrase linear precedence). Most unit nouns, with the exception of time nouns, generally take dependent nouns. The unit nouns restrict the types of common nouns they may take based on a variety of semantic features.

What in this grammar are called ‘unit nouns’ have other names in other descriptions of languages spoken in Southeast Asia,⁶⁵ such terms as ‘classifiers’ and ‘measure words’. Since many descriptions of ‘classifiers’ are primarily semantic in basis—though the semantic aspect is crucial in the relationship between the ‘classifier’ and its selected noun—the nature of the syntactic relationships between these ‘classifiers’ and other words are sometimes overlooked or left unclear. In some general descriptions of Asian languages, ‘nouns’ (what are considered non-unit or common nouns in this grammar) are considered to be the ‘heads’ or in some way the governors of their selected ‘classifiers’ (that are here considered to consist of a few different subclasses). In this grammar, ‘classifiers’, though matching the overall concept in Southeast Asian linguistic studies, differ somewhat since they are considered to be a subclass of unit nouns.

⁶⁴ Although, see section 7.5.3.4 for discussion of exceptions in which numeral nouns do not appear with dependent unit nouns.

⁶⁵ See for example Jones 1970 for a summary of classifier constructions in Southeast Asia.

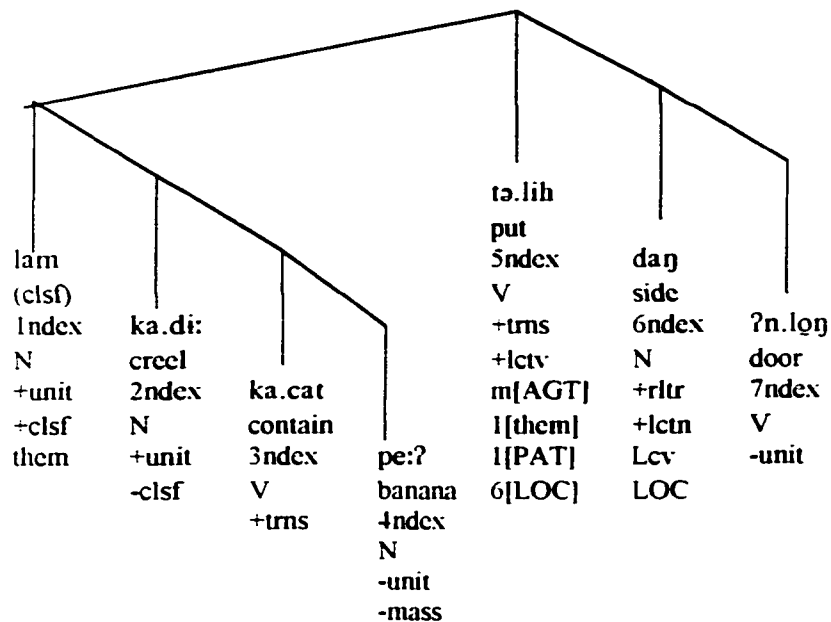
Assuming that classifiers and other similar categories of words are nouns—what are here called ‘unit nouns’—what is the structural relationship between unit nouns and non-unit nouns? One of the most notable typological differences in noun phrase structure among the languages of Southeast Asia is the position of the so-called ‘classifiers’, whether before or after what is often called the ‘head’ of a noun phrase.⁶⁶ Take, for example, Mandarin Chinese *yi1-ge4-ren2* ‘one-classifier-person’, where *ge4* is considered the classifier and *ren2* ‘person’ is considered the ‘head’. This ‘classifier-head’ order in noun phrases is seen in languages throughout much of Vietnam and Malaysia, while the order ‘head-classifier’ is seen in much of Cambodia, Laos, Thailand, and Burma (Jones 1970 and Alves 1997). However, the reasons for considering ‘classifiers’ in some way dependent on the ‘head’ nouns is rarely explained, or it is apparent that semantic centrality is the basis for such claims. The term ‘head’ in the aforementioned notional sense can be construed to mean the thing in semantic focus in a discourse context and the word to which a classifier is semantically related. However, this criterion does not clarify the syntactic status of unit nouns.

Pacoh unit nouns can be shown to be nouns by their ability to occur in case-marked positions as the highest regents of noun phrases. In S197, the general classifier unit noun, *lam*, is the head of the noun phrase occurring in the topic position, which is then useable by the main transitive verb to satisfy contextual case requirements.

⁶⁶ See Savetamalya and Reid 1995 for more discussion on the issue of typology and noun phrase structure among Southeast Asian languages.

S 197: Classifier unit noun as highest regent of a noun phrase as PAT

‘Put the creel basket containing bananas in front of the door.’



Pacoh unit nouns are not phonological forms that participate in word-formation strategies (WFSs) since they can occur in noun phrases in a variety of positions, including noun-phrase initial, medial, and final positions.

S 198: Unit nouns in three positions in a noun phrase

	(two	unit	this)	
(a)	ba:r	lam		‘two things’
(b)		lam	?n.neh	‘this thing’
(c)	ba:r	lam	?n.neh	‘these two things’

S198 shows that no single WFS could account for this phonological range of distribution.

In addition, unit nouns can be the complements of prepositional phrases, as in S199.

S 199: Unit noun in prepositional phrase

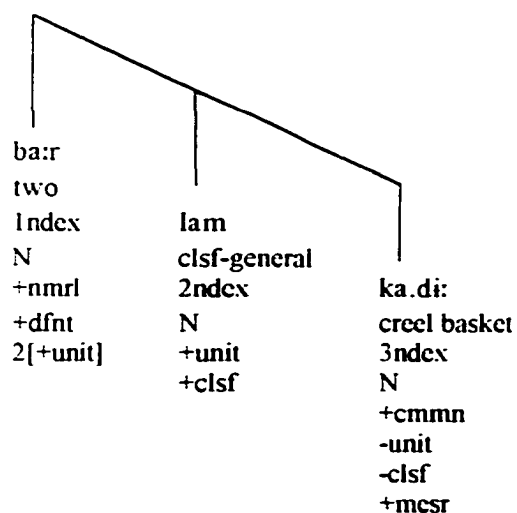
'I took a spoon and scooped rice into this bowl.'

jiəl	təŋ.hɔ:k	pək	dɔ:j	toʔ	lam	ti.ŋa:n	?n.neh
take	spoon	scoop	rice	to	(clsf)	bowl	this
V	N	V	N	P	N	N	N
+trns	-unit	+trns	-unit	+lctn	+unit +clsf -slcv	-unit	+dmns

The primary characteristic of unit nouns is that they are the only dependents numeral nouns can take. As such, unit nouns have a general syntactic function, that of relating regent numerals to other nouns that are not inherently quantifiable. The common nouns that are dependents of unit nouns are formally marked [-unit], as in S200.

S 200: Quantified noun phrase

'Two creel baskets.'



To summarize, unit nouns are indeed nouns as seen by their ability to serve as the immediate dependents of verbs and as complements in prepositional phrases. They are the only class of nouns that numeral nouns take as direct dependents, thereby placing

them in a distinct subcategory of nouns. They generally take their semantically-selected non-unit nouns as their sole dependents.

7.9.2 Unit Noun Subcategories

Pacoh unit nouns are subcategorized by the primary features $[\pm\text{time}]$ and $[\pm\text{clsf}]$, resulting in three primary subcategories: classifier, general, and time unit nouns. The secondary feature $[\pm\text{prsn}]$ splits classifier unit nouns into general and person classifiers.

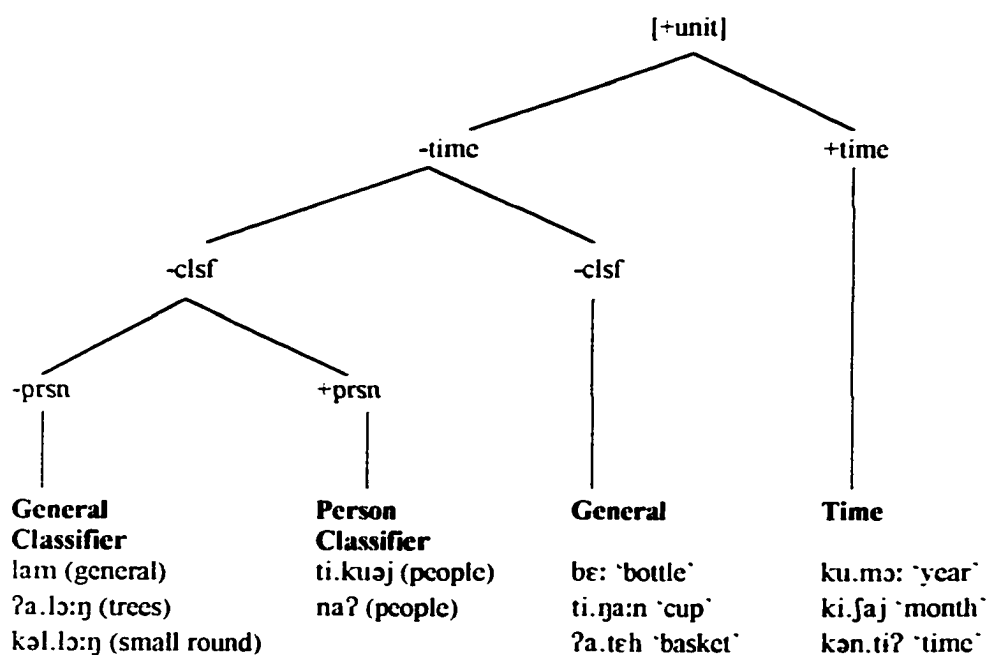


Figure 39: Pacoh unit nouns

The feature $[\text{+prsn}]$ is included here since it is distributionally significant and is seen in other lexical subclasses, such as person conjunctions and person numerals, all of which only take human noun complements. S201 to S204 contain examples of each type.

S 201: Classifier unit noun

‘Three Vietnamese persons’

pɛ:	naʔ	ti.kuəj	juəŋ
three	clsf-human	human	Vietnamese
1ndex	2ndex	3ndex	4ndex
N	N	N	N
+nmrl	+unit	-unit	-unit
2[+unit]	+clsf	+humn	+prpr
	+prsn	-clsf	
	3([+humn])		

S 202: Person unit noun

‘Two younger brothers’

ba:r	ti.kuəj	ʔa.ʔɛ:m ₁	kø:ŋ
two	human	sibling	male
1ndex	2ndex	3ndex	4ndex
N	N	N	N
+nmrl	+unit	-unit	-unit
+dfnt	+prsn	+humn	+gndr
2[+unit]	3([+humn])	-clsf	
	-clsf		

S 203: Time unit noun

‘A few afternoons’

ba:r-pɛ:	ʔi.bi:
a few	afternoon
1ndex	2ndex
N	N
+nmrl	+unit
-dfnt	+time
2[+unit]	

S 204: General unit noun

‘How many bottles of liquor?’

li.mə:	bɛ:	ʔa.riəw
how many	bottle	liquor
1ndex	2ndex	3ndex
N	N	N
+nmrl	+unit	+cmmn
+ntrg	-prsn	+mass
2[+unit]	-clsf	
	3([+mass])	

Pacoh time unit nouns typically do not take noun dependents, unlike the other unit noun subcategories, which typically do. Time unit nouns may be time LOC adjuncts. Classifier unit nouns, require noun dependents that satisfy the unit nouns' grammatical and semantic selectional restrictions, based on a variety of semantic features. The feature [+prsn] indicates a requirement of the noun dependents to be human. General unit nouns have no particular selectional restrictions for their noun dependents. Classifier and general unit nouns both take noun dependents, but they differ in that classifiers take only non-mass nouns and general nouns may take both mass and non-mass nouns, as in S205.

S 205: Classifiers versus measure words

(a)	ba:r	to:m	?a.lɔ:ŋ	(two-unit-tree)	'Two trees'
(b)	*ba:r	to:m	?a.riəw	(two-unit-liquor)	'*Two liquors'
(c)	?ba:r	be:	pe?	(two-bottle-banana)	'Two bottles of bananas'
(d)	ba:r	be:	?a.riəw	(two-bottle-liquor)	'Two bottles of liquor'

Classifier unit nouns have features that allow or prevent nouns with certain kinds of features from being their syntactic dependents. General unit nouns, on the other hand, may have only general semantic selectional restrictions, not grammatical ones. S205b is ungrammatical because 'alcohol' is a mass noun and a non-selected noun (i.e., not one that can be the dependent of a unit noun that has specific selective requirements). S205c is not ungrammatical since the general unit noun 'bottle' puts no constraints on its dependents, though the phrase is semantically odd. Each subclass includes other subcategories, as discussed in the respective subsections.

7.9.2.1 Classifier Unit Nouns

Pacoh classifier unit nouns take obligatory common noun complements, which can only be omitted in discourse contexts. They take dependent nouns of restricted

semantic classes, such as humans or objects of specific physical shapes or material types. Pacoh classifier unit nouns are subcategorized by the features $[\pm\text{slcv}]$ (selective) and $[\pm\text{prsn}]$ (person), resulting in three subclasses: person, selective, and general classifier unit nouns.

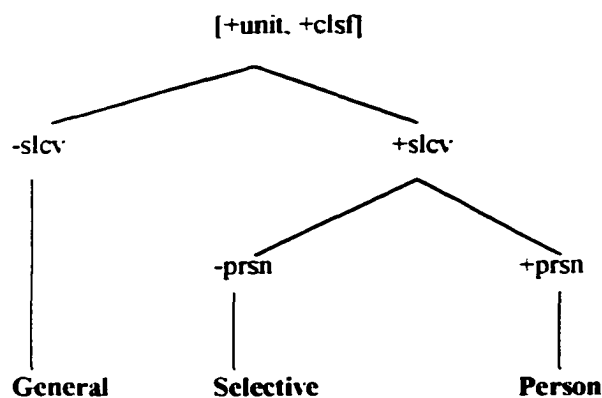


Figure 40: Subcategorization of classifier unit nouns

There is only one non-selective unit noun, *lam*, which can take any non-mass nouns.

Selective classifier nouns select categories of common nouns with specific semantic properties. Such nouns are formally marked $[\text{+slct}]$ (selected).

RR-N14 $[\text{+slcv}] \rightarrow [?([\text{+slct}])]$

Table 59 shows some Pacoh classifier nouns. The category column describes the general semantic fields of nouns that they take as dependents, and the noun dependents column describes the grammatical noun subcategory of dependents.

Forms	Category	Noun dependents
?m.pət ?n.nət	bunch	[+slcv]. [?(+plnt)]
tjəh	flat expanse	[+slcv]. [?(+land)]
plə:h	flat objects/garments	[+slcv]. [?(flat)]
lam	general	[-slcv]
kən.təh	group/flock/herd	[+slcv]. [?(+anmt)]
la:ŋ	leaf/sheet	[+slcv]. [?(shet)]
na?	persons	[+prsn]. [?(+humn)]
kəl.lə:ŋ	round objects	[+slcv]. [?(+rond)]
?n.tɾəʃ	small. long objects	[+slcv]. [?(+smln)]
?n.no:m	stalk	[+slcv]. [?(+bglŋ)]
to:m	tree	[+slcv]. [?(+tree)]

Table 59: List of Pacoh unit nouns

The only non-selective classifier is *lam*, which takes any things that are not already selected by the semantically specific classifiers.

S 206: Default classifier noun

(a) 'two boats'

ba:r	lam	ka.la:j
two	unit	boat
N	N	N
+nmrl	+unit	-unit
	+clsf	-slct
	-slcv	

(b) 'three snakes'

be	lam	ku.ʃe:ŋ
three	unit	snake
N	N	N
+nmrl	+unit	-unit
	+clsf	-slct
	-slcv	

The classifiers in this example are non-selective ([-slcv]) and take non-unit nouns that are not semantically selected ([-slct]). The non-selective classifier can also be used with just a demonstrative dependent to refer to indefinite things, as in S207, even though the thing in question could be a selected noun. The kinds of nouns taken by the non-selective classifier include a wide semantic range of non-mass nouns.

S 207: Classifier unit noun in ACCUSATIVE case

‘I’ll buy this one.’

ki:	pləj	lam	?n.nəh
I	buy	unit	this
1 _{ndex}	2 _{ndex}	3 _{ndex}	4 _{ndex}
N	V	N	N
+prsn	+trns	+clsf	+dmns
Nom		Acc	
AGT		PAT	

Person unit nouns have the feature [+prsn], which means they take only dependent nouns bearing the feature [+humn].

RR-15 [+prsn] → [?+[humn]]

This rule is shared by person conjunctions and person numeral nouns, both of which also require human noun dependents. There are two words in this category, *na?* and *ti.kuəj₂*.

Consider S208a and b.

S 208: Person unit nouns

(a) ‘Those two fellows.’

ba:r	na?	?a.ca:j	?ŋ.koh
two	unit	fellow	that
N	N	N	N
+nmrl	+unit	-unit	+dmns
	+prsn	+humn	

(b) ‘Ten students.’

mu.cit	ti.kuəj ₂	hɔ:k-fi:ŋ
ten	unit	student
N	N	N
+nmrl	+unit	-unit
	+prsn	+humn

ti.kuəj₂ has a derivationally-related homophonous non-unit noun form *ti.kuəj₁*, which can be the dependent of *na?*, as in S209.

S 209: The non-unit *ti.kuəj₁*

‘Four people.’

pʉən	na?	ti.kuəj
four	unit	people
N	N	N
+nmrl	+unit	-unit
	+prsn	+humn

This can be demonstrated in combinations of *ti.kuəj₂* and *naʔ*. As shown in S210a to f, both *ti.kuəj₂* ‘person’ and the abstract *naʔ* ‘unit referring to people’ can be the direct dependent of numerals, but in combination with each other, *naʔ* must come first.

S 210: Classifier unit nouns versus general unit nouns

‘One person’

(a) mɔːj ti.kuəj₂	one-person
(b) mɔːj naʔ	one-unit (human)
(c) mɔːj naʔ ti.kuəj₁	one-unit (human)-person
(d) *mɔːj ti.kuəj₂ naʔ	one-person-unit (human)
(e) *mɔːj lam naʔ	one-unit (general)-unit (human)
(f) *mɔːj naʔ lam	one-unit (human)-unit (general)

7.9.2.2 General Unit Nouns

General unit nouns (formally indicated by [-clsf]) are the least marked class of unit nouns. They occur freely in different case-marked positions (unlike time unit nouns) and have few selectional restrictions regarding the dependent nouns they can take (unlike classifier nouns). They generally have derivationally-related homophonous non-unit noun correlates and often denote physical units of measurement. Some examples of general unit nouns are *ti.ŋa:n₂* ‘bowl’, *ba:w₂* ‘bag’, *bɛ:₂* ‘bottle’, and *?a.tɛ:h₂* ‘basket’.

S 211: General unit noun

‘Several types of medicine’

li.mə:	nɔh	tər.haw
several	type	medicine
N	N	N
+nmrl	+unit	-unit
	-clsf	+mass

In S211, the general unit noun *nɔh* ‘type’ is not derivationally related to a tangible common noun. Virtually any noun can serve as the general unit noun’s dependent.

7.9.2.3 Time Unit Nouns

Time unit nouns are countable nouns that indicate quantities of time. They may occur as LOC adjuncts marking time of occurrence or as COR adjuncts indicating length of time. Unlike other unit nouns, they typically take no noun dependents, with the exception of LOC-bearing time unit nouns which have demonstrative pronominal noun dependents. S212 contains examples of time unit nouns bearing those case relations.

S 212: Time unit nouns as LOC and COR adjuncts

(a) 'This year, he's 50.'

ku.mə:	ʔn.nəh	də:	ʃo:ŋ-cit	ku.mə:
year	this	3s'	50	year
N	N	N	N	N
LOC				

(b) 'She studied English for one year.'

də:	hə:k	ka:ŋ-ʔaŋ	mə:j	ku.mə:	ʃə:
3s	study	English	one	year	already
N	V	N	N	N	Adv
			COR		

Words in this subcategory all have reference to units of time, such as *ʔi.ŋaj* 'day', *ki.faj* 'month', *ku.mə:* 'year', or *ʃə:* 'o'clock'. Though typically functioning as LOC or COR adjuncts, they can be PAT complements, as in S213.

S 213: Time unit noun as Nom-PAT

'This month has 30 days.'

ki.faj	ʔn.nəh	pə:..cit	ʔi.ŋaj
month	this	30	day
N	N	N	N
Nom			
PAT			

8. PREPOSITIONS IN PACOH

Pacoh prepositions, along with their following verb or noun complements, form exocentric constructions. These prepositions are divided into two primary categories: extension and non-extension prepositions. Extension prepositions take predicates as complements and may be either root predicates or non-root dependents of other predicates. Non-extension prepositions take non-predicate nouns as complements and can participate in assigning different kinds of case relations depending on the preposition subcategory. There are three primary non-extension preposition subcategories: comitative, dative, and locational non-extension prepositions. Combinations of prepositions and non-predicate nouns mark the *LOCATIVE* case form,⁶⁷ but may help assign the *PAT*, *LOC*, or *COR* case relations.⁶⁸

Pacoh prepositions have several functions. When taking non-predicate complements, they can satisfy locational requirements of verbs. Some subclasses of prepositions assign their noun complements the *LOC* case relation or mark the *COR* goal of an action. Certain Pacoh prepositions serve as dependents of degree stative verbs to create comparative constructions. When taking predicate complements, Pacoh

⁶⁷ The use of 'Locative' is somewhat arbitrary, since it could just as easily be 'DATIVE' or 'INSTRUMENTAL.' I view case forms as superficial, being based primarily on word class. There is no need to posit a separate *INSTRUMENTAL* case relation in Pacoh, since the words involved are derivationally related to other word classes. The main concern, then, is that the verb type is able to assign the appropriate case relation to an immediate noun dependent or one in a prepositional construction. A prepositional phrase is, in a sense, a unit, and whether the noun receives case assignment from a preposition or the preposition's regent verb does not interfere greatly with claims made in this study.

⁶⁸ The ability of prepositions to assign case relations to their noun complements can be seen in lone prepositional phrases, such as 'in here,' where the preposition assigns the *LOC* case relation, while in 'to me', the preposition assigns the *COR* case relation. They could, however, also be recovered from the discourse context.

prepositions do not mark a case form, but instead link two predicates providing meanings such as condition, cause, or result.

8.1 CHARACTERISTICS OF PACOH PREPOSITIONS

Prepositions are words that form exocentric phrases with verbs or nouns as following complements, as stated in RR-P1 ('X' marks the verb or noun complement).

RR-P1 [P] → [?[X]]

This linear precedence rule states that the complement must have a higher index than the preposition.

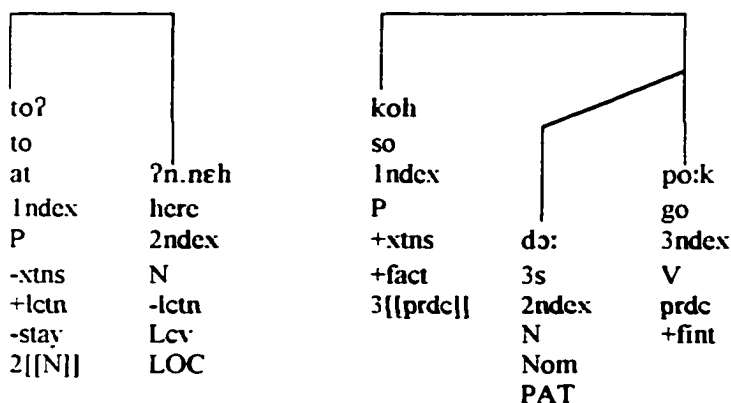
RR-P2 [P] → [@<?[[X]]]

This linear precedence redundancy rule simply specifies that a preposition must have a following dependent.

There are two primary subclasses of prepositions, namely extension prepositions, which take predicate complements (as in S214b), and non-extension predicates, which take non-predicate complements (as in S214a).

S 214: Prepositional construction

(a) 'Here ('At this location).'
(b) 'So. he went.'



Non-extension prepositions, like the one in S214a above, take non-predicates, which are always nouns, and assist in the assigning of the COR, LOC, and PAT case relations. Together, these prepositions and their non-predicate nouns form the LOCATIVE case form. Those prepositions that take predicates, which can be either verb or noun predicates, do not participate in case assignment, but rather form phrases that can be regents or dependents of other categories.

Both extension and non-extension prepositions may be regents or dependents of nouns, verbs, or other prepositions, as shown in Figure 41.

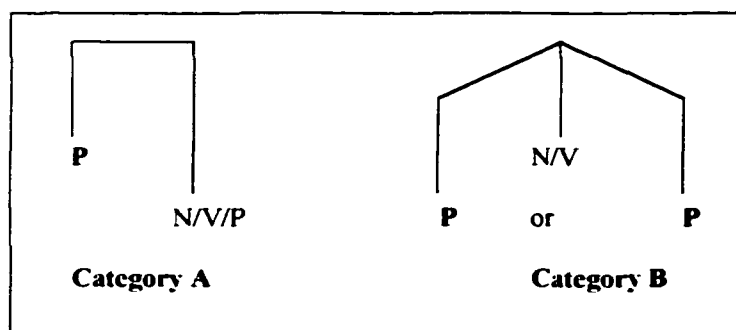


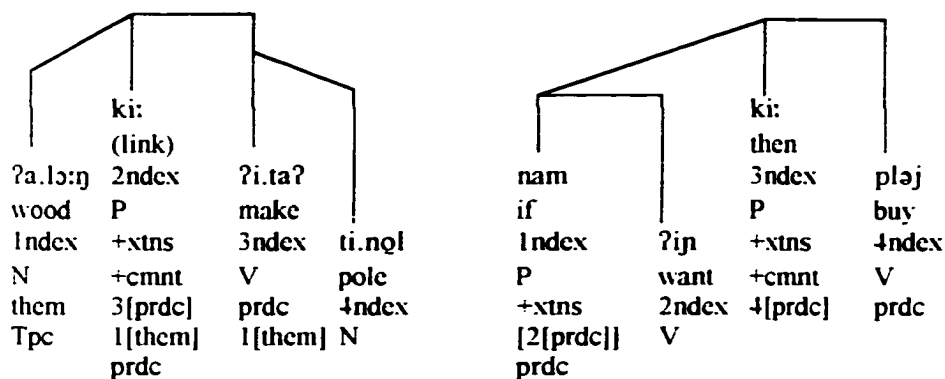
Figure 41: Dependency relationships of prepositional constructions

Horizontal lines mark exocentric constructions, while slanted lines mark endocentric constructions. Whether a prepositional phrase precedes or follows its regent depends on the function of a particular preposition subcategory. Dependents of a prepositional phrase include nouns, verbs, and other prepositional phrases. The type of regent or dependent that occurs with a preposition is used in preposition subcategorization in section 8.2.

Category A, as shown above in Figure 41, may be prepositions that take as a dependent a noun marked with the feature [them], as in S215a, or may just be a predicate-headed construction, as in S215b.

S 215: Prepositions forming regent constructions

(a) 'As for wood, we use it to make poles.' (b) 'If you want one, then buy one.'

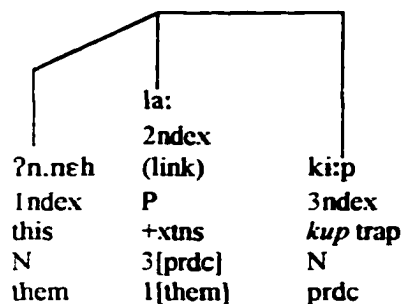


The preposition in S215a requires both a following predicate and a preceding theme-marked noun and is itself a root predicate. In S215b, the two prepositions are strictly ordered (i.e., 'then' before 'if' is ungrammatical), but the linear ordering of other prepositions may differ according to the specific subcategory.

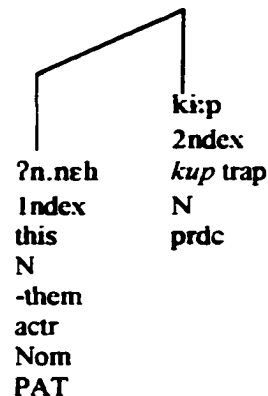
A commonly occurring subtype within Category A is the copula-like construction. This construction shows the same order and structure as the [them] example in S216a, but instead of a verb complement, the regent preposition takes a predicate noun. A sentence with a similar meaning can be formed without the preposition, as in S216b, demonstrating the predicate quality of the noun, and suggesting that these prepositions are not simply copula verbs (see section 7.3.2.4, Nouns as Predicates).

S 216: Theme noun preposition

(a) 'As for this, it's a *kup* trap.'



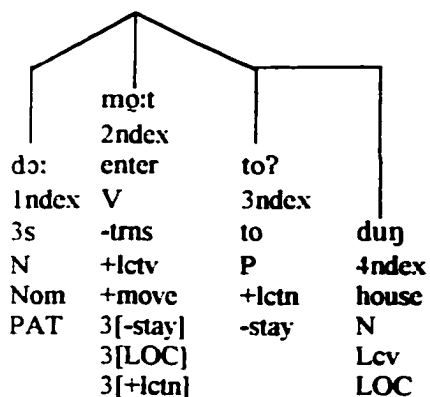
(b) 'This is a *kup* trap.'



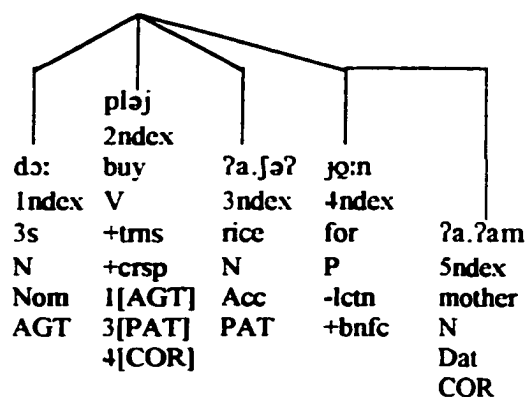
Category B shows the prepositional phrase as either the dependent of a noun, thereby serving as part of a noun phrase, or as the dependent of verb. These types of prepositional constructions typically but do not always follow their regents.

S 217: Prepositional complements of nouns and verbs

(a) 'He entered the house.'



(b) 'He bought rice for his mother.'



S217a shows a movement verb taking a locational preposition, while S217b contains a beneficiary correspondent preposition. Each type of dependency is further discussed in subsequent sections.

8.2 PREPOSITION SUBCATEGORIES

Pacoh prepositions are subcategorized by the features $[\pm\text{xtns}]$, $[\pm\text{lctn}]$, and $[\pm\text{datv}]$, resulting in the four primary subcategories, comitative, dative, locational, and extension prepositions.

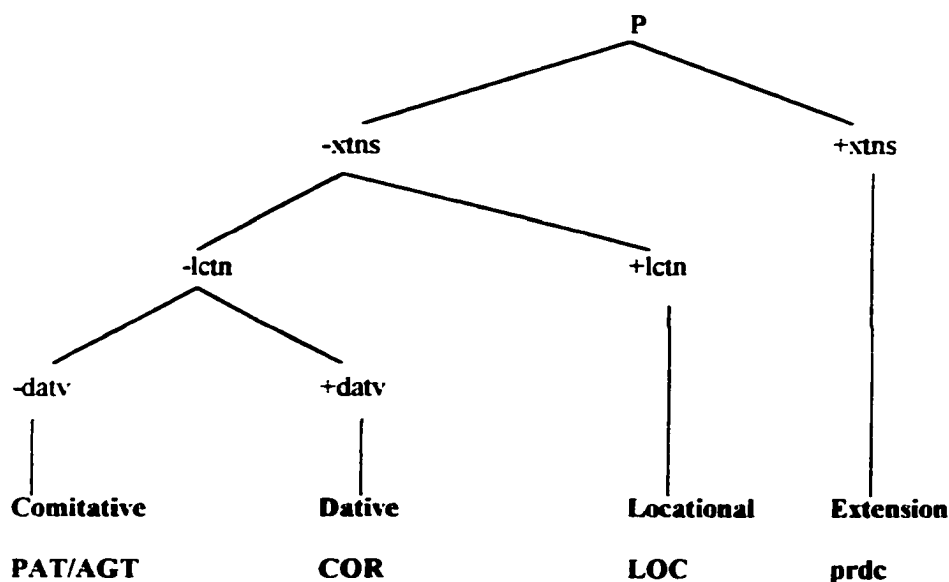


Figure 42: Primary subcategorization of prepositions

Under each category listing is the associated case relation or feature.

Figure 43 below shows the possible case-related relationships that apply to Pacoh prepositions and their dependents. Extension prepositions are the only prepositions that take predicates as complements, including (a) predicate nouns, (b) other extension prepositions that have predicate complements, or (c) verbs. All other prepositions take non-predicate nouns as complements and mark the LOCATIVE case form. Locational prepositions have the feature $[\text{+lctn}]$ and so can assign the LOC case relation as the dependents of verbs or nouns. Dative prepositions have the feature $[\text{+datv}]$ and can assign the COR case relation to their noun dependents when they are dependents of

correspondent verbs. Comitative prepositions may assign the PAT case relation and add another actor noun, bearing either the PAT or AGT case relations, to sentences. Each primary group has secondary subcategories differentiated by syntactic and semantic functions and characteristics.

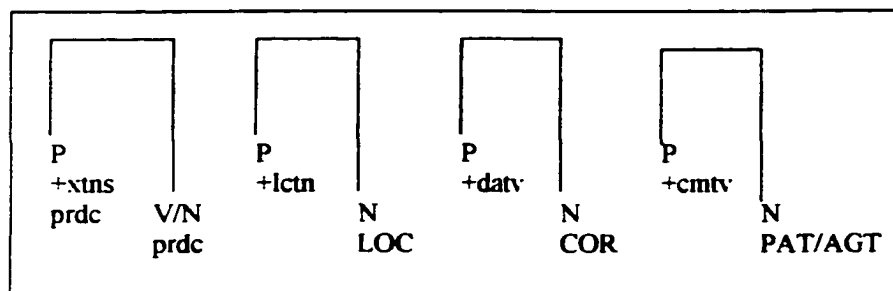


Figure 43: Four primary subcategories and their dependents

8.2.1 Comitative Preposition

The only comitative preposition in Pacoh, *?a.li:ŋ*₁ 'with', is used semantically to express that its complement noun is acting simultaneously with the noun in the NOMINATIVE case form in the same sentence. In effect, it adds an optional actor noun, either PAT or AGT, as in S218a and b.

S 218: Comitative preposition bearing the PAT and AGT case relations

(a) 'I went with him.'⁶⁹

ki:	?a.liŋ	dɔ:	po:k
1s	with	3s	go
Index	2ndex	3ndex	4ndex
N	P	N	V
Nom	+cmtv	PAT	-trns
PAT	4[N]	Lcv	1[PAT]
			3([+cmtv])
			3([PAT])

(b) 'I ate rice with him.'

ki:	ca:	dɔ:j	?a.liŋ	dɔ:
1s	eat	rice	with	3s
Index	2ndex	3ndex	4ndex	5ndex
N	V	N	P	N
Nom	+trns	Acc	+cmtv	AGT
AGT	1[AGT]	PAT		
	3[PAT]			
	4([+cmtv])			
	4([AGT])			

⁶⁹ Another possibility is that *?a.liŋ* before another verb is a transitive extension verb, as suggested by Starosta (p.c.).

*ʔa.li:ŋ*₁ forms adjunct prepositional phrases that bear either the PAT or AGT case relation, depending on the requirement of its regent verb. The case relation is the same as the noun in the NOMINATIVE position before the regent verb. Non-stative verbs can take these prepositions as adjuncts.

RR-P3 [V, -sttv] → [?(+[cmtv])]

In stemmas, they look like that shown in Figure 44.

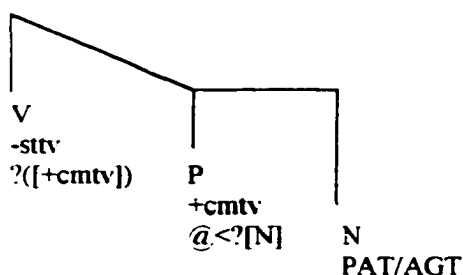


Figure 44: Comitative preposition as adjunct

These added PAT and AGT case relations are not complements. The highest regent verb in a sentence must have at least a PAT complement and, if transitive, an AGT complement as well. These comitative prepositions may bear either case relation, but being adjuncts, cannot replace the nouns in the NOMINATIVE position.

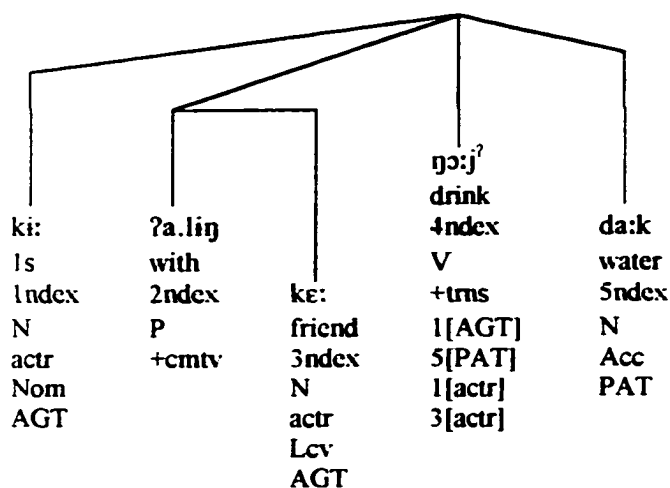
The comitative preposition is semantically similar to coordinative conjunctions, but comitative prepositions differ from conjunctions in taking only one complement. That they are prepositions can be seen by their ability to be located in different positions relative to the regent verb. A comitative preposition with its single complement can appear in the preverbal position on the same side of a verb⁷⁰ with the noun in the

⁷⁰ Starosta (p.c.) has noted that positing these as extension verbs eliminates the otherwise exceptional distribution of a subclass of prepositions. However, no evidence supports their status as verbs.

NOMINATIVE case form, as in S219. However, comitative prepositions can also occur after the regent verbs as well, as in S220. This differs from conjunctions, which require both of their noun complements to occur on the same side of the verb.

S 219: Comitative preposition before a regent verb

'I drank water with my friend.'



S 220: Comitative preposition after the regent verb

'I don't dare to go with you.'

ki:	lɔj [?]	dah	po:k ₁	ʔa.liŋ	ʔa.ca:j
1s	no	dare	go	with	2s
N	V	V	V	P	N
Nom			-lctv	+cmtv	Lcv
PAT					PAT

No examples in available data show comitative prepositional constructions occurring before the noun in the NOMINATIVE case, suggesting that the verb has a sibling-rivalry type redundancy rule, stated in RR-V38.

RR-V38 [V] → [?[Nom]<?([+cmtv])]

This rule puts the comitative preposition somewhere after nouns in the NOMINATIVE case.

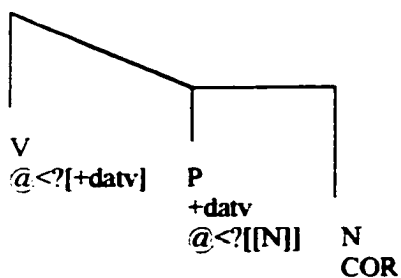


Figure 45: Dative preposition as adjunct

Dative prepositions are made up of three primary subcategories divided by the features [\pm cmpr] and [\pm goal].

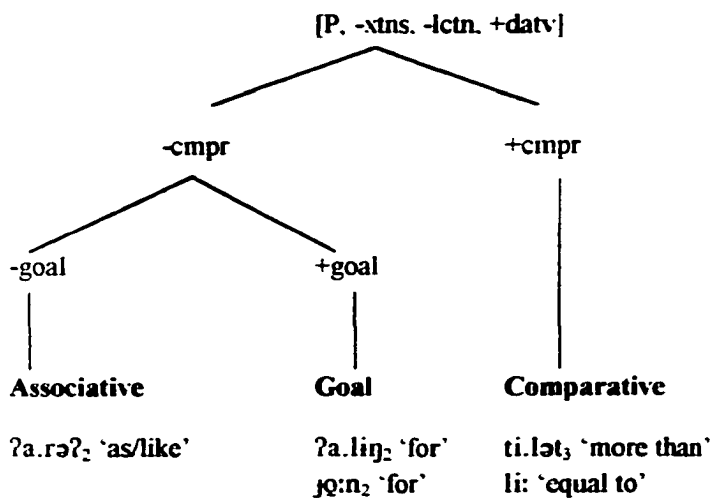


Figure 46: Subcategorization of dative prepositions

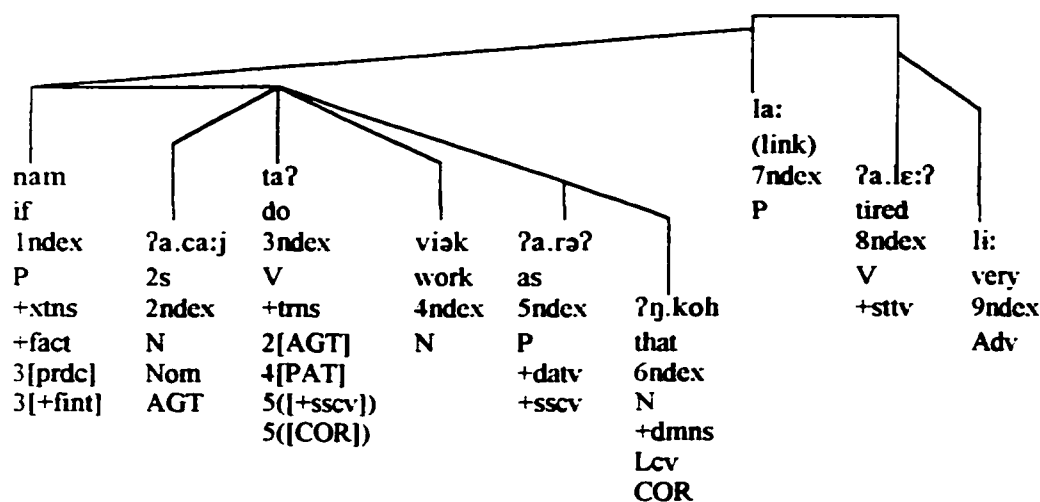
Associative dative prepositions semantically associate the manner of the action of the regent verb with its noun complement (e.g., 'Don't do it *like* that'). Goal prepositions refer to the beneficiaries of actions. Comparative prepositions, which are the dependents of stative verbs, express comparison of stative verbs' qualities.

8.2.2.1 Associative Prepositions

The single associative preposition in Pacoh, *ʔa.rəʔ₂* ‘like/as’, is a non-goal, non-comparative dative preposition, formally marked [+ssc]. It refers to the manner or degree of an action (e.g., ‘like this’). It is found only as the dependent of non-stative verbs, and is thus considered syntactically as well as semantically distinct from comparative prepositions. This form is derivationally related to the homophonous correspondent verb form, *ʔa.rəʔ₁* ‘to be like’.

S 222: Associative goal preposition

‘If you work like that, then you’ll be tired.’



The primary difference between the verb and the prepositional form is the dependence of the preposition on a verb.

8.2.2.2 Comparative Prepositions

Pacoh comparative [+cmpr] dative prepositions are non-extension, non-locational prepositions. Unlike associative prepositions, which are the dependents of non-stative verbs, comparative prepositions form prepositional constructions that are dependents of

relative stative correspondent verbs (see section 10.3.4.4.3). Pacoh comparative prepositions consist of three lexical entries, *ti.lət₂* ‘more than’, *hə:n* ‘more than’, and *li:* ‘equal to’. They are divided into two subclasses by the semantic feature [\pm equl] (equal).

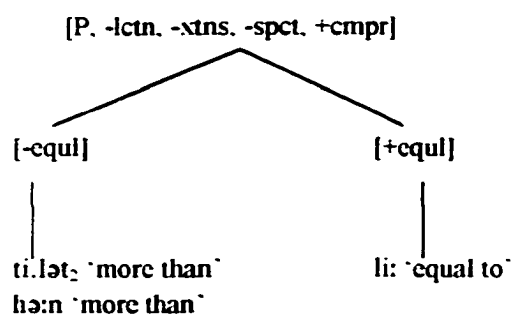


Figure 47: Subcategorization of comparative prepositions

The equal comparative preposition expresses equivalency of stative verb characteristics, while non-equal ones express differences.

S 223: Comparative preposition and degree stative verb

‘This one is better than that one.’

lam	ʔn.nəh	ʔɔ:	ti.lət	dɔ:	ʔn.tih
unit	this	good	more-than	3s	that
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	N	V	P	N	N
Nom		+crsp	+datv	Lcv	
PAT		+sttv	+cmpr	COR	
		+degr			
		1[PAT]			
		4[+cmpr]			

When negation is used, the negation extension verb precedes the stative verb and not the preposition, as in S224.

S 224: Negation of verb, not preposition

‘This one is not better than that one.’

lam	?n.nɛh	lɔjʔ	?ɔ:	ti.lət	dɔ:	?n.tih
clsf	this	no	good	more-than	3s	that
N	N	V	V	P	N	N
			+sttv	+datv		
			+degr	+cmpr		

[+equ] comparative prepositions express semantic equality between ACCUSATIVE PAT nouns and the prepositions’ noun complements.

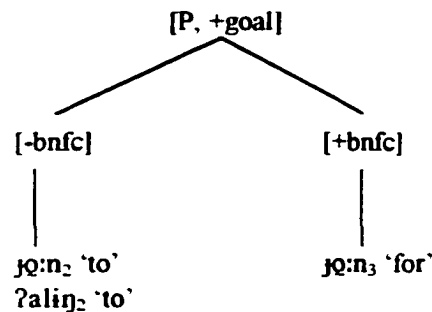
S 225: Equal comparative preposition

‘He is as tall as one’s chest.’

dɔ:	?a.jɔŋ	li:	?a.po:m
3s	tall	as	chest
1ndex	2ndex	3ndex	4ndex
N	V	P	N
Nom	-trns	+cmpr	Lcv
PAT	+crsp	4[N]	COR
	+sttv		
	1[PAT]		
	3[+cmpr]		
	4[COR]		

8.2.2.3 Goal Prepositions

Goal dative prepositions mark the recipients of actions. They form prepositional constructions that are dependents of verbs. They are subcategorized by the feature [±bnfc].

**Figure 48: Subcategorization of goal prepositions**

The difference between these two categories is their use as dependents, whether as a complement or an adjunct.

One common way these prepositions are used is to indicate the receiver of something.

S 226: Lcv-COR

'I don't dare buy bananas for him.'

ki:	lǎj ²	dah	plǎj	pe?	jɔ:n	ʔa.ca:j-ʔŋ.koh
1s	not	dare	buy	banana	for	he
N	V	V	V	N	P	N
Nom				Acc	+datv	Lcv
AGT				PAT	+goal	COR

The non-beneficiary goal dative preposition is the COR complement of transitive correspondent verbs specifically. In S227, the PAT is the noun phrase 'a grain of rice', and the noun in the prepositional phrase is a goal rather than a beneficiary.

S 227: Simple goal preposition

'He didn't say one word to me. (He didn't speak even a grain of rice to me)'

dɔ:	lǎj ²	to:ŋ	ʔa.liŋ	ki:	mɔ:j	kəl.lɔ:ŋ	ta:j	ʔm.mɔ:
3s	not	speak	with	1s	one	grain	rice	whichever
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex	9ndex
N	V	V	P	N	N	N	N	N
Nom		+trns	+datv	Lcv	Acc			
AGT		+crsp	+goal	COR	PAT			
		1[AGT]	-bnfc					
		6[PAT]						
		4[COR]						

The non-beneficiary form has a semantic dative meaning, which generally indicates that it is a complement.

In contrast, beneficiary goal dative prepositions, which do not correspond in meaning to 'indirect objects', are beneficiary COR adjuncts of verbs in general. The preposition in S228 below semantically refers to the beneficiary of an action. In S228,

the noun complement of the beneficiary preposition is not receiving the rice, but rather is benefitting from the assistance of measuring the rice.

S 228: Plain goal preposition

'I'm going to the market to measure the rice for you.'

ki:	po:k	to?	cə:?	val	ʔa.fə?	jo:n	ʔa.ʔe:m
Is	go	to	market	measure	rice	for	2s
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex
N	V	P	N	V	N	P	N
Nom	-tns					+goal	Lcv
	-crsp					-bnfc	COR
	1[PAT]						
	7[(COR)]						

8.2.3 Extension Prepositions

Pacoh extension prepositions, like extension verbs, take predicates as complements, including nouns and verbs, as represented in the general redundancy rule RR-1.

RR-1 [+xtns] → [?[prdc]]

This rule results in stemmas as in Figure 49.

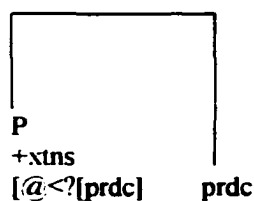


Figure 49: Extension preposition complements

Such prepositional constructions are often adjunct dependents of extension verbs, which all have the potential to take predicate adjuncts. Having predicate complements, extension prepositions themselves are predicates and so can satisfy this general contextual requirement.

Pacoh extension prepositions are comprised of four subcategories: aspect, clause-linking, comment, and intention extension prepositions. These categories are distinguished by the features $[\pm\text{cmnt}]$ (comment), $[\pm\text{time}]$ (time), and $[\pm\text{ntnt}]$ (intention).

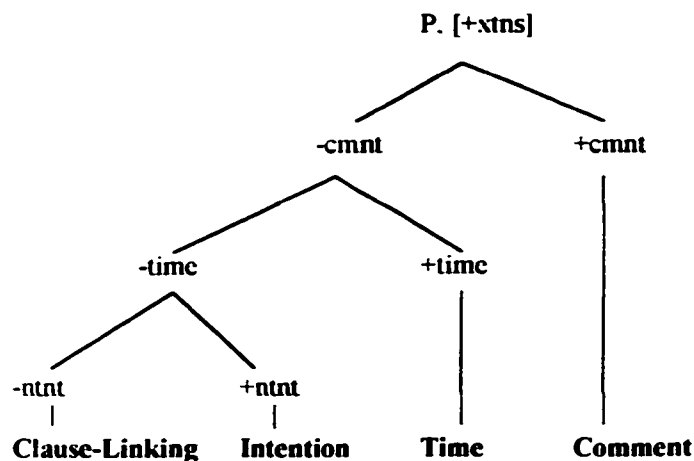


Figure 50: Subcategorization of Pacoh extension prepositions

Time prepositions indicate the timing of their dependent predicates in relation to their regent predicates. Clause-linking prepositions generally form dependent clauses that add information to their regent predicates. Comment prepositions form exocentric constructions containing predicates, and preceded by theme-marked nouns, in topic-comment constructions. Intention prepositions form constructions with their complement verbs that refer to intended actions or results in relation to regent verbs. Table 60 contains the clausal prepositions found in data so far. Existing data contains relatively uniform distributional patterns of Pacoh extension preposition subcategories, though unfortunately, little negative evidence exists to state what constraints exist. Unmarked distributions of these subcategories are characterized as follows. In available data, $[+\text{cmpl}]$ time extension prepositions (e.g., *jə:* ‘already’) occur strictly sentence initially,

before their regent predicate clauses, while only [+goal] time prepositions (e.g., ‘until’) occur after regent verbs. Comment prepositions, which link [them] nouns to the predicate complements of the prepositions, are regents of their consistently preceding [them] marked nouns in dozens of examples. Intention prepositions always follow their regent verbs in available data. Clause-linking extension preposition subcategories varied in terms of their distribution before or after their regent verbs. Though negative evidence is scarce, the overall unmarked patterns are more certain. More details are discussed in respective subsections. Each of the primary subcategories of extension prepositions (time, comment, clause-linking, and intention) is discussed in the following subsections.

Gloss	Preposition	Type
after	jə:	time
and so	ki:-la:	comment
because	kə:	clause-linking
because	vi:	clause-linking
because	vi:-ʔi.mə:	clause-linking
even if	ʔa.naʔ	clause-linking
from	tɛ:	time
however	koh-ma:	clause-linking
if	lah	clause-linking
if	nam	clause-linking
in order to	jə:n	intention
in order to	də:ʔ	intention
otherwise	ʔa.bi:f	clause-linking
rather than	ʔn.t ^h ɛ:	clause-linking
so	ki: ₂	clause-linking
and then	la: ₁	clause-linking
thus	ʔi.koh	clause-linking
TOPIC	ki: ₁	comment
TOPIC	koh	comment
TOPIC	la: ₂	comment
TOPIC	ma: ₂	comment
until	toʔ ₅	time
when	toʔ ₆	time

Table 60: Pacoh extension prepositions

8.2.3.1 Time Extension Prepositions

Time extension prepositions form exocentric adjuncts that indicate the completion or non-completion of their predicate noun or verb complements in relation to regent predicates. Existing data show them either in both sentence initial or sentence final position, though they are always dependents. They are subcategorized by the features $[\pm\text{cmpl}]$, $[\pm\text{goal}]$, $[\pm\text{sorc}]$, and $[\pm\text{fact}]$.

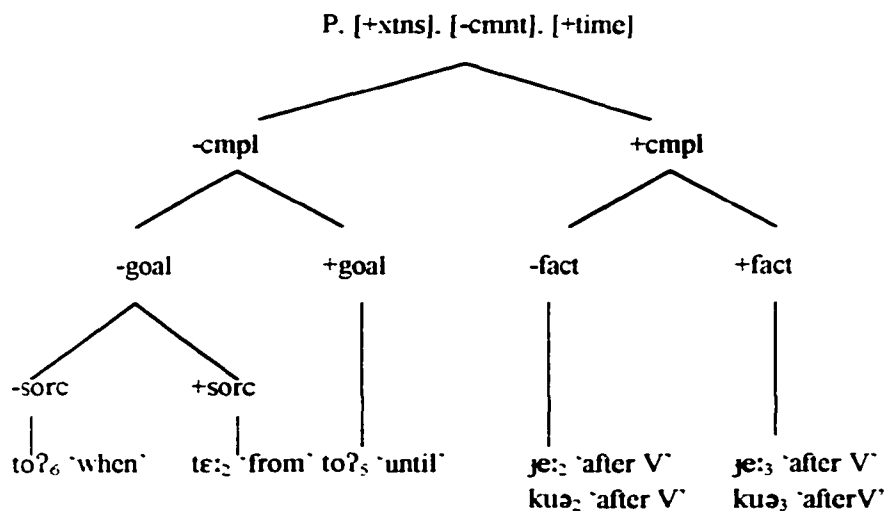


Figure 51: Subcategorization of time extension prepositions

Completed time extension prepositions are divided by the feature $[\pm\text{fact}]$. $[\text{+fact}]$ prepositions take finite predicate complements, while $[\text{-fact}]$ prepositions take non-finite predicate complements. In this first example, the preposition is $[\text{+fact}]$ and so takes a finite verb, having its own NOMINATIVE noun.

S 229: Completed time extension preposition with finite verb complement

‘After it’s started, it jumps over this.’

jə:	dɔ:	ki.kər	ʔa:n	vɔ:t	nəh
after	3s	afraid	3s	jump	here
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
P	N	V	N	V	N
+xtns	Nom	+fint			
+time		2[Nom]			
+fact					
3[+fint]					

In the second example, the preposition is [-fact], and the verb complement has the word-initial form [ʔi..., which marks non-finite verb complements. See section 10.2.7 for more discussion on non-finite verbs.

S 230: Completed time preposition with non-finite verb complement

‘After studying, he helped his father tend to the pigs.’

jə:	ʔi.hɔ:k	dɔ:	rɔ:m	ʔa.ʔi:	cjəm	ʔa.li:k
after	to study	3s	help	father	tend to	pig
P	V	N	V	N	V	N
+xtns	-fint					
+time						
+cmpl						
-fact						

The form *toʔ₃* [+goal] and the homophonous *toʔ₆* [-goal, -sorc] are both non-complete prepositions, as in S231.

S 231: Goal and non-goal time extension prepositions

(a) ‘At the age of 7, Nam was able to go to school.’ (b) ‘I will study until Sunday.’

toʔ ₆	ku.mə:	tu.pat	tuəj ²	na:m	po:k	hɔ:k	ki:	hɔ:k	toʔ ₅	cu:-nət
when	year	7	age	Nam	go	study	1s	study	until	Sunday
P	N	N	N	N	V	V	N	V	P	N
+xtns									+xtns?	
+time									+time	
-cmpl									-cmpl	
-sorc									+goal	

In available data, a few nouns recurred as predicate complements of these time prepositions, including *?ŋ.koh* ‘that’, *pruə?* ‘matters’, and time nouns (e.g., day, year, etc.). There could be two additional subcategories, depending on whether they take verb or noun predicates, though for now, there is just one subcategory that takes predicates regardless of the word class. Unlike the complements of locational prepositions, these nouns are events in time, thus they can, in terms of time, be reached and co-occur with or be followed by other events.

S 232: Time extension preposition with predicate noun

‘After all was done. Ba ran to the clinic.’

jə:	pruə?	ba:	la.luh	to?	duŋ-?i.te?
after	matters	NAME	run	to	clinic
P	N	N	V	P	N
+xtns	prdc				
+time					
+cpl					

8.2.3.2 Clause-linking Extension Prepositions

The position taken in this grammar regarding this class of prepositions is somewhat tentative because, while there are no other parts of speech to which this word could belong, significant problems still remain regarding the statement that a preposition can head a theme-marked noun. Starosta (personal communication) has suggested the possibility that a distinct word class exists, similar to that seen in Japanese and Southeast Asian languages. Such an approach may be needed in the future, but for now, the current position is used.

Clause-linking extension prepositions take verb dependents, but most often are themselves dependents of verbs or extension prepositions with verb complements. They

are either syntactically bound to other clauses, in which case they serve as dependents as in S233a, or they may stand as root predicates bound semantically to a broader discourse context, as in S233B. S233b demonstrates that sentences can have extension prepositions as their highest regents, indicating that they are root predicates.

S 233: Clause-linking prepositions as dependents

(a) 'He talked. so I listened.'					(b) 'So I listened.'		
də:	to:ŋ	koh	ki:	kəm.maŋ	koh	ki:	kəm.maŋ
3s	talk	so	1s	listen	so	1s	listen
N	V	P	N	V	P	N	V

Clause-linking extension prepositions are common, occurring more often than other extension prepositions. There are significantly more lexical entries in this category (see section 8.2). In terms of their subcategorization, they have the fewest primary features of the primary preposition subclasses ([*-cmnt*], [*-time*], and [*-ntnt*]). Their syntactic distribution is freer than that of other extension subcategories; they may occur both before and after dependents and regents (depending on the subcategory). They do not function in case assignment nor are they complements of specialized verb subclasses.

Clause-linking extension prepositions have a range of semantic qualities and functions. They express cause (*vi*: 'because'), result (*koh* 'thus'), and condition (*nam* 'if') while linking two predicates, as in the examples in S234a to d.

S 234: Clause-linking extension prepositions

(a) 'Because of that. I went.'			
vi:	?ŋ.koh	ki:	po:k
have	that	I	go

- (b) 'He went, so I went too.'
 dɔ: pɔ:k koh ki: dɔ:j pɔ:k
 3s go thus 1s too go
- (c) 'If I go, he won't go.'
 nam ki: pɔ:k dɔ: lɔjʔ pɔ:k
 if 1s go 3s no go
- (d) 'Go, otherwise I won't.'
 maj pɔ:k ?a.bi:f ki: lɔjʔ pɔ:k
 2s go otherwise 1s no go

Clause-linking extension prepositions are here subcategorized based primarily on semantic features. The feature [+rrls] (irrealis) indicates that a dependent clause expresses an unreal conditional event. The feature [+cntr] indicates that a clause semantically counters or contrasts with another dependent clause. The feature [+caus] refers to the cause of the regent clause event.

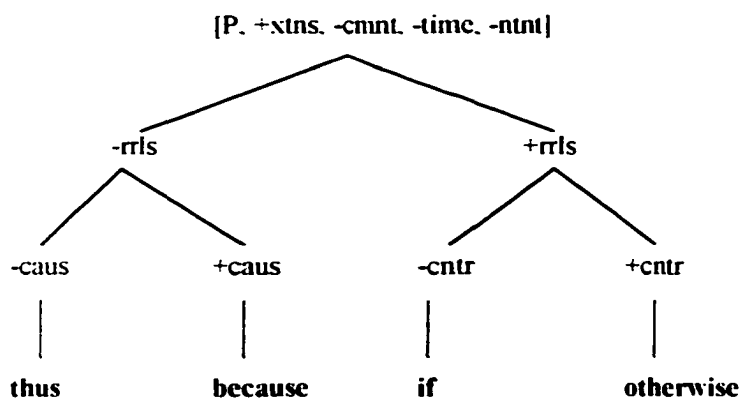


Figure 52: Subcategorization of clause-linking extension prepositions

These prepositions have general clause-linking functions, but often they are not needed to link sentences in Pacoh. Instead, V-to-V rather than V-to-P constructions are used.

S 235: Extension verb with result complement

‘The chicken flew away (so) I couldn’t catch it.’

ʔn.truəj	par	je:	ki:	ləjʔ	bo:n	kɔ:p	dɔ:
chicken	fly	already	Is	no	able	catch	3s
1index	2index	3index	4index	5index	6index	7index	8index
N	V	Adv	N	V	V	V	N

Sentences like this one, which has no clause-linking prepositions, are pronounced without pauses. Having one intonational phrase supports the claim that this is one regent headed sentence, despite the lack of a clause-linking preposition.

Cause clause-linking prepositions are divided by the feature [\pm ntrg]. S236a

‘because’ is non-interrogative, and S236b ‘why’ is interrogative.

S 236: Interrogative and non-interrogative clause-linking prepositions

(a) ‘I was harmed because a dog bit me.’

(b) ‘Why are you resting?’

cɔ:l	vi:	ʔa.cɔ:	kap	vi:-ʔi.mɔ:	maj	ʔa.ŋo:	ki:
harmed	because	dog	bite	why	2s	rest	thus
V	P	N	V	P	N	V	N
	+xtns		+fint	+xtns		+qstn	
	+caus			+caus			
	-ntrg			-ntrg			
	+fact						

The phonetic form representing ‘if’ creates a construction dependent on another clause. In much of the data, its construction occurs before the regent, but it did occur after as well, as in S237 and S238.

S 237: ‘if’ before the regent

‘If there are four people, they can make three *karloh* floor layer sections.’

nam	pʉən	naʔ	ti.kuəj	ʔi.taʔ	pɛ:	kər.lɔ:h
if	four	(unit)	person	to make	three	floor layer
P	N	N	N	V	N	N

S 238: 'if' after the regent

'Three *karloh* can be made, if there are from 3 to 4 people.'

ʔi.taʔ	pɛ:	kər.lə:h	nam	pɥən	naʔ	ti.kuəj
to make	three	floor layer	if	four	(unit)	person
V	N	N	P	N	N	N

In 'if' constructions, the regent verb may or may not cooccur with a 'thus' general extension preposition.⁷¹

S 239: 'if' with and without 'thus'

(a) 'If he's scared he'll run away.'

nam	kəl.laʔ	li:	luh
if	scared	very	run
1ndex	2ndex	3ndex	4ndex
P	V	Adv	V

(b) 'If he's scared, he'll run away.'

nam	kəl.laʔ	li:	koh	luh
if	scared	very	thus	run
1ndex	2ndex	3ndex	4ndex	5ndex
P	V	Adv	P	V

Further data is needed to better understand the function of prepositions in conditional and chronological relationships, which overlap semantically.

S 240: Time versus condition

'The wind made the door open, (so) I went to close it.'

ʃjəŋ	taʔ	poh	kiə	ki:	po:k	ka.tik	kiə
wind	cause	open	door	Is	go	close	door
N	V	V	N	N	V	V	N

In S240, no preposition is used to link the two clauses. The sentence has both a result and time sequence. In Pacoh, which aspect is the more important aspect of the ordering and what kinds of syntactic features should be used to represent this relationship are not evident now.

⁷¹ Another possibility is that these particular words are a special class of adverbs (Starosta p.c.).

8.2.3.3 Comment Extension Prepositions⁷²

Comment extension prepositions are prepositions that take predicate complements (verbs or nouns) and have preceding [them] noun dependents.

$$\text{RR-P4} \quad [+cmnt] \quad \rightarrow \quad \left[\begin{array}{l} ?[\text{them}]<@ \\ @<?[\text{prdc}] \end{array} \right]$$

They can mark nouns in the theme position, in which their preceding dependent nouns may occur. They link a ‘topic’ to a ‘comment’, hence the feature [+cmnt] (comment).

There are five words in this class: *ki:*, *koh*, *ma:*, *la*₁, and *la*₂. They are divided into two categories by the feature [±copl]. The single [+copl] preposition *la*₂ takes predicate nouns as complements. All other comment extension prepositions take verbs as complements.

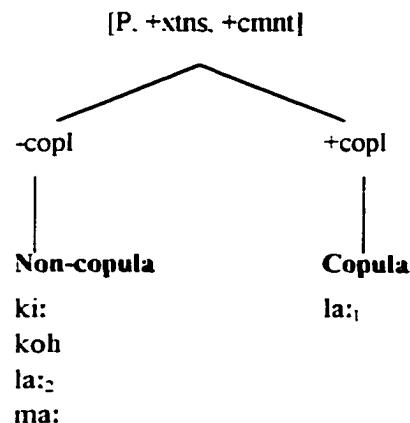
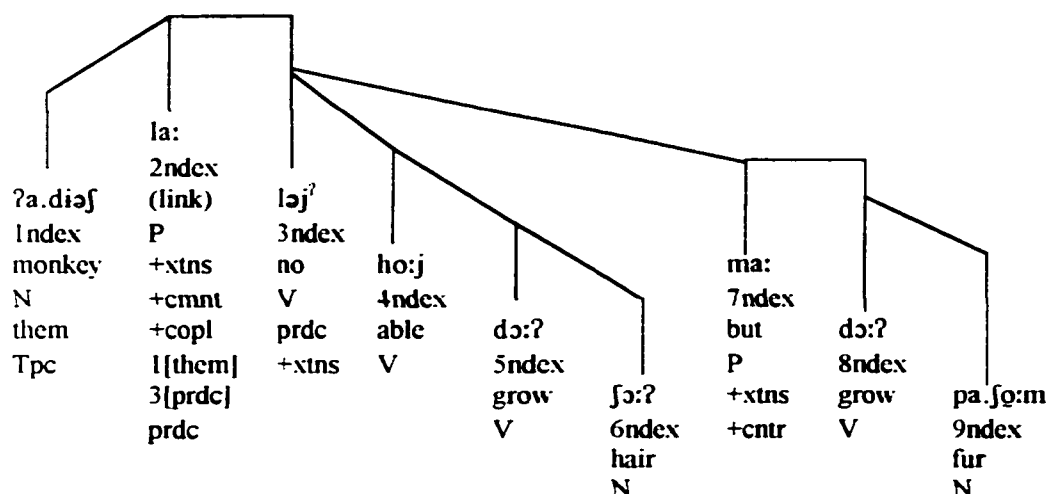


Figure 53: Subcategories of comment extension prepositions

⁷² As suggested by Starosta (personal communication), this subcategory of what are here called prepositions may actually represent a new lexical subclass that highlights theme nouns in the TOPIC case form, as seen by parallel examples in Japanese, Vietnamese, and Thai (and most likely other Southeast Asian languages as well).

Non-copula comment extension prepositions constitute the larger lexical class. They are preceded by nouns and followed by verbs. The heads of these exocentric constructions are themselves predicates. The nouns are marked [them].

S 241: Non-copula comment extension preposition with 'subject' theme
'Monkeys can't grow human hair, but rather grow fur.'



S241 would also be grammatical without the comment preposition. More than one noun can occur in the TOPIC case form, as in S242.

S 242: Non-copula comment extension preposition with 'object' theme

'As for the *kallo* and *sing* traps, I'm able to make them.'

kəl.lə:	ʃiŋ	ki:	ʔi.cə:m	taʔ
trap	trap	(link)	to know	make
N	N	P	V	V
them	them			
Tpc	Tpc			

Theme-marked nouns are distinct from noun dependents of the head verbs of sentences. Thus, a sentence can have both a noun in the NOMINATIVE case and a theme-marked noun, both of which have the same semantic reference, as in S243. However, this is typically not the case, and the second noun is typically not used.

S 243: Comment preposition with both [them] and [actr]

‘As for the mouse, it goes in here.’

?a.bil	ki:	?an	mət	to?	noh
mouse	(link)	3s	enter	to	here
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	P	N	V	P	N
them	+xtns	actr	prdc		
Tpc	+cmnt	Nom			
	1{them}	PAT			
	4{prdc}				

The non-copula preposition is the most common way of marking [them] nouns, though a [them] noun can appear in the sentence initial position without the preposition and may be highlighted by a slight pause.

S 244: Theme noun without comment preposition

‘It was him that the dog bit.’

?a.?e:m	?a.cə:	kap	je:
1ndex	2ndex	3ndex	4ndex
3s (younger)	dog	bite	already
N	N	V	Adv
them			
Tpc			

Section 10.1.4, Theme Nouns and Topicalization, discusses this in more detail.

The copula comment preposition /a₂ is used to link nouns in copula-like constructions since they connect topic nouns with predicate nouns in equational constructions.⁷³ Noun predicates in equational constructions are prevalent in Pacoh, so the copula preposition /a₂ serves to link the first dependent noun with the main predicate in a topic-comment construction. Such constructions need not be only equational, but can be existential as well, as in S245. Thus, though the term ‘copula’ is appropriate for

⁷³ This may be in part due to the original function of this Vietnamese loanword, which is to link two nouns in an equational construction.

some functions, it is used here more generally to apply to all instances of preposition-plus-predicate-noun constructions.

S 245: Copula comment extension preposition

‘Throughout our whole village, there are Pacoh.’

ŋɛ?	duŋ-vɛ:l	hɛ:	la:	ti.kuəj	pa.kəh
all	village	1p	(link)	people	Pacoh
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	N	N	P	N	N
them			+copl	prdc	
Tpc			5[N]	+exst	
			+cmnt		

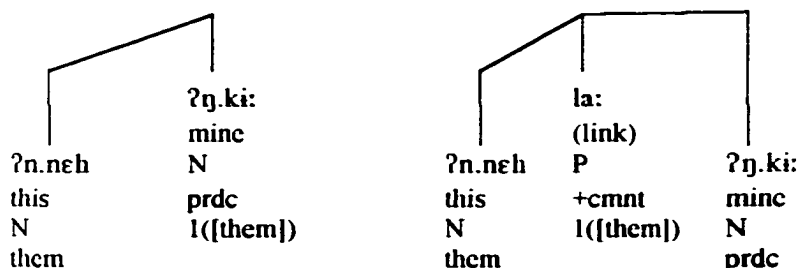
The form *la:* is not considered a verb since it cannot be negated. Also, see section 7.3.2.4 for more details on noun predicates.

Theme-marked nouns appear either with or without comment extension prepositions, as in S246a and b.

S 246: ‘Copula’ sentences with and without a comment preposition

(a) ‘This is mine.’⁷⁴

(b) ‘As for this, it’s mine.’



In both examples, the first noun is the dependent of the following predicate, though in S246a, the predicate is a noun, while in S246b, it is a comment preposition.

⁷⁴ This sentence is shown with a topic-comment structure, though it is indistinguishable from a subject-predicate sentence.

8.2.3.4 Intention Extension Prepositions

Intention extension prepositions are used to express the purpose of an action. They follow verbs as adjuncts. They are subcategorized by the feature $[\pm\text{fact}]$ (cf. section 10.4.2 on fact extension verbs).

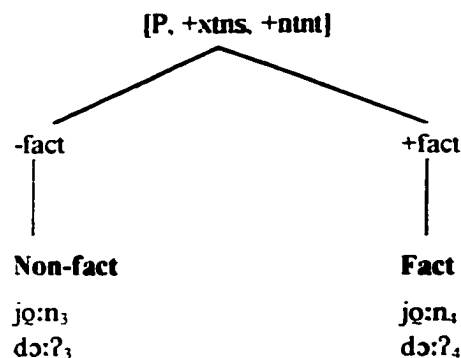


Figure 54: Subcategorization of intention extension prepositions

Fact prepositions take finite clause complements (i.e., verbs and their NOMINATIVE nouns dependents), while non-fact prepositions take non-finite clause complements (i.e., verbs without nouns in the NOMINATIVE case). Based on available data, both pairs of phonological forms represent both fact and non-fact lexical entries (and both have derivationally related verb forms, *jɔ:n* ‘to give’ and *dɔ:ʔ* ‘to put’).⁷⁵

Typically, when an upper clause has the same [actr] as a lower clause, the lower clause does not contain the same noun. However, as in S247, it is possible to have an overt NOMINATIVE noun in the lower clause, suggesting that the lower clause is not a non-finite verb, but rather a finite one with the PAT case relation recoverable through chaining rules.

⁷⁵ This approach is based on the need for the regents to have explicit features to determine what dependents they take, though it is admittedly an awkward proposal.

S 247: Intention extension preposition

‘I work so that I can eat.’

ki:	taʔ	ɟɔ:n	ki:	bo:n	ca:
Is	work	so to	Is	able	eat
		+ntnt	Nom	+fint	
		-fact			

Non-fact prepositions require non-finite verbs as complements, as in S248. The lower clause cannot take a NOMINATIVE noun.

S 248: Non-fact preposition

‘I study Pacoh for fun.’

ki:	riəŋ	ka:ŋ-pa.kəh	ɟən	bu:j
Is	study	Pacoh language	for	fun
N	V	N	P	V
			+xtns	-fint
			-fact	

The [ʔi... non-finite verb can also satisfy this condition and can be the dependent of these non-fact extension prepositions, as in S249.

S 249: Non-fact preposition with non-finite [ʔi... verb

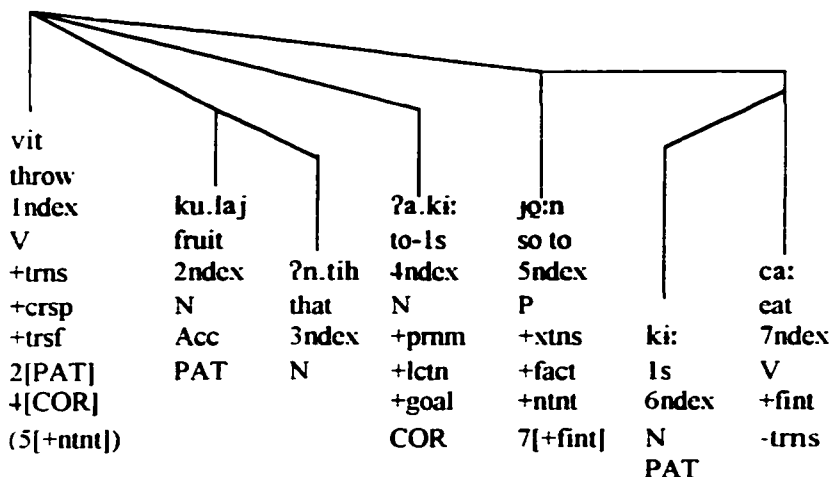
‘I let the chickens and pigs out to eat.’

ki:	ta.lah	ʔn.truəj	ʔa.li:k	ɟɔ:n	ʔi.ca:-ʔi.ca:
Is	let out	chicken	pig	for	to eat
N	V	N	N	P	V
				+xtns	-fint
				-fact	

Intention prepositions are differentiated from their homophonous verb counterparts by the types of noun complements they take. In S250, the intent preposition is not a verb taking the first person pronoun as an ‘object’. The upper verb takes the goal of the action, as the [ʔa... pronoun indicates, so the second pronoun must be the NOMINATIVE dependent of the lower verb, not the complement of the intent preposition.

S 250: Intent preposition versus a verb

'Throw that fruit to me for me to eat.'



Intention prepositions are rare in available data. More typically, sequences of extension verbs and their following verb dependents are used to express intention. The use of the intent preposition *jɔ:n* (derived from 'to give') is much more common than *ɔ:ʔ* (derived from 'to put'), the latter of which could be a recent Vietnamese calque.⁷⁶ Whereas verbs for 'to give' are common sources of intention prepositions in general among other Southeast Asian languages,⁷⁷ Pacoh has intent counterparts for the Vietnamese words for both 'to give' and 'to put', suggesting at least the possibility of language contact and influence.

8.2.4 Locational Prepositions

Locational prepositions have the feature [+lctn] and thus can be complements of locative verbs and adjuncts of non-locative verbs. They are non-extension prepositions

and take only non-predicate nouns as complements. Some are complements of locative verbs and some are adjuncts of any verbs. First, all verbs can take LOC adjuncts.

RR-V17 [V] → [?(LOC)]

Next, non-bare locative verbs require words marked [+lctn], such as locational prepositions or locational relator nouns.

RR-V19 [+lctv, -bare] → [?(+lctn)
LOC]

Finally, locational prepositions assign their noun complements the LOC case relation.

RR-P5 [P, +lctn] → [?(LOC)]

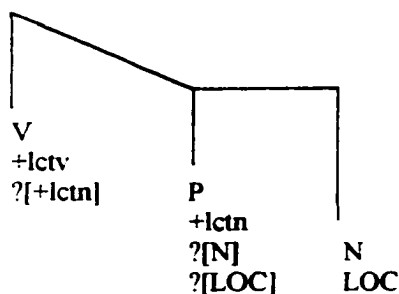


Figure 55: Locational preposition as adjunct

Locational prepositions have two major categories, stationary and non-stationary, divided by the feature [\pm stay]. [+stay] is divided by the feature [\pm lctv]. [-stay] is divided by the feature [\pm goal]. [-goal] is divided by [\pm sorc].

⁷⁶ Vietnamese *đặt* represents both the word meaning 'to put' as well as the word meaning 'in order to.' both sharing distributional patterns with *jɔ:n* in Pacoh.

⁷⁷ Clark 1985 discusses this derivational pattern among Southeast Asian languages.

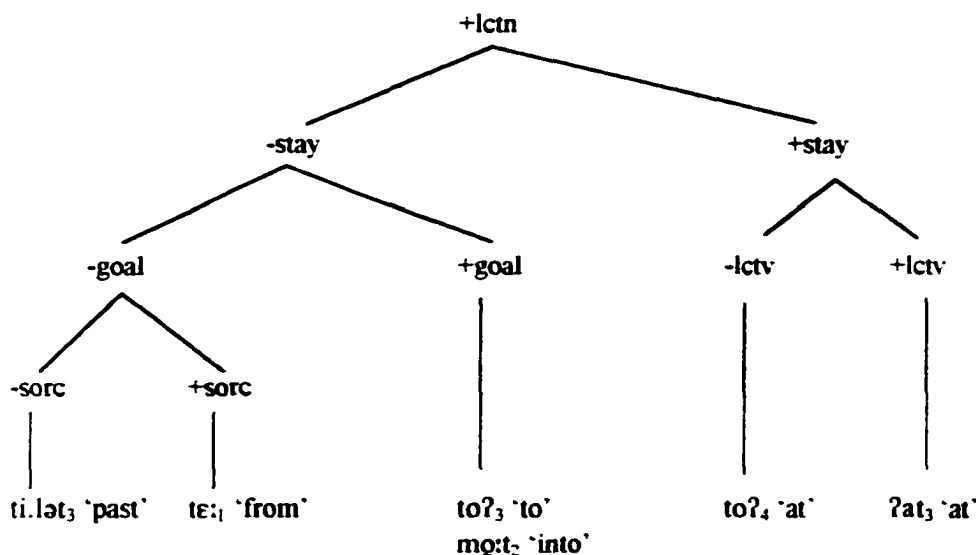


Figure 56: Subcategorization of locational prepositions

Stationary and non-stationary verbs differ in a few ways. Non-stationary [-stay] prepositions are the complements of [+move] locative verbs. These prepositions express the direction of movement of an action. Stationary [+stay] prepositions are adjuncts that can be the dependents of any verb. These prepositions express the location of an event. S251 demonstrates both types of prepositions. In S251, the stationary prepositional phrase ‘in Hanoi’ is optional and refers to the location of the entire event.

S 251: Stationary and non-stationary locational prepositions

‘In Hanoi, I went to his house.’

to?3	ha.no:j	ki:	po:k2	to?4	dun	?a.ca:j ?η.koh
at	Hanoi	I	go	to	house	he
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex
P	N	N	V	P	N	N
-lctv	Lcv	Nom	+lctv	+lctn	Lcv	
+stay	LOC	PAT	+move	-stay	LOC	
			5[+lctn]	+goal		
			5[+goal]			
			1([+stay]) ⁷⁸			

⁷⁸ [+stay] implies the feature [+lctn], so the requirement [?(+lctn)] will not be used with [?(+stay)].

The non-stationary prepositional phrase is a complement of the movement Locative verb *po:k₂* ‘go’ and semantically directs the action.

Differentiating [\pm stay] prepositions provides an explanation for the distributional differences of homophonous prepositional forms and verb regent types.

S 252: Movement verbs and direction prepositions

(a)	dɔ:	la.luh	toʔ ₂	duŋ	(3s-run-to-house)	‘He ran to the house.’
(b)	dɔ:	la.luh	ti.lət ₃	duŋ	(3s-run-past-house)	‘He ran past the house.’
(c)	dɔ:	ʔat	toʔ ₃	duŋ	(3s-situated-at-home)	‘He stays at home.’
(d)	*dɔ:	ʔat	ti.lət ₃	duŋ	(3s-situated-past-home)	*‘He stays past the house.’

In S252, two verbs are used that are differentiated by the feature [\pm move], ‘run’ being [+move] and ‘stay at’ being [-move]. Whereas *ti.lət₃* can follow only ‘run’, the phonological form *toʔ* can follow both ‘run’ and ‘stay at’, showing that this phonological form represents two words, *toʔ₃* [+stay] and *toʔ₂* [-stay].

The non-stationary prepositional construction in S252 is a complement as seen by comparing the acceptability of the form *po:k₂* ‘to go to’ with and without a non-stationary prepositional phrase. In S253a and S253b, two translations are provided, one correct and one incorrect. Whereas ‘go’ in S253a is closer in meaning to ‘to leave’, ‘go’ in S253b is closer to ‘to go to someplace’. In 253a, *po:k₁* is a simple intransitive non-locative verb and does not require a locational noun or preposition. In 253b, *po:k₂* is a movement locative verb, which requires a locational expression that the non-stationary locative preposition provides.

S 253: Non-stationary locational preposition as a complement

- (a) 'Has he left yet?' (b) 'Has he gone home yet?'
 *'Has he gone to yet?' *'Has he gone at the house?'

do:	po:k ₁	jo:h	do:	po:k ₂	to?	duj	jo:h
Index	2ndex	3ndex	Index	2ndex	3ndex	4ndex	5ndex
3s	go	yet	3s	go to	to	house	yet
N	V	Sprt	N	V	P	N	Sprt
PAT	-trns		PAT	+lctv	-stay	LOC	
	-lctv			+move	+goal		
				3[-stay]			

The verb *po:k₂* 'to go to' takes only stationary prepositions as seen by the impossibility of its taking the stationary *to?*₄ as a complement.

S 254: Test for stationary prepositions

- (a) 'I went home (not *I went at home)' (b) '*I left at home.'

ki:	po:k ₁	to?	duj	*ki:	po:k ₂	to?	duj
I	go	to	house	I	go	at	house
Index	2ndex	3ndex	4ndex	Index	2ndex	3ndex	4ndex
N	V	P	N	N	V	P	N
PAT	+lctv	+lctn	LOC	PAT	+lctv	+lctn	LOC
	+move	-stay			+move	+stay	
	3[-stay]				?[-stay]		

Both types of locational prepositions, stationary and non-stationary, are discussed in the subsequent sections.

8.2.4.1 Non-Stationary Locational Prepositions

Non-stationary locational prepositions include *te:*₁ 'from', *ti.lət*₃ 'past', *to?*₅ 'toward', *mo:t* 'into', and *to?*₃ 'to'. They are subcategorized by the features [\pm goal] and [\pm sorc].

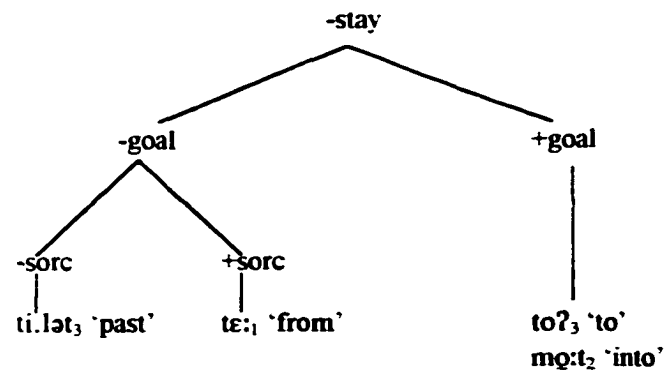


Figure 57: Subcategorization of non-stationary locational prepositions

As stated in 8.2.3, non-stationary locational prepositions are complements of movement locative verbs. As complements, they serve to subcategorize verbs carrying the feature [+lctv]. Movement verbs have semantic characteristics that require non-stationary locational prepositions to denote movement and direction. Examples S255 to S257 show three types of prepositions. In each case, the regent verbs are movement verbs and require non-stay prepositions, which then provide features to denote direction.

S 255: Movement verb and non-stationary preposition

‘Three birds flew over the village.’

pe:	lam	?a.ce?	par	ti.lət	vɛ:l
three	unit	bird	fly	over	village
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	N	N	V	P	N
Nom			+lctv	+lctn	Lcv
PAT			+move	-stay	LOC
			5[-stay]	-goal	
				-sorc	

S 256: Non-stationary locational preposition assigned [+goal]

‘Bring the fellow up to the house.’

?a.ʃər	?a.?ɛ:m	to?	duŋ
bring up	3s (young)	to	house
1ndex	2ndex	3ndex	4ndex
V	N	P	N
+lctv	PAT	+lctn	Lcv
+trns		-stay	LOC
3[-stay]		+goal	

S 257: Goal locational preposition

‘He ran from inside the house.’

do:	luh	te:	kəl.luŋ	duŋ
3s	run	from	inside	house
N	V	P	N	N
+prn	-trns	+lctn	+rltr	-unit
Nom	+lctv	-sorc	+lctn	-lctn
PAT	+move	-stay		
	1[Nom]			
	3[-stay]			

8.2.4.2 Stationary Locational Prepositions

Stationary [+stay] prepositions are further divided into locative and non-locative words. The single [+lctv] preposition *?at*₃, like locative verbs, must take locational relator nouns or non-locative [-lctv] locational [+lctn] prepositions as complements. The non-locative stationary prepositions consist of *te*₂, *ti*, *to*₃, *tu*, all of which mean ‘at’, and take non-locational nouns as complements.

S 258: [-lctv] stationary preposition

‘I’m in America.’

ki:	?at	te:	mi:ʔ
1s	be	at	America
Index	2ndex	3ndex	4ndex
N	V	P	N
PAT	+lctv	+lctn	LOC
	-move	+stay	
	3[+stay]	-lctv	

S 259: [+lctv] stationary preposition

‘I live over there.’

ki:	tu.məŋ	?at	daŋ	?ŋ.koh
1s	live	at	place	there
Index	2ndex	3ndex	4ndex	5ndex
N	V	P	N	N
PAT	-move	+stay	+rltr	LOC
	+lctv	+lctv	+lctn	
	3[+lctn]	4[+lctn]		

This difference between locative and non-locative prepositions is demonstrated in S260, where the locational relator noun *daŋ*₁ ‘place (of)’ (N, [+rltr], [+lctn]) is either needed (a and b) or not (c to f).

S 260: Testing for [±lctv] prepositions

‘At this house.’

(a)	?at	daŋ	duŋ	(at-placc-house)
(b)	*?at	duŋ		(at-house)
(c)	*tɛ:	daŋ	duŋ	(at-place-house)
(d)	tɛ:	duŋ		(at-house)
(e)	*to?	daŋ	duŋ	(at-place-house)
(f)	to?	duŋ		(at-house)

In S260a and b, the locative preposition *?at*₂ ‘situated at’ requires a word carrying the feature [+lctn], satisfied by *daŋ*₁ ‘place of/location’. That preposition cannot take a non-locational common noun, such as *duŋ* ‘house’. In contrast, the non-locative locational prepositions (c to f) cannot take the locational relator, taking instead *duŋ* ‘house’.

The locative *?at*₃ can also take locational prepositions as complements, as in S261a and b, but this relationship is one way since those prepositions are non-locative and do not take locational words as dependents, as in S261c. Furthermore, non-locative locational prepositions cannot take each other as dependents since they take only non-locational nouns, as in S261c.

S 261: Locative versus non-locative locational prepositions

‘At the house.’

(a)	?at	to?	duŋ	(at-at-house)
(b)	?at	ti:	duŋ	(at-at-house)
(c)	*to?	?at	duŋ	(at-at-house)
(d)	*ti	tɛ	duŋ	(at-at-house)

A normal function of stationary prepositions is to mark the location of an impersonal verb. In S262, the prepositional phrase marks the LOCATIVE case form, and the noun in the prepositional phrase bears the LOC case relation.

S 262: Locational preposition with impersonal verb

'In our region, there are Pacoh, Katu, and Bru Van Kieu.'

to?	kruəŋ-ku.tjək	hɛ:	vi:	ti.kuəj	pa.kəh	ka.tu:	vən-kiəw
at	region	1p	exist	people	Pacoh	Katu	Bru Van Kieu
Index	2ndex	3ndex	4ndex	5ndex	7ndex	8ndex	9ndex
P	N	N	V	N	N	N	N
+lctn	LOC		+mprs	PAT	PAT	PAT	PAT
			1([+lctn])				
			2([LOC])				
			-trns				
			+mprs				

8.3 DISTINGUISHING PREPOSITIONS FROM OTHER PARTS OF SPEECH

Prepositions have some distributional overlap with relator nouns and extension verbs. However, in each case, certain syntactic features and structural relationships differ between these word classes, thereby distinguishing each as a different part of speech.

8.3.1 Case Prepositions versus Relator Nouns

Case prepositions include both [+lctn] locational prepositions, which assign the LOC case relation, and [+datv] dative prepositions, which assign the COR case relation.⁷⁹ As a result of sharing these features, relator nouns and prepositions have some overlap in distributional patterns as dependents of locative or correspondent verbs.

⁷⁹ At this point in the analysis, there does not appear to be a case-marking instrumental preposition, only an instrumental relator noun. Whether or not this is the case does not have serious consequences on the current analysis.

S 263: Locational preposition and relator noun as dependents

(a) 'Put the bottle on the table.'

dɔːʔ	be:	toʔ	ki.ba:n
put	bottle	to	table
V	N	P	N
+lctv		+lctn	

(b) 'Put the basket at the front door.'

ta.lih	ka.di:	daŋ	ʔa.lɔːŋ
put	basket	place	door
V	N	N	N
+lctv		+lctn	

In addition, both prepositions and relator nouns as dependents of verbs take their own noun dependents.

S 264: Case-marked preposition and relator noun with dependents

(a) 'To your house.'

toʔ	duŋ	maj
to	house	2s
P	N	N
+lctn		

(b) 'On your house.'

ʔi.niəŋ	duŋ	maj
top	house	you
N	N	N
+lctn		

The primary difference between the two categories is that case-marked relator nouns can occur in the Nom-PAT case or as main predicates, and, as nouns, can take demonstrative pronominal nouns, as in S265.

S 265: Relator noun in Nom-PAT case

'The inside there is clean.'

kəl.luŋ	ʔŋ.koh	ʃac
inside	there	clean
N	N	V
+rltr	+dmns	+sttv
Nom		
PAT		

Locational prepositions and relator nouns also differ semantically. Whereas locational prepositions refer to direction or general location, locational relator nouns refer to specific parts of their dependent nouns. There are corresponding differences in case relations.

S 266: Extension preposition and relator noun case relations

(a) 'He went to A-Luóí.'

də:	po:k	to?	?a.liəj
3s	live	at	A-Luóí
N	V	P	N
		+goal	LOC

(b) 'He is standing on top of the house.'

də:	ta.jij	?i.niəŋ	duŋ
3s	stand	top	house
N	V	N	N
		+rltr	COR
		LOC	

In S266, the locational preposition assigns its noun complement the LOC case, while the relator noun assigns its noun complement the COR case, itself bearing the LOC case relation.

The four possible combinations of verb-dependent combinations with case-related prepositions and relator nouns are shown in stemmas below.

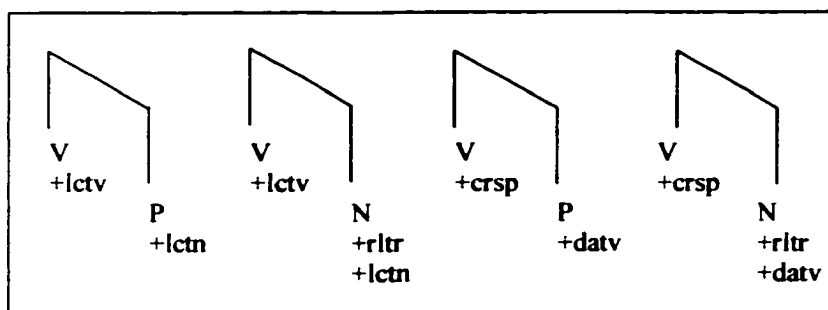


Figure 58: Stemmas of prepositions and relator nouns

So, though belonging to different parts of speech, both locational prepositions and relator nouns assign their noun complements the LOC case relation, and the dative words assign the COR case.

8.3.2 Prepositions versus Extension Verbs

A handful of Pacoh prepositions have verbal derivational correlates, and others overlap in distribution with extension verbs. The phonological forms *to?* and *ti.lət*

represent different lexical items, prepositions and their verbal derivational counterparts.

They can be distinguished based on their meaning and syntactic distribution.

S 267: The preposition *ti.lət*

'I ran past you.'

ki:	la.luh	ti.lət	ʔa.ca:j
1s	run	past	2sm
1ndex	2ndex	3ndex	4ndex
N	V	P	N
	+move	-stay	

S 268: The preposition *toʔ*

'I went out from the house to the street.'

ki:	ŋoh	tɛ:	duŋ	toq	kər.na:
1	exit	from	house	to	street
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	P	N	P	N

Both extension prepositions and extension verbs take predicates, typically verbs, as dependents. The clearest difference between the two parts of speech is the position of nouns in the NOMINATIVE case form. Extension verbs are the highest regents of their sentences and take the NOMINATIVE nouns before them, like other verbs. Extension prepositions occur before the entire sentential complements and thus precede nouns in the NOMINATIVE case form.

Extension prepositions occur before NOMINATIVE noun complements, while extension verbs are main verbs.

S 269: Extension preposition versus extension verb

'Kuma turned six and then went to school.'

toʔ	ku.mə:	tu.pat	tuəjʔ	ku.ma:ʔ	ʔm.pəjʔ	po:k	hə:k
at	year	six	years-old	(name)	and then went	to study	
P	N	N	N	N	V	V	V
+xtns				Nom	+xtns		

In S269, the prepositional phrase with a nominal predicate complement precedes the NOMINATIVE noun. The form ‘and then’ follows the same noun, indicating that it is a verb.

Pacoh preposition dependents of verbs cannot be negated. Only their verbal regents are negated.

S 270: Negation of prepositions

‘This one isn’t better than that one.’

(a)	*lam	?n.nɛh	?ɔ:	li:	ləjʔ	ti.lət	lam	?n.tih
	unit	this	good	very	no	over	unit	that
(b)	lam	?n.nɛh	ləjʔ	?ɔ:	li:	ti.lət	lam	?n.tih
	unit	this	no	good	very	over	unit	that

9. SENTENCE PARTICLES IN PACOH

Pacoh sentence particles occur strictly in sentence-final positions as dependents of predicates, which are usually verbs, though they can be predicate nouns and predicate prepositional phrases as well. These sentence-final particles are used to express inquiry, commands, and a variety of discourse-related functions. Only a handful of sentence particles are found in the data, though presumably there are more, especially those with ‘mood’ functions that tend to be less accessible in restricted fieldwork situations.

9.1 CHARACTERISTICS OF PACOH SENTENCE PARTICLES

Pacoh sentence particles in Pacoh are sentence final adjuncts of predicates, as stated in RR-S1. The predicates can be verbs, extension prepositions, or nouns.

$$\text{RR-S1} \quad [\text{prdc}] \rightarrow \left[\begin{array}{c} ?([\text{Sprt}) \\ @<?([\text{Sprt}) \end{array} \right]$$

This rule states that a sentence particle will have a higher index number and thus follow its regent. However, sentence particles in Pacoh actually are more than post-predicational, they are sentence final, and no other elements follow them. RR-S2 states that a predicates’ other dependents precede sentence particles.

$$\text{RR-S2} \quad [\text{prdc}] \rightarrow \quad [?[X] < ?([+\text{Sprt})]$$

Mood and imperative sentence particles are only dependents of verbs, while interrogative sentence particles can be the dependent of any predicate. However, interrogative sentence particles can only occur with [+qstn, -polr] verbs (see section 10.1.6), as in S271a and b.

S 271: Interrogative sentence particle and interrogative noun

(a) 'Buy something.'

pləj	ʔa.məh	ʔaw
buy	something	IMP.
V	N	Sprt
-qstn	-ntrg	+mprt

(b) 'What did you buy?'

maj	pləj	ʔa.məh
2s	buy	what
N	V	N
	+qstn	+ntrg
	-polr	

Pacoh sentence particles never cooccur with interrogative pronominal nouns. In sentences S272a and b, neither an imperative nor an interrogative sentence particle can cooccur with an interrogative noun.

S 272: Interrogative sentence particle and interrogative noun

(a) 'Are you doing something?'

maj	taʔ	ʔa.məh ₂	ləjʔ
2s	do	something	INT.
N	V	N	Sprt
	+qstn	-ntrg	+ntrg

(b) 'What did you do?'

*maj	taʔ	ʔa.məh ₁	ləjʔ
2s	do	something	noʔ
N	V	N	Sprt
	+qstn	+ntrg	+ntrg

This is due to the difference between polar and non-polar verbs ([±polr]), both of which are [+qstn] verbs, which have the contextual requirement [ʔ[+ntrg]]. [+polr] interrogative verbs can take only one [+ntrg]. While non-polar verbs may take interrogative nouns, such as interrogative pronominal and numeral nouns, polar verbs take interrogative sentence particles (see section 10.1.6, Question Verbs).

Pacoh sentence particles are distinguishable from other parts of speech. First and foremost, they cannot take other lexical dependents, while all other parts of speech can. Moreover, they do not take part in case assignment, as do nouns, prepositions, and verbs. They follow verbs, like adverbs, but cannot take dependents, unlike adverbs. Finally, sentence particles cannot be negated.

9.2 SENTENCE PARTICLE SUBCATEGORIES

Pacoh sentence particles are subcategorized by the primary feature [\pm ntrg] (interrogative). Interrogative sentence particles are divided by the feature [\pm spct] (aspect), and non-interrogative sentence particles are divided by the feature [\pm mprt].

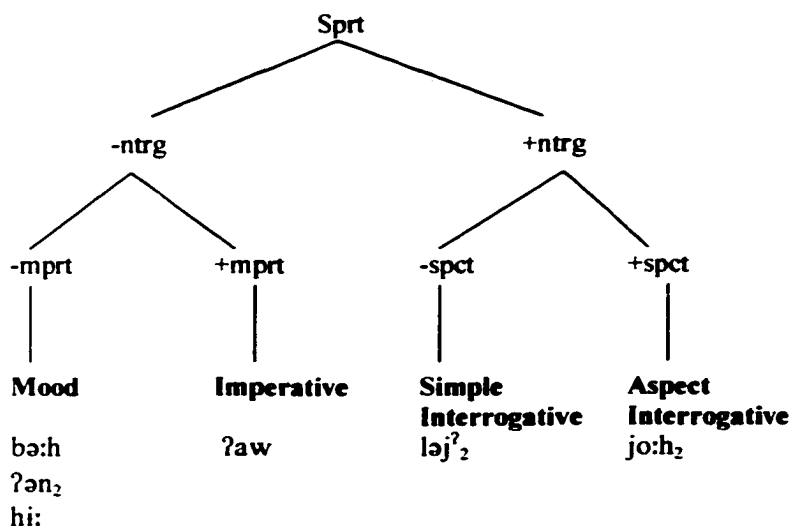


Figure 59: Subcategorization of sentence particles

The rest of this chapter is divided into two primary subsections: interrogative and non-interrogative sentence particles.

One of these subcategories shows a distributional difference. The non-aspect sentence particle cooccurs with both noun and verb predicates, as described in section 9.2.1 below. Assuming that these sentence particles are always dependents, the regent verbs and nouns determine which sentence particle subcategory it may or may not take. Certain redundancy rules deal with the issue of restricting dependent subcategories.



9.2.1 Interrogative Sentence Particles

Interrogative sentence particles are used to elicit affirmative-negative answers. They can occur in sentences with a rising interrogative intonational pattern.

S 273: Interrogative intonation

(a) 'Is that right?'

(b) 'No, it's not.'

			
li:	ləjʔ	ləjʔ	li:
correct	no	no	correct
V	Sprt	V	V
+sttv	+ntrg	+ngtn	+sttv

Both primary interrogative sentence particles have negation extension verb counterparts that can be used in responses. These sentence predicates are the adjuncts of polar question verbs.

9.2.1.1 Aspect Interrogative Sentence Particle

The aspect interrogative sentence particle *jo:h* is used to ask whether an action has been completed.

S 274: Aspect interrogative sentence particle

(a) 'Are you tired yet?'

(b) 'Not yet.'

?a.lɛ:ʔ	jo:h ₂	jo:h ₁	?a.lɛ:ʔ
tired	YET	not yet	tired
V	Sprt	V	V
+sttv	+ntrg	+xtns	+sttv
	+spct	+spct	

The responses typically have aspect marked by aspectual extension verbs or aspect adverbs to indicate completion or non-completion of an action. This form did not cooccur with noun regents in the data.

9.2.1.2 Simple Interrogative Sentence Particle

The simple interrogative sentence particle *ləjʔ₂* is used to elicit affirmative-negative answers. They occur with both nominal and verbal predicate regents. The answer is typically the regent verb alone, as in S275b.

S 275: Simple interrogative sentence particle

(a) 'Is there still some rice left?'			(b) 'Yes. there is.'
jo:l	dɔ:j	ləjʔ	jo:l
still-exist	cooked-rice	no?	still-exist
V	N	Sprt	V

Semantically, these interrogative sentence particles deal with truth values. Accordingly, this subcategory cooccurs with predicate noun regents.

S 276: Predicate noun with sentence particle

'Is this that teacher's (possession)?'

?m.par	?n.neh	la:	?n.dɔ:	tʰəj	?ŋ.koh	ləjʔ
thing	this	be	of-3s	teacher	that	NO?
N	N	P	N	N	N	Sprt

The apparent compound form *?a.liŋ-ləjʔ* 'or not' occurs in sentence-final position in the data. The form *?a.liŋ* is a conjunction meaning 'or'. Rather than considering this two words, it is considered a two-syllable lexicalized form.

S 277: 'Or not' sentence particle

'Is this yours?'

?m.par	?n.neh	?a.ca:j	li:	?a.liŋ-ləjʔ
thing	this	brother	correct	or not
N	N	N	V	Sprt

9.2.2 Non-Interrogative Sentence Particles

Non-interrogative sentence particles express 'mood' functions, such as emphasis and urging. As such, restrictions on distribution are primarily semantic. In fieldwork sessions, the inappropriate use of sentence particles was quickly noticed by Pacoh speakers. In S278, the general mood particle cannot be substituted with an imperative one.

S 278: Imperative sentence particle and interrogative noun

(a) 'Buy something.'

pləj	ʔa.məh	ʔaw
buy	something	IMP.
V	N	Sprt
	-ntrg	+mprt

(b) 'What did you buy?'

maj	pləj	ʔa.məh	(*ʔaw)
2s	buy	what	(IMP.)
N	V	N	Sprt
		+ntrg	+mprt

9.2.2.1 Imperative Sentence Particle

One imperative sentence particle is found in the data, *ʔaw*, which is used to urge the listener into action.

S 279: Imperative sentence particle

'When I talk to you, listen up.'

ki:	pa.pi:	ʔə:n	ʔa.maj	kam.maj	ʔaw
Is	speak	for	to-you	listen	IMP
N	V	P	N	V	Sprt
					+mprt

Imperative mood particles can only be used with animate second person 'subjects'. S280 is unacceptable.

S 280: Improper use of imperative mood sentence particle

'?Taste very good rice!'

*dɔ:j	ʔn.nəh	ʔjəm	li:	ʔaw
rice	this	tasty	very	IMP.
N	N	V	Adv	Sprt
				+mprt

9.2.2.2 Mood Sentence Particle

The mood sentence particles function to express emphasis or to lighten the sentence. There may be more mood sentence particles, as is the case with other Southeast Asian languages, though there are few in existing data.

S 281: Emphatic mood sentence particles

(a) 'Boy, this rice is good.'

dɔːj ?n.nɛh ɣiəm li: hə:
 rice this tasty very
 N N V Adv

(emphatic)
 Sprt
 -ntrg
 -mprt

(b) 'You're right, alright!'

li: hi:
 correct (emphatic)
 V Sprt
 -ntrg

10. VERBS IN PACOH

Verbs play a crucial role in forming sentences since they are sentential regents and determine the order of primary constituents in sentences, in particular, case-marked elements. This chapter consists of four main sections. In the first section, Pacoh verbs are characterized primarily in terms of their syntactic distribution and functions (e.g., case-marking and dependencies). In the second section, the primary verb types (extension, transitive, correspondent, locative, and mode) are characterized and differentiated. The second section does not describe Pacoh verb subcategories, but rather deals with general categories of verbs (e.g., general properties of all locative verbs, regardless of subcategory). In the final two sections, which are divided by the primary subcategories extension and non-extension, Pacoh verbs are subcategorized and described.

10.1 CHARACTERISTICS OF PACOH VERBS

The characteristics of verbs differ widely across languages, but a few general syntactic statements about verb roles as regents hold true in most languages, and in Pacoh as well.

- (1) All verbs are predicates.
- (2) The highest regents in most sentences are verbs. That is, verbs most often form the 'heads' of sentences.
- (3) Verbs may take as dependents nouns, verbs, adverbs, adpositions, sentence particles, and conjunctions, and so govern their distribution in sentences. In

effect, verbs are able to take as dependents more parts of speech than any other can.

(4) Verbs assign case relations to their noun dependents.

The function of case assigning is not limited to verbs—prepositions and nouns also assign case to dependent nouns—but it is a primary characteristic of verbs in the formation of sentences.

Other shared attributes of Pacoh verbs are their cooccurrence with aspectual and negation words. Most Pacoh verbs can be dependents of aspectual and negation verbs, the exception being negation and aspectual verbs themselves since they are prime extension verbs and cannot be preceded by other verbs (see section 10.4.4.5.1 for discussion of prime verbs). Other exceptions are dealt with in assorted subsections on Pacoh extension verb subcategories. Only Pacoh verbs and adverbs can be negated by the negation word *ləʃ* ‘no/not’,⁸⁰ thereby differentiating them from other parts of speech. Verbs differ from adverbs in that they can occur in immediate dependency constructs with aspectual words (including both verbs and adverbs), such as the perfective adverb *je:* and the perfective verb *k^hɔ:ʃ* ‘already’, the continuative verb *?at*, or the negation aspectual verb *jo:h* ‘not yet.’

S 282: Aspect and Pacoh verbs

(a) ‘He’s left already.’			(b) ‘We’re waiting for him.’				(c) ‘I don’t have a wife yet.’			
dɔ:	po:k	je:	he:	?at	pən	dɔ:	ki:	jo:h	vi:	kəm.paj
3s	go	already	1p	(progr.)	wait	3s	1s	not-yet	have	wife
N	V	Adv	N	V	V	N	N	V	V	N
		+prfc			+prgr				-prfc	

⁸⁰ A few exceptions occurred in the data and are dealt with in section 10.4.4.5.1.

A complete characterization of Pacoh verbs in terms of semantic features is beyond the scope of this work. It can be said briefly that verbs denote actions or states of being, though these same semantic aspects can be indicated by nouns, prepositions, and adverbs as well. Syntactic, not semantic, criteria remain the primary means of distinguishing verbs from other parts of speech in this grammar. In the following subsections, other primary characteristics of Pacoh verbs are described, such as word-formation patterns, dependencies, and case-marking.

10.1.1 Word-Shape Classes of Pacoh Verbs

Not all Pacoh verbs have specific word forms that clearly distinguish them from other parts of speech. However, some word-formation strategies in Pacoh are, in general, restricted to verbs and are correlates of specific syntactic and semantic subcategories. S. Watson (1964, 1966) discussed several classes of verb-related word forms in Pacoh. Watson's articles describe the phonological shapes involved as well as the semantic and syntactic properties of those verb types. A summary of the verb-related word shapes (and related phonological variants) in Pacoh and their associated grammatical characteristics based on Watson's work are seen in Table 61. In each case, phonological word shapes associated with certain verb types correspond to specific semantic and syntactic characteristics. In some cases, the word forms have homophonous derivationally related words, such as causative extension verbs and homophonous causative non-extension verb subcategories.

Type	Form	Variants	Examples
Causative	[pa...	[ta.... [ʔa.... [ca.... [pi.... [ti...	pa.hɔ:k 'to cause to study'
Reciprocal	[tər...	...ər...	tər.to:ŋ 'to talk to each other'
Causative-Reciprocal	[pər...	[cər...	pər.cɔ:m 'to make each other know'
Resultant	[ti...	[tu...	ti.də:f 'be broken'
Involuntary	[ta...	-	ta.ŋəŋ 'to look at accidentally'
Reduplication	[CV...	-	ci.ca: 'eating' pa.pɔ:k 'going'
Pretence	[ʔn...	-	taʔ-ʔn.taʔ 'to pretend to sleep'

Table 61: Pacoh verb word-formation patterns

Due to the organization of this grammar, each verb subcategory, regardless of their association with certain word-forms, is dealt with in respective subsections based on their primary syntactic features (i.e., [\pm xtns] and the various case-related features, such as [\pm trns]). For more discussion on general word-formation properties involving verbs, see Chapter 11.2.4.

10.1.2 Dependency Relationships of Pacoh Verbs

Pacoh verbs can take dependents from any part of speech (including verbs, nouns, adverbs, prepositions, sentence particles, and conjunctions), as stated in RR-V1.

Restrictions apply to various lexical subcategories dealt with in various subsections.

$$\text{RR-V1} \quad [V] \rightarrow \left[\begin{array}{l} ?([V]) \\ ?([N]) \\ ?([P]) \\ ?([Adv]) \\ ?([Cnjc]) \\ ?([Sprt]) \end{array} \right]$$

Pacoh verbs may be the dependents only of verbs, prepositions, conjunctions, and nouns, as shown in simple stemmas in Figure 60. The combination of a verb regent and a conjunction as a dependent is not shown since the distribution of conjunctions is determined by the dependents of the conjunctions, whether nouns or verbs. Conjunction constructions occur anywhere their complements may.

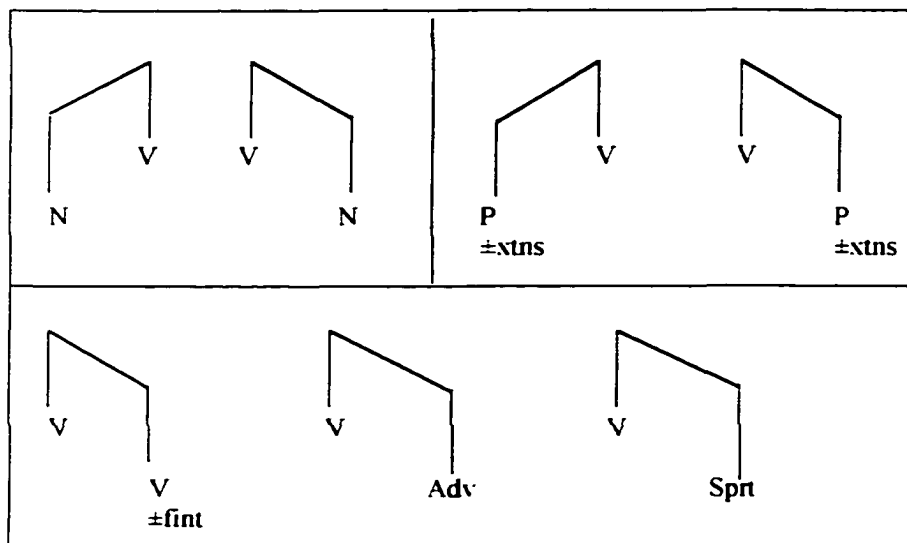


Figure 60: List of verb dependencies

As dependents, nouns and prepositions may either follow or precede their verb regents, whereas adverbs, verbs, and sentence particles are always in the postverbal position.

These dependencies are discussed and formalized with redundancy rules below.

Noun dependents appear before or after Pacoh verbs, depending on their grammatical roles, explained in 10.1.3. Preverbal nouns, which are never predicates, are either theme-marked or case-marked nouns. Only root verbs can take dependent theme nouns. Theme nouns precede the NOMINATIVE nouns of finite clauses.

$$\text{RR-V3} \quad [\text{V}] \quad \rightarrow \quad \left[\begin{array}{l} ?([\text{them}]) \\ ?([\text{them}]<@) \end{array} \right]$$

RR-V8	[+fint]	→	$\left[\begin{array}{l} ?[\text{Nom}] \\ ?([\text{N}, \text{Nom}]) \\ ?([\text{N}, \text{Nom}])<@ \end{array} \right]$
RR-V5	[+fint, +root]	→	$\left[\begin{array}{l} ?([\text{them}]) \\ ?([\text{them}])<?([\text{N}, \text{Nom}]) \end{array} \right]$

These linear ordering rules are demonstrated in S283.

S 283: Verb with [them] noun

‘As for crossbows. I don’t know how to make them.’

tu.miəŋ	ki:	ləjʔ	cə:m	taʔ
crossbow	1s	no	know	make
Index	2ndex	3ndex	4ndex	5ndex
N	N	V	V	V
them	actr	+xtns	+xtns	+trns
	Nom	1[them]		2[actr]
	AGT	2[Nom]		2[AGT]
		1[them]<2[Nom]		1[PAT]
		2[actr]		
		2[Nom]		

The theme is related to a regent verb’s case-marked noun by linking rules, as discussed in section 10.1.4. Preverbal case-bearing nouns include NOMINATIVE/PAT and AGT nouns and LOCATIVE/LOC nouns. Postverbal noun dependents consist of two types, predicate and non-predicate nouns. Only the latter of which receive case assignment. Non-predicative postverbal nouns may take the PAT, LOC, MNS, and COR case relations.

Pacoh verbs can take following verbs as adjuncts in sentences expressing sequences of events or events with a cause-and-effect relation.

RR-V2	[V]	→	$\left[\begin{array}{l} ?([\text{V}]) \\ @<?([\text{V}]) \end{array} \right]$
-------	-----	---	--

Extension verbs require predicate complements, while non-extension verbs take verbs only as adjuncts.

S 284: Intransitive extension verb

'We went down to bathe with water and to fish.'

he:	ʃiər	hɔ:m	da:ʔ	ʔa.ba:f	bɔəjʔ
1p	descend	bathe	water	fish for	fish
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	V	N	V	N
	-trns	-fint		-fint	
	+xtns				
	-fact				
	3([V])				
	3[-fint]				
	5([V])				
	5[-fint]				

In S284, the non-fact intransitive extension verb 'to descend' requires a non-finite verb complement, though in this case, there are two lower verbs.⁸¹ The resulting sequences of verbs are single, non-coordinative sentences, involving verb regents and dependents. These kinds of verbs cannot be separated by conjunctions and the lower verbs cannot be negated. In Pacoh, though conjunctions can be used to link predicates, they generally are not. S85 below is a single sentence with a single meaning and single intonational unit.

S 285: Non-extension verb with predicate adjunct

'He studied and then went home.'

da:	hɔ:k	je:	po:k	toʔ	duŋ
3s	study	already	go	to	house
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	Adv	V	P	N
	4([V])				

Pacoh verbs take locational prepositions in both preverbal and postverbal positions, as in S286a and b.

⁸¹ The term 'serial verb constructions' has often been used in linguistic literature dealing with verb sequences in Asian languages. Wilawan 1993 demonstrated how so-called SVCs are simply constructions involving fact and non-fact extension verbs, a characteristic not limited to Asian languages.

S 286: Verbs with locational preposition

(a) 'He's gone back home.'				(b) 'It's very hot in the jungle.'			
do:	co:	to?	dɔŋ	to?	?m.bu:t	?a.to?	li:
3s	return	to	house	at	jungle	hot	very
1index	2ndex	3ndex	4ndex	1index	2ndex	3ndex	4ndex
N	V	P	N	P	N	V	Adv
	-mprs	+lctn		+lctn		+mprs	
	3[+lctn]					1[+lctn]	

Typically, Pacoh locative verbs take their directional locational prepositions in the postverbal position, while impersonal verbs take preverbal dependent prepositions.

Extension prepositions (which take predicate complements) also have assorted restrictions, some occurring before and some after verbs, depending on the subcategory, as discussed in section 8.2.3.

Adverbial dependents of Pacoh verbs always follow their verb regents, denoting manner, direction, or completion of their regent verbs.

RR-V31 → [@<?([Adv])]

S 287: Verb with adverb adjunct

'He studies quite well.'

do:	ho:k	ho:j	li:
3s	study	well	very
1index	2ndex	3ndex	4ndex
N	V	Adv	Adv
	3([Adv])	4([Adv])	

All verbs can take sentence particles as clause-final dependents. This applies to predicates in general, as stated in RR-2.

RR-2 [prdc, +root] → [?([Sprt])
@<?([Sprt])]

Sentence particles indicate interrogative or mood, such as emphasis or imperative.

S 288: Verb with sentence particle adjunct

'Boy, did he fool us!'

dɔ:	pi.loh	he:	bə:h
3s	fool	1p	(emphasis)
N	V	N	Sprt

Interrogative sentence particles can only be the dependents of question verbs (see section 10.1.6).

In sum, Pacoh verbs show a number of shared distributional attributes. All Pacoh verbs can take extension and non-extension verbs as complements. Extension prepositions, which take predicates as complements, are clause-linking in function, while non-extension prepositions, which take nouns as complements, indicate direction or location. In general, preposition dependents can follow or precede their regent verbs, however, some preposition subcategories have distributional restrictions (e.g., directional prepositions tend to follow their regent verbs).

10.1.3 Case and Pacoh Verbs

Case is used in Lexicase for the subcategorization of verbs and determining the syntactic distribution of their noun and preposition complements. Pacoh verbs assign case relations to nouns when they appear in any of the four case forms in Pacoh: the TOPIC, NOMINATIVE, ACCUSATIVE, or DATIVE case forms. These case forms are marked by word order and lexical subcategories. The TOPIC case form, where theme-marked nouns appear, precede finite clauses and their nouns in the NOMINATIVE case form. The NOMINATIVE case form is where PAT or AGT complements occur as dependents of finite clauses. The least marked postverbal case form is the ACCUSATIVE case form. The DATIVE case form is postverbal, but is only satisfied by a dative noun.

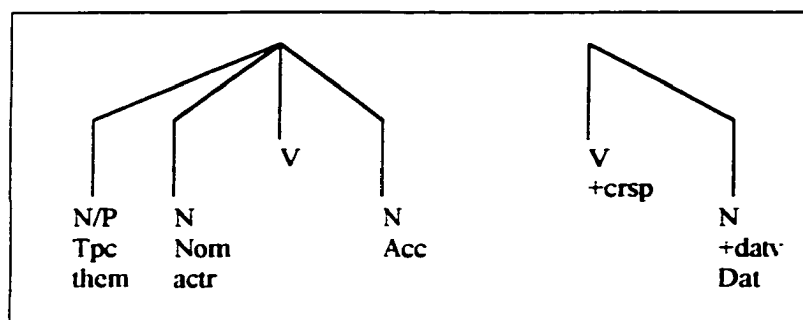


Figure 61: Pacoh verb-related case forms

In Lexicase, there are five case relations that can be assigned to dependents of verbs or prepositions: PAT, AGT, COR, LOC, and MNS. Case forms are indicators of which nouns can be assigned which case relation. The eight correspondences of verb-related case forms and case relations are shown in Table 62.⁸²

	PAT	AGT	COR	LOC	MNS
Nom	1	2		3	
Acc	4		5	6	7
Dat			8		

Table 62: Verb-related case correspondences

Each correspondence is illustrated in sentences S289 to S294. S289 shows an ordinary NOMINATIVE/PAT of an intransitive verb.

S 289: Nom-PAT

‘They studied yesterday.’

?i.ŋaj-?i.no: ?a.pe:	ho:k
yesterday 3s	study
N	V
	Nom
	PAT

⁸² The TOPIC case form is not included since it always takes a [them] noun rather than a case form.

The primary difference between S290 and S291 is that, though both have LOC complements, the preposition in S290 marks the LOCATIVE case form while the locational relator noun in S291 is in the ACCUSATIVE case form, being in the postverbal position.

S 290: Nom-AGT and Acc-PAT

‘Put the three baskets of corn on the ground.’

maj	dɔ:k	pɛ:	ʔa.teh	ʔa.kɔ:j ²	ʔa.ʔi:m	toʔ	ku.tjəʔ
2s	put	three	dossier	contain	corn	to	earth
N	V	N	N	V	N	P	N
Nom		Acc				+lctn	Lcv
AGT		PAT					LOC

S 291: Acc-LOC

‘They live over there.’

ʔa.pɛ:	tu.mɔŋ	daŋ	koh
3p	live	place	there
N	V	N	N
Nom		+lctn	
PAT		Acc	LOC

The COR case relation, though marked by different case forms, can denote extent or the beneficiaries of actions, as in S292 and S293.

S 292: Acc-COR

‘How many kilograms do you weigh?’

ʔa.ca:j	ʔn.taŋ	li.mɔ:	kən
brother	heavy	how-much	kilogram
N	V	N	N
Nom		Acc	
PAT		COR	

S 293: Dat-COR and Acc-PAT

‘Buy one for me.’

pləj	ʔa.ki:	mɔ:j	lam
buy	for-1s	one	unit
V	N	N	N
	+datv	Acc	
	Dat	PAT	
		COR	

S294 shows the MNS case relation, which in Pacoh is generally marked by a specific relator noun.

S 294: Lev-MNS

'Hit the mouse with a stick.'

puh	ʔa.bil	daŋ	du:j
hit	mouse	with	stick
V	N	N	N
	Acc	+rltr	
	PAT	+nstr	
		Acc	
		MNS	

In Pacoh data, the NOMINATIVE case form is often left unfilled. As Lexicase does not allow for empty nodes or movement, these instances of open NOMINATIVE slots must be accounted for in different ways. First, the noun of a finite verb (a verb which requires a 'subject') may be omitted in a discourse context in which the 'subject' is understood and recoverable from that discourse context, thereby satisfying the syntactic contextual requirement of the verb. Second, a non-finite verb complement of an extension verb cannot take an overt NOMINATIVE noun complement, though again, the 'subject' may be recoverable, in this case, from the index of the upper verb. Third, impersonal verbs cannot take referential dependents in the NOMINATIVE case form.

10.1.4 Theme Nouns and Topicalization

In Pacoh, topicalized nouns occur before clauses with finite regents. Such theme-marked nouns, which have the feature [them], occur before nouns in the NOMINATIVE position if there is one. This position is the TOPIC case form. These theme nouns can be linked to PAT or AGT complements of their regent verbs, as in S295 to S297.

S 295: Recovering a PAT for an intransitive verb

‘As for that tree, it’s small.’

ʔa.lɔ:ŋ	ʔŋ.koh	ki:	kət
tree	that	so	small
1ndex	2ndex	3ndex	4ndex
N	N	P	V
them		+xtns	1[them]
		+cmnt	1[PAT]

S 296: Recovering an AGT for a transitive verb

‘As for the mother, she’s calling to the baby goat.’

ʔa.ʔi:	ki:	pa.ʃuər	ʔm.bɛ:ʔ-ʔa.kaj
mother	so	call	baby goat
1ndex	2ndex	3ndex	4ndex
N	P	V	N
them	+xtns	+trns	PAT
	+cmnt	1[them]	
		1[AGT]	
		4[PAT]	

S 297: Recovering a PAT for a transitive verb

‘It was him that the dog bit.’

ʔa.ʔɛ:m-ʔŋ.koh	ʔa.cɔ:	kap	je:
3s (younger)	dog	bite	already
1ndex	2ndex	3ndex	4ndex
N	N	V	Adv
them	Nom	+trns	PAT
	AGT	2[Nom]	
		2[AGT]	
		1[them]	
		1[PAT]	

In each case, the verb identifies the theme noun and associates it with the missing case related complement through linking rules.

Marking of theme nouns can be accomplished in three ways. The topicalized nouns can be the preceding dependents of comment extension prepositions. They can also be marked by phonetic pauses before their regent predicates. Pacoh also has a class of [ʔi... non-finite verbs that are commonly used with theme nouns.

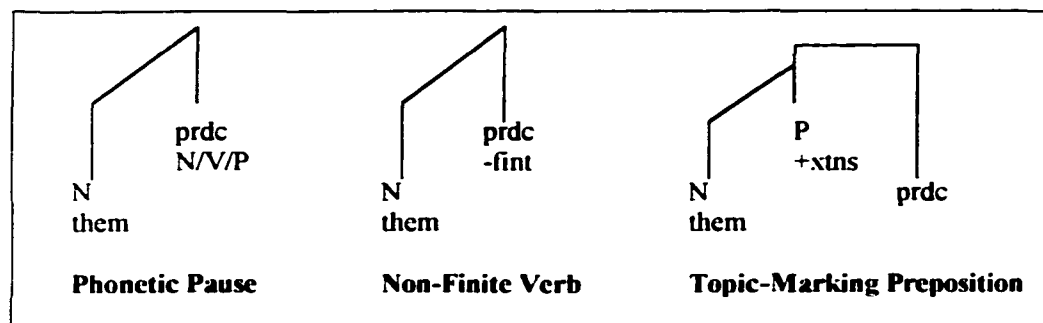


Figure 62: Theme nouns and their regents

The regent predicates are generally verbs, but they can also be nouns in equational constructions.

A theme noun need not have a referential noun in the associated finite clause for purposes of marking case. In S298, the word ‘wood’ provides a point of reference in talking about making poles.

S 298: Theme noun that provides no case features

‘As for wood, we make poles.’

ʔa.lɔ:ŋ	ki:	ʔi.taʔ	ti.nɔ:l
wood	so	to make	pole
1ndex	2ndex	3ndex	4ndex
N	P	V	N
-unit	+xtns	+crsp	Acc
them		-trns	COR
		+fint	
		actr	
		m[PAT]	
		4[COR]	

It implies that wood is used to make poles, but the verb ‘to make’ only requires a single PAT complement, which is already there. The [ʔi... non-finite verb is a kind of ‘pro-drop’ verb which here recovers its required [actr] from the discourse context, as discussed in section 10.2.7.

10.1.5 Nouns Derived from Verbs and Utterances

Any utterance can also serve as a noun. This relationship between utterance and word can be stated by a general derivational rule.⁸³

$$\text{DR-N1} \quad [X] \quad : \quad \left[\begin{array}{c} [N] \\ [+quot] \end{array} \right]$$

Such forms are typically used as complements of speech correspondent verbs (section 10.3.4.3).

S 299: Noun derived from finite clause

'I talked about my traveling in Vietnam.'

ki:	pa.pi	ki:-po:k-ju:-lic-to?-viət-na:m
1s	talk of	my touring in Vietnam
1ndex	2ndex	3ndex
N	V	N
Nom	-tms	+quot
PAT	+crsp	Acc
	+spch	COR
	1[PAT]	
	3([+quot])	
	3[COR]	

Thus, the reported speech 'I went on a tour in Vietnam', is a derived noun. Another example of derived nouns is given in example S300 where the form in the 'subject' position has a gerund-like function.

S 300: Verb-derived noun

'Studying English is very fun.'

hɔ:k-kaŋ-ʔa:ŋ	li:	bu:j
study-English	very	fun
N	V	V
	+xtns	+sttv
	+degr	

⁸³ Such a rule was posited by Taylor (1971) who called the rule the 'Camel Belching Rule,' acknowledging that any sound—human, animal, or otherwise—can serve the function of a noun.

10.1.6 Question Verbs

Expressing the interrogative in Pacoh is accomplished by the use of interrogative pronouns and interrogative sentence final particles as the dependents of verbs. Pacoh verbs are subcategorized by the feature $[\pm\text{qstn}]$. Question verbs are then subcategorized by the feature $[\pm\text{polr}]$. This results in three subcategories: non-question, non-polar question, and polar question verbs.

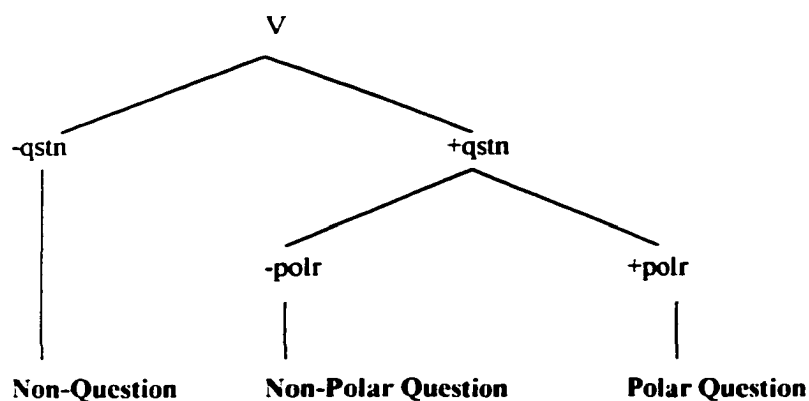


Figure 63: Pacoh question verb types

Question verbs take interrogative nouns, but not interrogative sentence particles, while the reverse applies to non-question verbs.

RR-V15 $[\text{+qstn}] \rightarrow [?\text{[N,+ntrg]}]$

RR-V16 $[\text{-qstn}] \rightarrow [?\text{[([Sprt, +ntrg])}]]$

Predicate nouns are considered non-question and so can take only interrogative sentence particles. S301a to d illustrates question verbs and non-question verbs and noun predicates.

S 301: Question verb constraints

(a) 'What did you buy?'

maj	pləj	ʔa.məh
2s	buy	what
1index	2index	3index
N	V	N
	+qstn	+ntrg
	3[N]	
	3[+ntrg]	

(b) '*Did you what did you buy?'

*maj	pləj	ʔa.məh	ləjʔ
2s	buy	what	no
1index	2index	3index	4index
N	V	N	Sprt
	+qstn	+ntrg	+ntrg
	3[ntrg]		

(c) 'Is this yours?'

ʔn.nəh	ʔŋ.ki:	ləjʔ
this	of-1s	no
N	N	Sprt
	prdc	+ntrg
	-qstn	
	3[Sprt]	
	3[+ntrg]	

(d) 'Did you buy something?'

maj	pləj	ʔa.məh	ləjʔ
2s	buy	something	no
N	V	N	Sprt
	-qstn	-ntrg	+ntrg
	4[Sprt]		
	4[+ntrg]		

S301b is ungrammatical due to the presence of both an interrogative noun and sentence particle. The form *ʔa.məh* represents two lexical entries, one interrogative as in S301b and one non-interrogative indefinite as in S301d.

10.1.7 COR, LOC, and Verb Adjuncts of Verbs

Verbs in Pacoh may take LOC, COR, and verb adjuncts, of which there can be multiple occurrences of each in the same sentence. Adjuncts do not play a role in verb subcategorization. All verbs may take LOC adjuncts.

RR-V17 [V] → [?([LOC])]

Next, a cloning Redundancy Rule applies to allow for LOC adjuncts to be added indefinitely (n stands for an index already marked).

RR-V18 [n([LOC])] → [?([LOC])]

These rules are demonstrated in S302a and b.

S 302: Locational and time LOC adjuncts

(a) 'In Hué, I study in school.'

to?	hwe?	ki:	hɔ:k	to?	triəŋ	
at	Hué	city	Is	study	at	school
P	N	N	N	V	P	N
	+lctn			-trns		
	LOC			1([LOC])		

(b) 'When I went in, I saw her.'

?n.dəŋ	?i.mə:t	ho:m	?a.və:q	?ŋ.koh
when	to enter	see	woman	that
N	V	V	N	N
	+time		+trns	
	LOC			

LOC adjuncts consist of locational and time nouns as well as prepositional phrases. Both 'school' and 'Hué' refer to the location of 'studying', and more adjuncts could be added, though they would be pragmatically odd.

All verbs may take other verbs as adjuncts, again without limit as to number, so this too is a cloning Redundancy Rule.

$$\text{RR-V21} \quad [n([V])] \rightarrow [?([V])]$$

This kind of dependency relationship results in a number of semantic relationships, such as cause-effect, sequence, and simultaneous action.

S 303: Verb adjunct of a verb

'He ate and then left/Having eaten, he left.'

do:	ca:	je:	po:k
3s	eat	already	go
1ndex	2ndex	3ndex	4ndex
N	V	Adv	V
	4([V])		

The result in some cases is what might appear to be two sentences, but this stringing of finite verbs without conjunctions still represents a single concept, single intonational unit, and a single syntactic structure, as in S304.⁸⁴

S 304: Single multi-clause sentence

‘Wild pigs get stuck on this (trap), and the animals and deer also get stuck on it.’

ʔn.doh	ku.nɛ:	ku:ŋʔ	cuət	ma:	puəf	ku:ŋʔ	cuət	jə:t	ku:ŋʔ	cuət
this	pig	also	pierced	and	animal	also	pierce	deer	also	pierce
N	N	Adv ⁸⁵	V	Cnjc	N	Adv	V	N	Adv	V

Pacoh verbs can take two kinds of COR adjuncts: beneficiary adjuncts, marked by beneficiary dative prepositions and relator nouns, and extent adjuncts, marked by time and distance nouns.

RR-V47 [V] → [?([COR])]

S 305: Beneficiary and time COR adjuncts

(a) ‘I measured the rice for him.’

(b) ‘She’s studied English for one year.’

ki:	val	ʔa.fəʔ	ʔa.də:	də:	hə:k	ka:ŋ-ʔaŋ	mə:j	ku.mə:	jə:
Is	measure	rice	for-3s	3s	study	English	one	year	already
N	V	N	N	N	V	N	N	N	Adv
			+bnfc				+nmrl	+time	
			COR				COR		

No examples are found with more than one beneficiary or extent COR adjunct, though theoretically possible.

10.2 PRIMARY PACOH VERB SUBCATEGORIES

Pacoh verbs are divided into two main types by the feature [+xtns]. Extension verbs are then split by the features [±fact] and [±nmnl]. The four resulting categories

⁸⁴ See footnote 59.

⁸⁵ The word *ku:ŋʔ* ‘also’ is a Vietnamese adverb loan. Its preverbal position is due to the borrowing of this word and its distribution.

include non-extension verbs (e.g., *puh* ‘hit’, *ta:n* ‘weave’, *co:* ‘enter’), general extension verbs (e.g., *k^hɔj^ʔ* ‘have already’, *po:k* ‘go’, *ʔiŋ* ‘want’), the nominal extension verb (*ʔih* ‘be not’), and fact extension verbs (e.g., *ʔa:ji:* ‘remember’, *bu:j* ‘pleased’, *tij* ‘count’).

Figure 64 displays the primary verb subcategories of Pacoh.

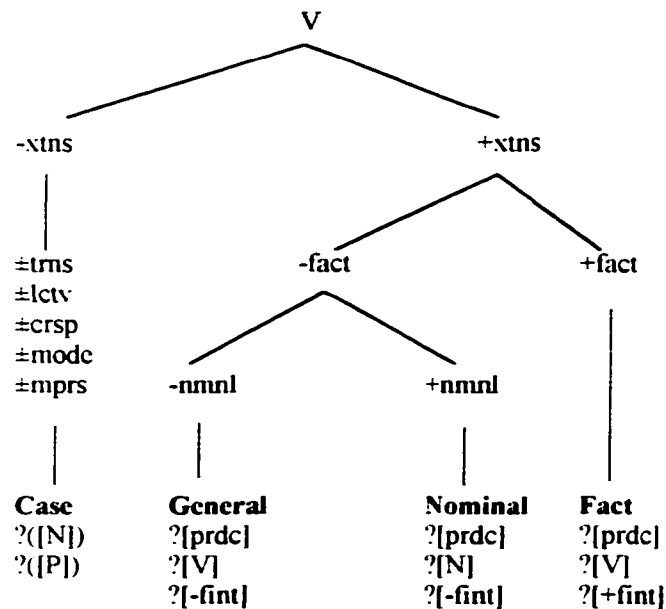


Figure 64: Primary subcategorization of Pacoh verbs

The complement types required by the assorted verb subclasses are shown below each category. All extension verbs require predicate complements. Fact extension verbs require finite verb complements. Nominal extension verbs expect noun predicates. Non-nominal non-fact extension verbs take non-finite verb complements. Non-extension verbs take non-predicate nouns or prepositions as dependents and assign them case relations, depending on the verb subtype. Non-fact non-nominal extension verbs are split subcategorized by the features $[\pm\text{trns}]$ and $[\pm\text{crsp}]$. Non-extension verbs are

subcategorized by the five primary case-related features, [\pm trns], [\pm lctv], [\pm crsp], [\pm mode], and [\pm mprs]. These features create six general case-assigning classes: intransitive, transitive, locative, correspondent, mode, and impersonal verbs. Each of these primary verb types has minimally distinctive distributional characteristics, as discussed in the next several subsections, while their various combinations are discussed in the major subsections on extension and non-extension verbs (sections 10.3 and 10.4).

Many of the primary redundancy rules (e.g., RR-1 [$+xtns$] \rightarrow [$?[prdc]$], stating that any extension words require predicate complements) discussed in the following subsections apply generally to all extension lexical classes rather than just one particular class. More specialized rules of linear ordering, however, are specific to Pacoh, though those properties may be shared by other languages.

10.2.1 Extension Verbs

Extension verbs take predicates, either verbs or nouns, as complements. This is a property shared by extension prepositions, relator nouns, and conjunctions, and so it can be made into a general redundancy rule.

RR-1 [$+xtns$] \rightarrow [$?[prdc]$]

In Pacoh, the predicate complements of extension verbs always follow them.

RR-V2 [V] \rightarrow $\left[\begin{array}{l} ?([prdc]) \\ @<?([prdc]) \end{array} \right]$

As shown in Figure 64, Pacoh extension verbs are subcategorized by the features [\pm fact] and [\pm nmnl].

SR-V1 [$+xtns$] \rightarrow [\pm fact]

SR-V2 [$-fact$] \rightarrow [\pm nmnl]

Fact verbs take finite predicate complements while non-fact verbs take non-finite predicate complements. A finite verb allows a noun in the NOMINATIVE case form while a non-finite verb does not.

RR-V6 [+fact] → [? [+fint]]

S 306: Fact and finite verbs

‘The teacher said that we must study hard.’

tʰəj	to:ŋ	hɛ:	fa:jʔ	hɔ:k	ʔm.min
teacher	say	1p	must	study	earnestly
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	N	V	V	Adv
Nom	+xtns	Nom	prdc		
PAT	+fact	PAT	+fint		
	4[+fint]				
	4[prdc]				

RR-V7 [-fact] → [?[-fint]]

S 307: Non-fact and non-finite verbs

‘She wants to go with him to have fun.’

ku.mq:r	ʔŋ.koh	ʔij	po:k	klɔ:n	ʔa.liŋ	la.ləw	ʔŋ.koh
woman	that	want	go	play	with	man	that
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex
N	N	V	V	V	P	N	N
Nom		+xtns	+xtns	-xtns			
PAT		-fact	-fact	-fint			
		+fint	-fint				
		4[-fint]	5[-fint]				

Pacoh non-fact extension verbs are subcategorized by the feature [\pm nmnl]. The nominal extension verb *ʔih* ‘be not’ takes nouns as predicate complements, as in S308, while non-nominal extension verbs take verbs.

SR-V3 [-fact] → [\pm nmnl]

RR-V44 [+xtns, +nmnl] → [?[N, prdc]
@<?([N,prdc])]

S 308: Nominal extension verb

'I'm not a Vietnamese person.'

ki:	?ih	ti.kuəj-juən
1s	be-not	Vietnamese
1ndex	2ndex	3ndex
N	V	N
	+xtns	prdc
	+nmnl	
	+ngtn	
	3[prdc]	
	3([N])	

Each of these primary extension verb subcategories is dealt with further in section 10.4.

10.2.2 Correspondent Verbs

Correspondent verbs require a COR complement in their case frames. In Pacoh, noun and preposition dependents of correspondent verbs may (a) refer to extent or be a point of comparison, (b) be beneficiaries of an action, (c) be the affected part of a PAT correspondent, (d) may be possessed, or (e) in some way come into existence. Verbs in this category include both stative and active/non-stative verbs and the various subcategories within each of those subcategories. Though these verbs take following complements, they differ from transitive verbs in that COR noun or preposition complements of correspondent verbs cannot be topicalized while PAT correspondents of transitive verbs can.

Correspondent verbs look for nouns in the ACCUSATIVE or DATIVE case forms to assign the COR case relation.

RR-V34	[+crsp]	→	[?[COR]]
RR-V9	[+crsp]	→	$\left[\begin{array}{l} ?([N, \text{Acc}]) \\ ?([N, \text{Dat}]) \end{array} \right]$

$$\text{RR-V46} \quad [+crsp] \quad \rightarrow \quad \left[\begin{array}{l} ?([N, +datv]) \\ @<?([N, +datv]) \end{array} \right]$$

Whether or not a dependent bearing the feature [+datv] is needed depends on the verb subcategory. Bare [+bare] correspondent verbs assign non-dative nouns the COR case, as expected of a correspondent verb. Non-bare [-bare] correspondent verbs assign the COR case relation only to dependents that have the feature [+datv].

$$\text{RR-V45} \quad [+crsp, -bare] \quad \rightarrow \quad \left[\begin{array}{l} ?[+datv] \\ ?[+datv, COR] \end{array} \right]$$

As already stated, correspondent verbs differ from transitive verbs in that the ACCUSATIVE dependents of transitive verbs can be topicalized, but those of correspondent verbs cannot. COR adjuncts must remain in the postverbal position.

S 309: Topicalization test for correspondent verbs

(a) 'His leg was hurt.'			(b) 'His leg was hurt.'			
do:	?a.?aj	ji:ŋ	*ji:ŋ	ma:	do:	?a.?aj
3s	hurt	leg	leg	(link)	3s	hurt
1ndex	2ndex	3ndex	1ndex	2ndex	3ndex	4ndex
N	V	N	N	P	N	V
Nom	-trns	Acc	them	+xtns	Nom	-trns
PAT	+crsp	COR	?COR		PAT	+crsp
	1{PAT}<2					3{PAT}<4
	2<3{COR}					*4<1{COR}

Above, S309a is acceptable and S309b is not, suggesting that 'leg' does not bear the PAT case relation as would be the case if the verb were transitive. Instead, the verb is intransitive, so the first noun bears the PAT case relation and 'leg' is a COR dependent.

Not only must those nouns remain in the post-verbal position, COR-bearing nouns are also not subject to 'pro-drop' phenomena and are overt in all cases. This differs from PAT-bearing nouns in the ACCUSATIVE case, which can be omitted in and recoverable from certain discourse situations.

S 310: Omitting an ACCUSATIVE PAT noun

(a) 'Did you buy a crossbow?'			(b) 'No. I didn't.'	
maj	pləj	tu.miəŋ	ləj ²	pləj
2s	buy	crossbow	no	buy
N	V	N	V	V

S 311: Keeping an ACCUSATIVE COR noun

(a) 'Did you hurt your leg?'				(b) 'Yes. I did.'			
maj	?a.?aj	ɰ:ŋ	ləj ²	vi:	ki:	?a.?aj	ɰ:ŋ
2s	sick	leg	huh	have	Is	hurt	leg
N	V	N	Sprt	V	N	V	N

Within certain contexts, such as responding to an affirmative-negative question,

ACCUSATIVE nouns bearing the PAT case relation can be omitted, whereas ACCUSATIVE nouns bearing the COR cannot. Responses to correspondent verbs may be the verb plus its COR complement, or the response *vi:* 'have' may be used.

10.2.3 Impersonal Verbs

Impersonal verbs cannot take overt nouns in the NOMINATIVE case form bearing either the PAT or AGT case relation. Formally, the numeric index for the missing noun in the NOMINATIVE case form is 0, as in S312. Impersonal verbs generally refer to conditions (e.g., *?a.tə?* 'hot' or *mat* 'cool'), existence (e.g., *vi:* 'there was...'), or occurrences (e.g., *?a.va:f* 'there occurred...'), with reference to some location or time of an occurrence, but without reference to an enacting force. Indrambarya (1994:section 3.4.3) stated that such verbs in Thai require non-referential 'subjects'.

$$\text{RR-V12} \quad [+mprs] \quad \rightarrow \quad \left[\begin{array}{c} ?[Nom] \\ [-rfm] \end{array} \right]$$

In S312, the impersonal existence verb *vi:* is used to express occurrences, whether in the past, present, or future.

S 312: Impersonal verb

‘There was one time that he got the flu.’

vi:	mɔːj	kən.ti?	dɔː	kʰəjʔ	ʔa.ʔaj-ʔa.fan
exist	one	time	3s	already	have flu
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
V	N	N	N	V	V
+mprs	Acc				
-trns	COR				
+crsp					
+exst					
0{Nom}					
0{Nom. -rfm}					

Pacoh has an impersonal negation extension verb, *ʔih*. In S313a, the impersonal verb cannot take an overt ‘subject’. In contrast in 313b, *ləjʔ* is used to negate normal predicate verbs and is preceded by an overt subject. The Pacoh impersonal negation extension verb *ʔih* can negate the truth value of a nominal predicate formed from an utterance.

S 313: Impersonal fact extension verb

(a) ‘It’s not that I’m going.’

ʔih	ki:-pɔ:k
no	Is go
1ndex	2ndex
V	N
+xtns	prdc
+mprs	
+ngtn	
+nmnl	
2{N}	

(b) ‘I’m not going.’

ki:	ləjʔ	pɔ:k
Is	no	go
1ndex	2ndex	3ndex
N	V	V
	+xtns	prdc
	+ngtn	
	-nmnl	
	3{V}	

Since *ʔih* negates nouns, the following clause, rather than being a finite clause is a derived predicative noun (see 10.1.5, Nouns Derived from Verbs and Utterances).

10.2.4 Intransitive Verbs

Intransitive verbs require a noun bearing the PAT case relation in the preverbal NOMINATIVE case form. Since the PAT case is required of all verbs (see section 3.4.1), this can be stated in the general rule RR-V13.

RR-V13 [V] → [?(PAT)]

Intransitive verbs find nouns in the NOMINATIVE case and assign them the PAT case relation.

RR-V14 [-tms] → [?([Nom])]

Intransitive verbs express a wide range of actions and states.

S 314: Stative and non-stative intransitive verbs

(a) 'My pants have a hole.'			(b) 'The four are all looking at the same time.'			
kuən	ki:	tər.lə:ŋ	pʉən	na?	ʃuə	?m.bə?
pants	1s	have hole	four	(unit)	search	together
1ndex	2ndex	3ndex	1ndex	2ndex	3ndex	4ndex
N	N	V	N	N	V	Adv
		-tms			-tms	
		+stiv			1[Nom]	
		1[Nom]			1[PAT]	
		1[PAT]				

Verbs in this category include both stative and active/non-stative verbs and the assorted subcategories within each of those subcategories.

In Pacoh, intransitive verbs never take a PAT in the post-verbal position (ACCUSATIVE, DATIVE, or LOCATIVE case forms), though they can have other case relations in that position and still be intransitive. Thus, there are nouns bearing the COR, MNS, and LOC nouns after intransitive verbs.

Non-locational nouns as LOC complements cannot be fronted, as shown by the unacceptability of S315d, while locational prepositions and their dependents can. The inability of the noun to be topicalized means the verb is not transitive.

Locational relator nouns can occur at the fronts of sentences when they do not have the feature [+trmn] and are typically adjuncts in this TOPIC case form position. There is not enough data to determine whether there are clear restrictions on the distribution of locational relator nouns. No examples in available data show that the LOC case relation can separate the regent verb from nouns in the NOMINATIVE case position, whether PAT or AGT complements.

10.2.6 Mode Verbs

Mode verbs take MNS complements to express the means by which an action is enacted.

RR-V22 [+mode] → [?[MNS]]

Generally, mode verbs take instrumental relator nouns as MNS complements (RR-V23) and take them in the postverbal position (RR-V24).

RR-V23 [+mode] → $\left[\begin{array}{c} ?([+nstr]) \\ ?[MNS] \end{array} \right]$

RR-V24 [+mode] → $\left[\begin{array}{c} ?([N, +nstr]) \\ @<?[N, +nstr] \end{array} \right]$

However, data contains what appear to be bare and non-bare⁸⁶ mode verbs (the latter of which has very few examples).

⁸⁶ The so-called non-bare mode verbs and their complements may actually be single lexical items formed through a type of word-formation strategy. More data is needed to resolve this matter.

SR-V5 [+mode] → [±bare]

Non-bare mode verbs, which constitute the vast majority of mode verbs in Pacoh, require instrumental relator nouns, having the feature [+nstr], as complements, whereas bare mode verbs do not, taking any noun to assign the MNS case relation.

RR-V27 [+mode, -bare] → $\left[\begin{array}{l} ?([+nstr]) \\ ?([MNS]) \end{array} \right]$

Most mode verbs in Pacoh are non-bare and thus take instrumental relator nouns as dependents, as in S316.

S 316: Mode verbs and MNS adjuncts

‘Saw the tree with a saw.’

kiə	ʔa.lə:ŋ	daŋ	ka.niə
saw	tree	with	saw
1ndex	2ndex	3ndex	4ndex
V	N	N	N
+trns	-unit	+rltr	-unit
+mode	Acc	+nstr	
-bare	PAT	Acc	
m[actr] ⁸⁷		MNS	
2[PAT]		4[N]	
3[+nstr]			
3[MNS]			

10.2.7 Non-Finite Verbs

The Lexicase definition of finiteness in ACCUSATIVE languages has to do with whether or not a noun in the NOMINATIVE case is possible. Finite verbs may take overt nouns in the NOMINATIVE case, while non-finite verbs cannot. All verbs in Pacoh can be non-finite, regardless of phonological word shape.

SR-V6 [V] → [±fint]

⁸⁷ The letter ‘m’ refers to a recoverable antecedent in a discourse situation.

Non-finite verbs are often the dependents of verbs or prepositions. The indices of required case-related contextual features are either linked to words outside their immediate domain by Chaining Rules (section 3.3.1) or marked ‘m’ when recoverable from the discourse context. There are, however, two phonological shapes that non-finite Pacoh verbs can share: the presyllables [ʔi... and [ʔu....

First, Pacoh [ʔu... verbs (seen in WFS-21, section 11.2.2.2) are always non-finite root verbs and have 3rd person singular reference, as in S317.

S 317: [ʔu... verb as a root verb

‘When my brother came, he brought new clothes.’

ʔa.miəŋ	ki:	toʔ	ʔu.do:ŋ	ʔa:w	təm.me:
brother	1s	arrive	3s-bring	clothes	new
1index	2index	3index	4index	5index	6index
N	N	V	V	N	V
-unit	+prmn	-trns	+root	-unit	+sttv
			-fint		
			+trns		
			m[actr]		
			m[AGT]		
			5[PAT]		

S. Watson (1964:88) noted the correspondence of these verbs to missing nominal ‘subjects’. Such verbs are not uncommon, appearing a few dozen times throughout available data.

Next, Pacoh has a class of verbs derived through a word-formation strategy involving the word-initial form [ʔi..., as discussed in section 11.2.2.2, which are always non-finite; they can never take overt noun dependents in the NOMINATIVE case. They may, however, have personal reference in the discourse context, as in S317a and b. In both sentences, these non-finite verbs serve as root verbs.

S 318: Non-finite verb dependents

(a) 'They only make crossbows.'			(b) 'After working, they went home.'				
ni:m	ʔi.taʔ	tu.miəŋ	jə:	ʔi.taʔ	cɔ:	toʔ	duŋ
only	to make	crossbow	after	to work	return	to	home
1ndex	2ndex	3ndex	1ndex	2ndex	3ndex	4ndex	5ndex
V	V	N	P	V	V	P	N
+xtns	-fint	Acc	+xtns	-fint	-fint		LOC
	-trns	PAT		-trns	+lctv		
	+crsp			m[actr]	m[actr]		
	m[actr]			m[PAT]	m[PAT]		
	m[AGT]						
	3[AGT]						

When a noun does appear before these verbs, those are theme nouns, which can then be used to recover missing arguments, as in S318.

S 319: [ʔi... verb with a theme noun

'As for rice, they eat it with chopsticks.'			
dɔj	ʔi.ca:	daŋ	duəh
rice, cooked	to eat	by means	chopsticks
N	V	N	N
-unit	+trns	+rltr	-unit
them	-fint	+nstr	
Tpc	m[actr]	Acc	
	l[them]	MNS	
	l[PAT]		

They are not, however, impersonal verbs, which do not have the [ʔi... word form. As with other 'pro-drop' languages, these verbs are able to recover not only case-related contextual features, but also features having to do with person and number, unlike impersonal verbs.

These non-finite verbs with the shared form [ʔi... have a few different functions as root and non-root verbs. As root verbs, they reduce the definiteness of the actant, having a meaning something like English 'one' or the indefinite 'you', as S320 shows.

When they are non-root verbs, these non-finite verbs, like other non-root non-finite verbs, serve as the dependents of verbs, prepositions, or nouns.

S 320: [ʔi... as dependent verb

‘If you don’t have rice, what does one eat?’

ləjʔ	bo:n	ʔa.fəʔ	koh	ʔa.məh	ʔi.ca:
no	have	rice	so	what	to eat
1index	2index	3index	4index	5index	6index
V	V	N	P	N	V
			+xtns	6({V})	-fint

As the dependents of other verbs, they may provide resultative meanings, as in S321a.

These non-finite verbs sometimes follow extension verbs, as in S321b. They can refer to the noun in the actor of the first verb, linked by the P2a rule.

S 321: Non-finite verbs as dependents of other verbs

(a) ‘That kid was swimming and sank.’

ʔa.kaj	ki:	pɔ:ŋ-da:ʔ	ʔi.trim	je:
child	that	swim	to sink	already
Index	2index	3index	4index	5index
N	N	V	V	Adv
-unit	+dmns	-trns	-trns	+prfc
actr		4({-fint})	-fint	
		1[actr]	1[actr]	
		1[PAT]	1[PAT]	

(b) ‘He/she/it/they doesn’t/don’t know.’

ləjʔ	ʔi.cɔ:m
no	to know
V	V
+xtns	-fint
+ngtn	m[actr]
m[actr]	

Additional evidence in favor of the non-finite hypothesis is seen in S249 (section 8.2.3.4), in which an [ʔi... verb is the complement of a non-fact extension verb. Non-fact extension verbs take only non-finite verbs.

When these verbs are the dependents of nouns, [ʔi... non-finite transitive verbs still assign nouns with the PAT case relation. This requirement is satisfied formally by a chaining rule, connecting the index of the regent noun with the skeletal requirement of the verb.

S 322: Non-finite verbs as dependents of nouns

(a) 'The road that one goes to the school is not long.'

kər.na	ʔi.po:k	toʔ	triəŋ	ləjʔ	jə:ŋ
road	to go	to	school	no	far
Index	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	P	N	V	V
	-fint				
	-trns				
	+lctv				
	m[PAT]				
	l[LOC]				

(b) 'Do you have a book to study?'

ʔa.ʔɛm	vi:	ʃa:c	ʔi.hə:k	ləjʔ
2s	have	book	to study	noʔ
Index	2ndex	3ndex	4ndex	5ndex
N	V	N	V	Sprt
			-fint	
			m[AGT]	
			3[PAT]	

These non-finite verbs can refer to the results of actions.

S 323: [ʔi... with resultative meaning

'Kanli husked enough rice to cook a meal.'

kan-li:	klə:h	kʰam	ʔa.ʃəʔ	ʔi.cin	də:j
(name)	husked	enough	rice, uncooked	to cook	rice, cooked
Index	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	Adv	N	V	N
	+xtns			-trns	Acc
	+trns			+crsp	COR
				-fint	
				m[actr]	
				m[PAT]	
				6([N])	
				6[Acc]	
				6[COR]	

They may also be used in instances of sentences with theme nouns, where the theme is linked to expected complements, as in S324.

S 324: Non-finite verb with initial [ʔi... substring

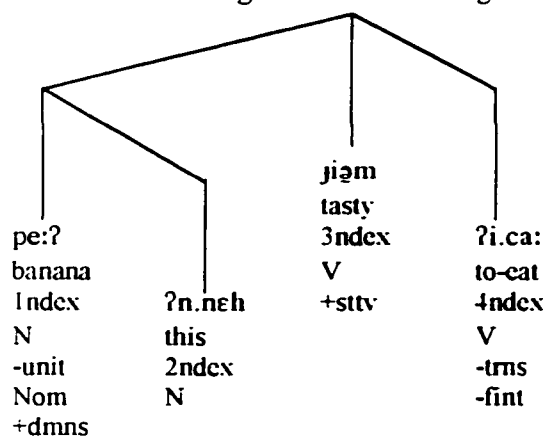
‘In the rainy season, if there’s a lot of water, one can’t cross the river.’

ʔən.nɔ:	priəw	da:ʔ	pi:t	ʃɔ:ʔ	ləjʔ	hɔ:j	ʔi.ja:ŋ
season	flood	water	much	river	not	able	to cross
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex	8ndex
N	N	N	V	N	V	V	V
			+sttv	them	+ngtn	+sttv	+trns
				Tpc	+xtns	+xtns	m[PAT]
							5[them]
							5[PAT]

These non-finite verbs can be the complements of a class of extension non-fact stative verbs (section 10.4.4.5.4). The [ʔi... verbs are linked to the NOMINATIVE noun in the sentence by the P2a rule, as in S325. These non-finite verbs are generally non-root verbs, occurring only as the dependents of nouns or verbs.

S 325: Non-root non-finite verb

‘This banana tastes good/This banana is good to eat.’



10.2.8 Transitive Verbs

Transitive verbs assign nouns in the **NOMINATIVE** case form the **AGT** case relation.

RR-V33 [+trns] → [?[AGT]]

As with all verbs, transitive verbs also require a **PAT** complement, which is either in the postverbal **ACCUSATIVE** position or satisfied by recovering the index from the topicalized sentence-initial **TOPIC** case form position.

RR-V4 [V] → [?[PAT]]

So, the **AGT**, corresponding to the **NOMINATIVE** case form, appears in the preverbal position, while the **PAT**, associated with the **ACCUSATIVE** case form, is postverbal. This ability to recover the **PAT** from a theme noun through chaining rules is a defining characteristic of transitive verbs, which differentiates them from correspondent verbs, which cannot recover their complements this way. S326 and S327 are examples of both possibilities.

S 326: PAT in ACCUSATIVE position

'He doesn't know the way that they live.'

?a.ca:j-?ŋ.koh	ləj ²	cɔ:m	?n.tu:ʔ	ŋa:j	taʔ-ca:
he	no	know	way	3p	make a living
Index	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	V	N	N	V
actr	1[actr]	1[actr]	Acc		
Nom	1[PAT]	1[AGT]	PAT		
PAT		4[PAT]			

In S326, the **AGT** is recovered by the verb 'know' by the P2a rule, the actor then being interpreted as an **AGT**.

S 327: PAT recovered from theme position

'As for the way that they live, he doesn't know.'

?n.tu:ʔ	ŋa:j	taʔ-ca:	ma:	ʔa.ca.j-ʔŋ.koh	ləj ²	cə:m
way	they	make a living	so	he	not	know
1index	2index	3index	4index	5index	6index	7index
N	N	V	P	N	V	V
them			+xtns	AGT		+trns
			+clsl			5[AGT]
						1[PAT]

In S327, the index of the theme noun satisfies the required index for the PAT of the verb.

10.3 NON-EXTENSION VERBS

This section deals with Pacoh non-extension verb subcategories. Non-extension verbs do not take predicates as dependents but rather take complement nouns and prepositions. Non-extension verbs are subcategorized by the case-related features [\pm trns], [\pm lctv], [\pm crsp], [\pm mode], and [\pm mprs]. Based on available data, there are ten primary categories of these non-extension verbs in Pacoh. Figures 65 and 66 show the subcategorization for intransitive and transitive verbs, the former having six case-related subcategories and the latter having four. Beneath each category are listed the minimally distinctive features for each category used in this grammar.

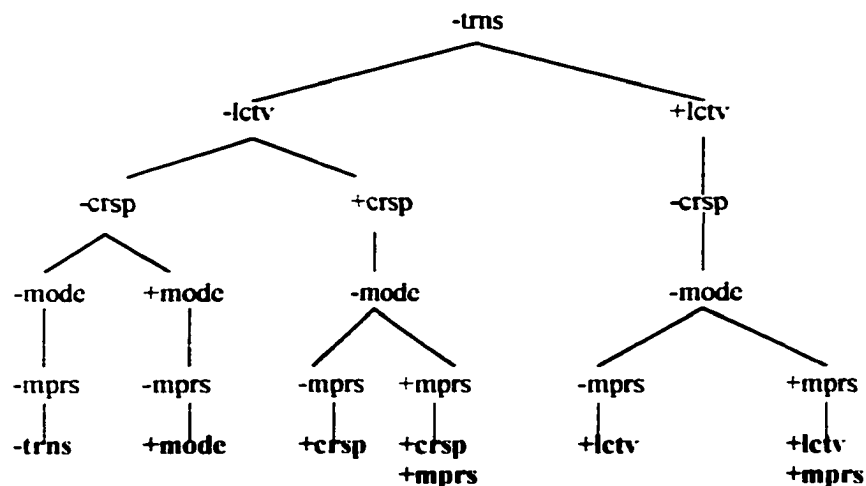


Figure 65: Subcategorization of Pacoh intransitive verbs

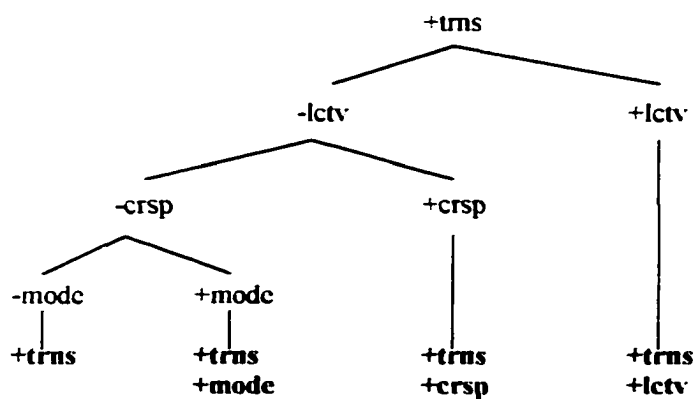


Figure 66: Subcategorization of Pacoh transitive verbs

The same information is shown in the feature-based Table 63. The table includes the terms used to refer to each category in subsequent sections. The term ‘simple’ refers to verbs that have a single ‘plus’ for a verb subcategory (e.g., ‘simple correspondent’ is [-trns], [-lctn], [+crsp], [-mode]) or to intransitive verbs which are entirely unmarked for these attributes. The feature [\pm mprs] is only mentioned where relevant since it excludes the possibility of a case-related complement.

No.	trns	lctv	crsp	mode	mprs	Category
A.	-	-	-	-	-	Simple Intransitive Verbs ([-trns])
B.	-	-	-	+	-	Simple Mode Verbs ([+mode])
C.	-	-	+	-	-	Simple Correspondent Verbs ([+crsp])
D.	-	-	+	-	+	Impersonal Correspondent Verbs ([+crsp. +mprs])
E.	-	+	-	-	-	Simple Locative verbs ([+lctv])
F.	-	+	-	-	+	Impersonal Locative verbs ([+mprs. +lctv])
G.	+	-	-	-	-	Simple Transitive Verbs (+trns)
H.	+	-	-	+	-	Mode Transitive Verbs ([+mode]. [+trns])
I.	+	+	-	-	-	Locative Transitive Verbs ([+lctv]. [+trns])
J.	+	-	+	-	-	Correspondent Transitive Verbs ([+crsp]. [+trns])

Table 63: Feature-based subcategorization of Pacoh verbs

The primary subcategories and their various secondary subcategories are discussed in subsequent sections.

10.3.1 Simple Intransitive Verbs

Pacoh simple intransitive verbs are marked ‘minus’ for all primary case-related subcategorizing features (i.e., [-trns], [-lctn], [-crsp], and [-mode]). These are the least marked verbs, having the fewest case requirements. As with all predicates,⁸⁸ simple intransitive verbs require a PAT complement, though that is the only requirement they have.

RR-V25 [V] → [?(PAT)]

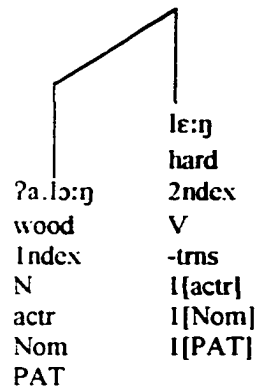
PAT complements of intransitive verbs always occur in the NOMINATIVE position.

Theme nouns, overtly marked through the use of comment extension prepositions or phonetically by a pause in speech, can correspond to the required PAT of a verb.

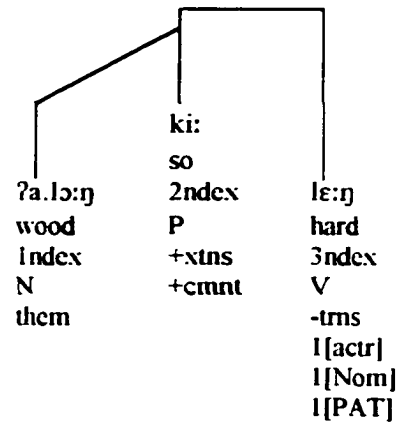
⁸⁸ All predicates require at least a PAT complement to be in their case frames (Starosta 1998:6).

S 328: Intransitive verbs with regular and topicalized PAT

(a) 'The wood is hard.'



(b) 'As for the wood, it's hard.'



Pacoh has four primary subcategories of simple intransitive verbs following the features $[\pm rcpr]$ and $[\pm sttv]$. The resulting subcategories consist of general, stative, and reciprocal intransitive verbs.

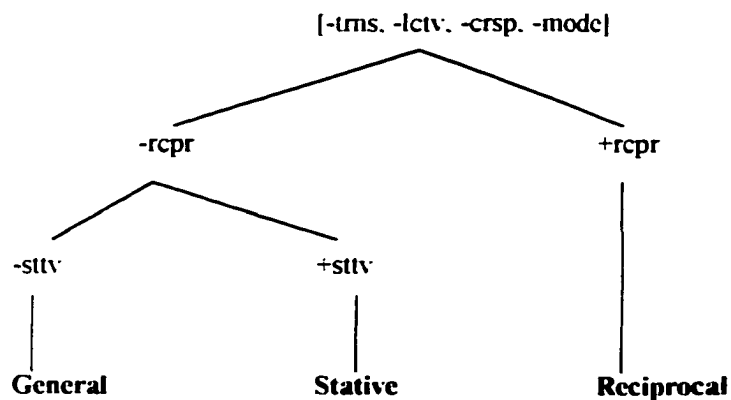


Figure 67: Subcategorization of Pacoh simple intransitive verbs

Pacoh reciprocal verbs, which have the word-initial constant $[t\alpha r\dots]$, require either a noun marked $[+plrl]$ (such as plural pronouns) or a coordinate 'subject'. Stative verbs cannot serve as the dependent of the progressive extension verb *ʔat*. All other intransitive verbs

fall into the category ‘general intransitive’. Each of these subclasses has additional subgroups, as discussed in subsections below.

10.3.1.1 General Simple Intransitive Verbs

Pacoh general simple intransitive verbs are made up of a large number of lexical entries that encompass a wide range of semantic fields. These verbs are divided by the feature [\pm rvrs] (reverse).

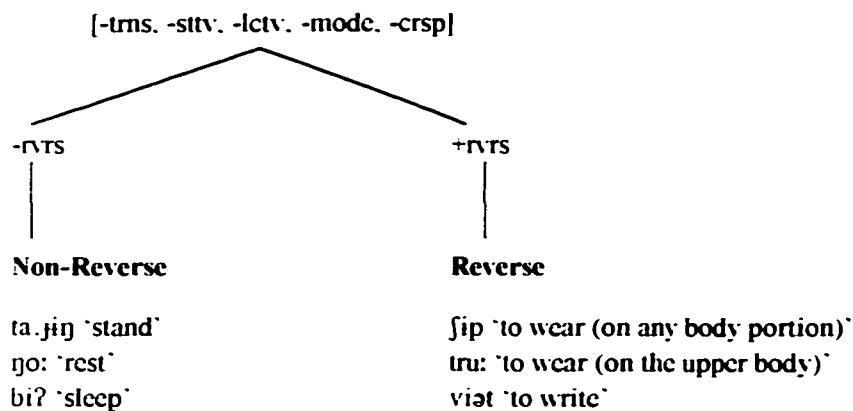


Figure 68: Pacoh general simple intransitive verbs

Reverse verbs require adverb complements, as stated in RR-V39, while non-reverse verbs take adverb adjuncts.

RR-V39 [$+$ rvrs] \rightarrow [?($[$ Adv $]$)]

Reverse verbs, which generally have homophonous transitive verb correlates, semantically convey that the action affects the NOMINATIVE PAT and that the PAT is not the performer of the action (cf. English ‘This car drives well’). Non-reverse verbs, which do not have corresponding transitive words, indicate that the action is enacted by the PAT. A secondary result of this difference in the relation between the verb and the noun

is that reverse verbs generally take inanimate nouns as PAT complements and non-reverse verbs generally take animate PAT complements.

10.3.1.1.1 General Simple Intransitive Verbs

The general intransitive verb (non-reverse verbs) subcategory is the least marked category and consists of the largest number of intransitive verbs. These verbs often take animate PAT complements in the data source, though there is no overarching selectional restriction.

Gloss	Form
call out	pə:h
dig	piʔ
rest	ŋo:
run (away)	luh
sleep	biʔ
speak	pa.pi:
stand	ta.ɸŋ
tell stories	ʔn.ʃuər

Table 64: Descriptive degree stative verbs

These verbs can be the dependents of prime extension verbs, as in S329a and c. They may take adverb adjuncts, such as result and general manner adverbs, as in S329b.

S 329: Simple intransitive verbs

(a) 'Nam isn't resting.'			(b) 'Weave (it) thick.'		(c) 'Don't speak loudly.'			
na:m	ləjʔ	ŋo:	ta:ŋ	ʔa.kjər	ʔa.kəp	to:ŋ	ŋən	li:
(name)	no	rest	weave	thickness	don't	speak	loud	very
Index	2ndex	3ndex	Index	2ndex	Index	2ndex	3ndex	4ndex
N	V	V	V	Adv	V	V	Adv	Adv
+anmt	-trns	-trns	-trns	+rslt	-trns	-trns	+mnnr	+ntsf
Nom	+xtns	-rvrs	-rvrs		+xtns	-rvrs	+degr	
PAT	1[PAT]		2([Adv])		+ntgn	3([Adv])		
			m[actr]		+mprt			
			m[PAT]		m[actr]			
					m[PAT]			

10.3.1.1.2 Reverse Simple Intransitive Verbs

Reverse intransitive verbs generally have semantically corresponding homophonous transitive verbs. The NOMINATIVE PAT of reverse intransitive verbs is the Accusative PAT of the homophonous forms. Reverse simple intransitive verbs require manner adverb complements (marked [+mnnr]), as stated in RR-V39.

RR-V39 [+rvrs] → [?[Adv, +mnnr]]

They generally take inanimate PAT nouns, though more data is required to posit this as a definite grammatical restriction.

Reverse intransitive verbs generally have homophonous transitive counterparts.

In S330, the verb has a general manner adverb.

S 330: Affected intransitive verb

‘That shirt fits (you) well.’

ʔa:w	ʔŋ.koh	ʃi:p	piəjʔ
shirt	that	wear	suitable
1index	2index	3index	4index
N	N	V	Adv
-anmt		-trms	+mnnr
Nom		+rvrs	
PAT		1({PAT.-anmt})	
		3<4{Adv}	

As in S330, these verbs can take general adverbs, though some can take resultative adverbs as well.

Adverbial intransitive verbs can take resultative adverbs, which share the word-initial substring [ʔa..., as in S331.

S 331: Adverbial intransitive verb

‘This banana tastes good.’

pə:ʔ	ʔn.nəh	ca:	ʔa.ɰəm
banana	this	eat	tasty
N	N	V	Adv
Nom		-tms	+rslt
PAT		+rvrs	
-anmt			

10.3.1.2 Reciprocal Simple Intransitive Verbs

Reciprocal simple intransitive verbs ([-tms], [+rcpr]) have either the non-causative⁸⁹ word substring [tər... (or one of its phonological variants, see section 10.1.1) or the causative reciprocal form [pər....

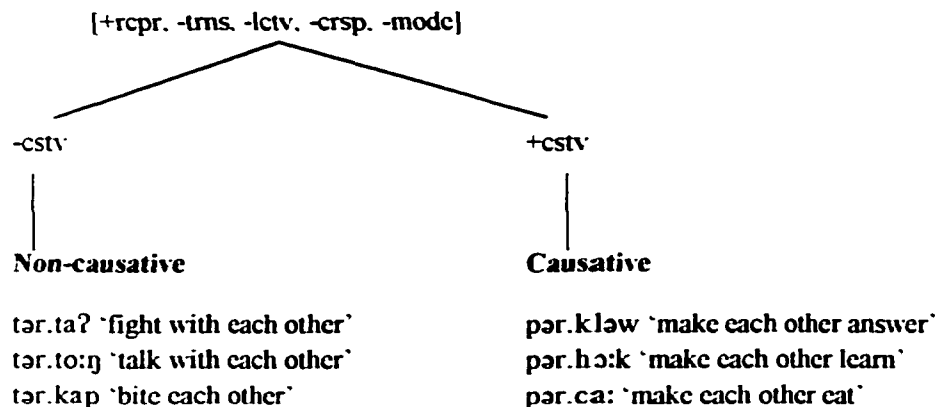


Figure 69: Reciprocal simple intransitive verbs

Both of these subclasses are related to non-reciprocal verbs through two different word-formation strategies discussed in section 11.2.2.4.

⁸⁹ For most of this grammar, semantic features are not included in subcategorizations. For primary lexical subcategories, this is certainly true. However, at the more detailed levels of lexical subcategorization and in determining syntactic distribution, selectional restrictions become more important. The feature [+cstv] is a semantic feature, but one that is also relevant in other verb subclasses and has significance in distribution and word-formation, particularly for causative extension verbs. Also, causative verbs are a common topic of study in research on Mon-Khmer languages, so including these in some additional parts of the grammar seems appropriate.

Having the feature [+rcpr], both verb types require either nouns that are inherently plural or coordinative nouns in the NOMINATIVE case that are connected by conjunctions or comitative prepositions.

RR-V26 [+rcpr, -trns] → $\left[\begin{array}{l} ?([\text{Nom}]) \\ ?[\text{Nom}, +\text{plrl}] \end{array} \right]$

In S332a, the pronoun is inherently plural. In S332b, the conjunction and its two complements are in the NOMINATIVE case form.

S 332: Reciprocal verbs

(a) 'They're fighting with each other.' (b) 'She and he are helping each other.'

ʔa.pɛ:	ʔat	tər.taʔ	ʔa.ma:	ʔa.liŋ	ʔa.ca:j	tər.rɔ:m-rɔ:m
3p	process	fight-recip.	she	and	he	fight-recip.
1ndex	2ndex	3ndex	1ndex	2ndex	3ndex	4ndex
N	V	V	N	Cnjc	N	V
+prmn		-trns	actr		actr	-trns
+plrl		+rcpr				+rcpr

There is a small subclass of causative reciprocal intransitive verbs. They share the word-initial substring [pər.... Like non-causative reciprocal verbs, they have the contextual requirement [?(+plrl)], but also have the semantic feature [+cstv]. The semantic effect is that the nouns cause each other to perform some action.

S 333: Causative reciprocal verb

'We got each other to get together in the middle of the school.'

hɛ:	pər.cuŋ	toʔ	ʔŋ.ki:m	triŋ
1p	make-gather-recip.	at	middle	school
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	P	N	N
+prmn	-trns	+lctv	+rltr	-unit
+plrl	+rcpr	Lcv	+lctn	Prv
Nom	+cstv	LOC		COR
PAT	1{+plrl}			
	1[PAT]			

10.3.1.3 Stative Simple Intransitive Verbs

In Pacoh, stative intransitive verbs are those verbs that cannot be the dependents of the continuous extension verb *ʔat*. Stative intransitive verbs are subcategorized by the features $[\pm\text{degr}]$, $[\pm\text{dscr}]$, and $[\pm\text{mltd}]$, resulting in the four subcategories: non-degree and non-descriptive, descriptive, and multitude descriptive degree stative intransitive verbs.

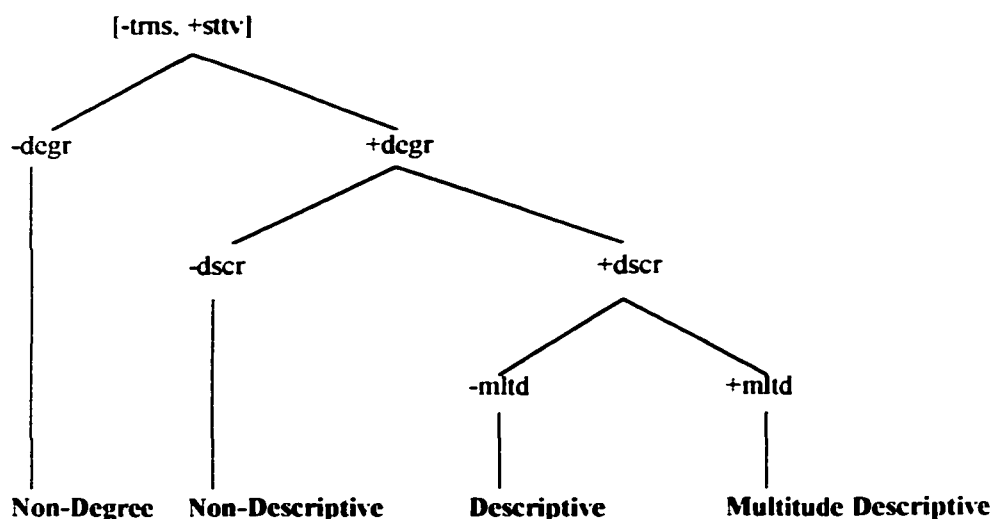


Figure 70: Subcategorization of stative intransitive verbs

Non-degree stative verbs, which semantically are states or conditions, cannot take intensifying adverbs, while degree stative verbs can. The feature $[\pm\text{dscr}]$ is chosen primarily for semantic reasons; $[\text{+dscr}]$ verbs usually describe inherent, unintentional attributes. However, more importantly for a syntactic subcategorization, descriptive degree stative verbs usually have relative stative correspondent counterparts (section 10.3.4.4.3), while non-descriptive ones do not. Multitude verbs interpret their PAT complements as plural. All of these subclasses are discussed below.

The general property of all [+sttv] verbs is that they cannot be the dependents of the progressive extension verb *?at*, while [-sttv] verbs can.

S 334: Non-stative versus stative verbs

(a) 'He's eating rice.'

dɔ:	?at	ca:	dɔ:j
3s	(progr.)	eat	rice
N	V	V	N
	-prfc	-trns	
		-sttv	

(b) '?He's being very tired.'

*dɔ:	?at	?a.lɛ?	li:
3s	(progr.)	tired	very
N	V	V	Adv
	-trns		
	+sttv		

The feature [\pm sttv] is split by the feature [\pm degr]. [+degr] verbs can take as a dependent the degree adverb *li:* 'very'.

S 335: Degree stative verbs

(a) 'Nam wants very much to play ball.'

na:m	li:	?ij	tɔr.cɔ:j	bɔ:ŋ
(name)	really	want	play	ball
N	V	V	V	N
	+ntsf	+sttv		
		+degr		

(b) 'The lessons are very difficult.'

ba:j	diəj ²	li:
lesson	difficult	very
N	V	Adv
	+sttv	+ntsf
		+degr

Non-degree stative verbs cannot take intensifying adverbs. Words found to belong in this category so far include *ku.cɛt* 'die', and *cɛh* 'be born'.

S 336: General non-descriptive stative verb

(a) 'After you die, you become a ghost.'

maj	ku.cɛt	va:f	pi.nah
2s	die	become	ghost
N	V	V	N
Nom	-trns	-trns	Acc
PAT	+sttv	+crsp	COR
	-degr		

(b) 'Where were you born.'

tu.mɔ:	maj	cɛh
where	3s	born
N	N	V
+lctn	Nom	-trns
	PAT	+sttv
		-degr

Non-descriptive degree stative verbs, which are few in number, are verbs with cognitive semantic scope, including *?ij* 'to like', and *?a.?ij* 'to hate'.

S 337: Cognitive degree stative verb

(b) 'I like it a lot.'

ki:	ʔij	li:
Is	like/want	very
N	V	Adv
Nom	-tms	+ntsf
PAT	+degr	

Descriptive degree stative verbs form a semantic class of words that provide descriptions of the states of their PAT complements. This class consists of a large number of entries, some of which are shown in Table 65.

Gloss	Form
cowardly	kəl.laʔ
in a hurry	həp
much (in quantity)	hi:k
pleased	bu:j
small	kət
stuffed up	du:t
thin (of cloth)	ku.ban
thin (of people)	ʔɔ:jʔ
tired	ʔa.lɛʔ

Table 65: Descriptive degree stative verbs**S 338: Descriptive degree stative verbs**

(a) 'This shirt's pretty thin'

ʔa:w	ʔn.nɛh	ku.ban	li:
shirt	this	thin	very
N	N	V	Adv
		+sttv	+ntsf
		+degr	

(b) 'As for that tree, it's small.'

ʔa.lɔ:ŋ	ʔŋ.koh	ki:	kət
tree	that	so	small
N	N	P	V
			+sttv
			+degr

Many of these forms have homophonous stative correspondent correlates that take part in comparative constructions through the use of comparative prepositions.

Degree descriptive stative verbs also include a class of forms that share word shape and distributional requirements. Multitude [+mltd] general stative verbs are the result of a word-formation strategy (section 11.2.2.3) that involves a [Ca... presyllable, in

which the initial consonant is the same as the derivationally-related monosyllabic base. The feature [+mltd] requires inanimate ‘subjects’ and interprets their Nom-PAT noun dependents as [+plrl].

$$\text{RR-V30} \quad [V] \quad \rightarrow \quad \left[\begin{array}{l} ?([\text{Nom}]) \\ ?[+\text{plrl}] \end{array} \right]$$

In S339a, the verb refers to a singular PAT, while in S339b, the multitude stative verb assigns the same noun the feature [+plrl].

S 339: Multitude general stative verb

(a) ‘That tree is large.’

ʔa.lɔ:ŋ	ki:	pit
tree	that	big
N	N	V
-unit	+dmns	+sttv
-anmt		-mltd
Nom		1[Nom]
PAT		1[PAT]

(b) ‘Those trees are large.’

ʔa.lɔ:ŋ	ki:	pa.pit
tree	that	big
N	N	V
-unit	+dmns	+sttv
-anmt		+mltd
Nom		1[Nom]
PAT		1[PAT]
+plrl		1[+plrl]

10.3.2 Impersonal Correspondent Verbs

Impersonal intransitive correspondent verbs require a COR complement. In available data, the few verbs in this category are all stative, not being able to cooccur with the continuative extension verb *ʔat* ‘in the process of’. This indicates that [+sttv] is a redundant feature, as shown in RR-V26.

$$\text{RR-V26} \quad [+mprs, +crsp] \quad \rightarrow \quad [+sttv]$$

They all have derivationally related non-impersonal forms. Verbs in this category include *vi:* ‘there is’, *k^ham* ‘there is enough of’, and *ʔe:* ‘there is much/are many’.

There are two kinds of adjuncts that cooccur in the sentence-initial position and give some indication of spatial orientation or general point of reference. Impersonal correspondent verbs often occur with LOC adjuncts.

S 340: Impersonal verb with LOC adjunct

‘There’s enough rice to eat here.’

daŋ	nɛh	k ^h am	ʔa.ʃəʔ	ʔi.ca:
place	here	enough	rice	to-eat
1 nd ex	2 nd ex	3 rd ex	4 th ex	5 th ex
N	N	V	N	V
+lctn		-trns	Acc	
LOC		+crsp	COR	
		+mprs		
		0{PAT}		
		4{Acc}		
		4{COR}		
		1(+lctn)<3		

These verbs also take [them] nouns. In S341, the theme gives the general point of reference, and the impersonal verb provides the comment regarding the proposed set.

S 341: Impersonal verb with [them]

‘Of these cattle, there are eight cows.’

ŋɛʔ	kəɾ.rəʔ	ʔn.nɛh	vi:	ti.kə:l	lam	kəɾ.rəʔ	ʔŋ.kan
all	cattle	this	exist	eight	(unit)	cattle	female
N	N	N	V	N	N	N	N
+scop	-unit	+dmns	+crsp	+nmrl	+unit	-unit	-unit
[them]			-trns				
			+exst				

Impersonal correspondent verbs with time nouns as complements may indicate past occurrence, as in S342.

S 342: Impersonal verb

‘There was one time that he got the flu.’

vi:	mɔːj	kən.tiʔ	dɔː	kʰɔːjʔ	ʔa.ʔaj -ʔa.fan
exist	one	time	3s	already	have flu
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
V	N	N	N	V	V
+mprs	Acc				
-trns	PAT				
+crsp					
+cxst					
0{Nom}					
0{Nom, -rfm}					
2{Acc}					
2{PAT}					

10.3.3 Simple Locative Verbs

Simple locative verbs are intransitive and have the single case feature [+lctv], indicating that they require a LOC complement. Some words in this category include *luh* ‘run’, *fər* ‘rise’, *po:k* ‘go’, *ŋoh* ‘exit’, and *mɔ:t* ‘enter’. Simple locative verbs are divided by the features [\pm move] and [\pm mprs], creating three subcategories: movement, non-movement, and impersonal non-movement locative verbs.

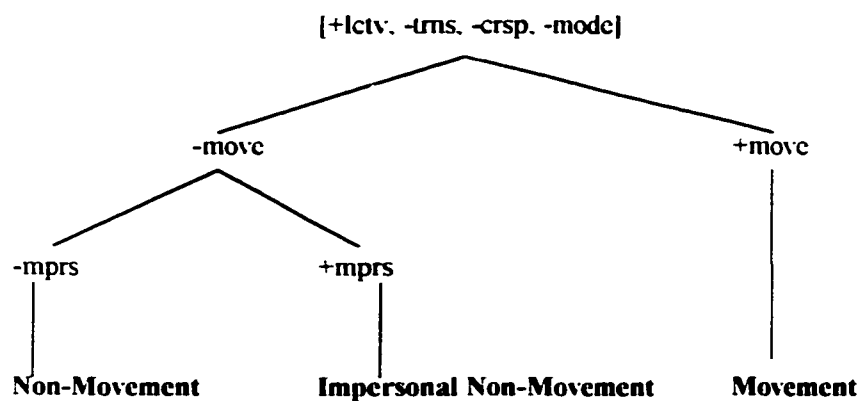


Figure 71: Subcategorization of Pacoh simple locative verbs

Movement locative verbs require [-stay] locational prepositions, while non-movement locative verbs require [+stay] locational prepositions. Impersonal locative verbs are redundantly [-move] and cannot take overt nouns in the NOMINATIVE case form.

10.3.3.1 Impersonal Locative Verbs

Impersonal locative verbs take LOC complements, either locational relator nouns or locational prepositions. A relator noun can take a non-locational noun dependent, while a preposition takes a non-locational noun complement. Impersonal locative verbs describe some kind of condition in a location and are redundantly stative.

RR-V27 [+lctv, +mprs] → [+sttv]

In my data sources, locational noun and preposition dependents of impersonal locative verbs most often appear in the preverbal position. S343a and b demonstrate the difference between a personal stative verb and an impersonal one. S343a as a regular noun which cannot be a LOC adjunct. Instead, it is the [actr]. S343b contains a locational relator noun adjunct. The non-referential actor is indicated by the number 0.

S 343: Impersonal locative verbs

(a) 'The house is very hot.'			(b) 'Inside the house, it's very hot.'			
duŋ	?a.tə?	li:	kəl.luŋ	duŋ	?a.tə?	li:
house	hot	very	inside	house	hot	very
1ndex	2ndex	3ndex	1ndex	2ndex	3ndex	4ndex
N	V	Adv	N	N	V	Adv
-lctn	-trns	+degr	+lctn	-lctn	-trns	+degr
-unit	-lctv	+degr	Lcv	-unit	+lctv	
Nom	+sttv		LOC		+sttv	
PAT	+degr				+degr	
	1[Nom]				+mprs	
	1[PAT]				0[actr]	
					1[+lctn]	
					1([LOC])	

10.3.3.2 Movement Locative Verbs

Movement locative verbs assign their complement nouns the LOC case relation or require locational prepositions to do that. These verbs share the semantic feature [+move]. Based on the feature [\pm bare], there are two types of movement locative verbs: bare and non-bare.

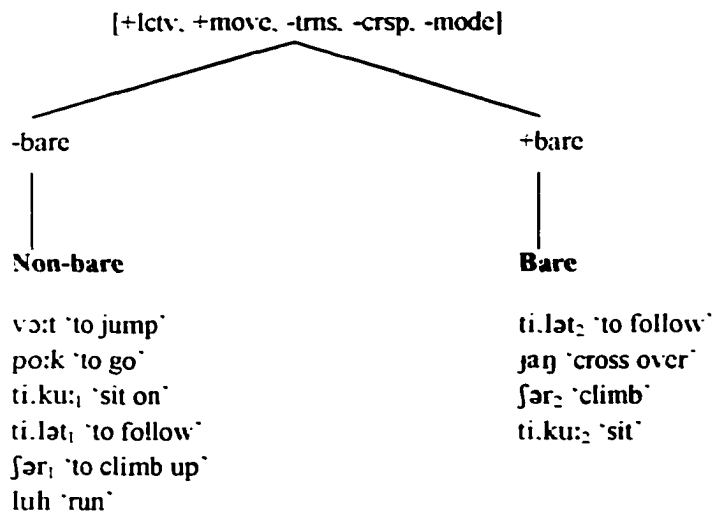


Figure 72: Subcategorization of movement locative verbs

The [\pm bare] distinction has also been noted in Thai by Indrambarya (1995: chapter 3, category E2), though her distinction was whether or not the verbs took prepositions. In this grammar, bare locative verbs are considered to be verbs that take non-locational nouns as LOC complements while non-bare locative verbs require locational prepositions or relator nouns (the latter not included in Indrambarya's definition).

RR-V28 [-bare] → [?(+lctn)]

RR-V29 [+bare] → [?(-lctn)]

Bare locative verbs are marked by the feature [+trmn] and do not require an additional word to indicate the endpoint of the movement. Non-bare locative verbs are [-trmn] and are only able to assign the LOC case to [+lctn] words. Consider S344a to d.

S 344: Comparing bare and non-bare locative verbs

(a) 'He went up to the house.'				(b) 'He went up the house.'		
dɔ:	ʃər ₁	to?	duŋ	dɔ:	ʃər ₂	duŋ
3s	went up	to	house	3s	went up	house
Index	2ndex	3ndex	4ndex	Index	2ndex	3ndex
N	V	P	N	N	V	N
	+lctv	+lctn	-lctn		+lctv	-lctn
	+move	-stay			+move	
	-bare	+trmn			+bare	
	-trmn				+trmn	
	3[+lctn]				3[N]	
(c) 'He went to the house.'				(d) 'He went to the house.'		
dɔ:	pɔ:k	to?	duŋ	*dɔ:	pɔ:k	duŋ
3s	went up	to	house	3s	went up	house
Index	2ndex	3ndex	4ndex	Index	2ndex	3ndex
N	V	P	N	N	V	N
	+lctv	+lctn	-lctn		+lctv	-lctn
	+move	-stay			-bare	
	-trmn	+trmn			-trmn	
	3[+lctn]				?[+lctn]	

While both (a) and (b) are acceptable, (d) is not. This minimally distinctive environment demonstrates that the verbs in (a) and (b) are distinct though homophonous words.

Another difference between bare and non-bare locative verbs is that while non-bare LOC prepositional phrases may precede the verb and 'subject', the noun complements of bare locative verbs may not and only follow their regents, as in S345.

2.45: *Interrogative pronouns, non-accusative verbs*

a) <i>Interrogative pronouns</i>				b) <i>Interrogative pronouns</i>		
1	2	3	4	1	2	3
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo

a) *Interrogative pronouns, non-accusative verbs* are used to ask questions about a person or thing.

b) *Interrogative pronouns, non-accusative verbs* are used to ask questions about a person or thing.

Interrogative pronouns, non-accusative verbs are used to ask questions about a person or thing.

2.46: *Accusative verbs versus personal pronouns*

a) <i>Accusative verbs</i>				b) <i>Personal pronouns</i>		
1	2	3	4	1	2	3
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo
quis	quid	quomodo	quomodo	quis	quid	quomodo

The *accusative verbs* and *personal pronouns* are used to ask questions about a person or thing.

2.47: *Non-accusative verbs versus personal pronouns*

Non-accusative verbs and *personal pronouns* are used to ask questions about a person or thing.

2.48: *Interrogative pronouns, non-accusative verbs*

Words found to belong to this category so far include *ʔat* ‘to be at’, *tu.məŋ* ‘to reside’, and *ti.ku:* ‘sit’.

S 347: Non-movement locative verbs

(a) ‘He’s over there.’

do:	ʔat	daŋ	ʔŋ.koh
3s	be at	place	there
1ndex	2ndex	3ndex	4ndex
N	V	N	N
	-trns	+rltr	
	+lctv	+lctn	
	-move	Acc	
	3[+lctn]	LOC	

(b) ‘I live in A-Luóí.’

ki:	tu.məŋ	toʔ	ʔa.liəj
1s	live	at	A-Luóí
1ndex	2ndex	3ndex	4ndex
N	V	P	N
1s	-trns	+lctn	+prpr
	+lctv	+stay	
	-move	Lcv	
	3[+lctn]	LOC	

They typically take the non-terminus preposition *toʔ* ‘at’ or the locational relator noun *daŋ* ‘the place of’.

10.3.4 Simple Correspondent Verbs

Intransitive correspondent verbs require PAT complements in the preverbal NOMINATIVE case form and COR complements in the postverbal position, either in the ACCUSATIVE or the DATIVE case forms. A defining quality of correspondent verbs is their requiring the COR complements to occur only in the postverbal position. Nouns that receive the COR case relation are not linked through chaining rules to theme nouns in the clause-initial position.

Semantically, COR complements tend not to be manipulated by actions but rather are the results of actions, as in S348a, or the focus of conditions, as in S348b. The COR

⁹⁰ Similar derivational patterns appear across the Pan-Asian region. See Clark 1989 for a good summary of this phenomenon in several East and Southeast Asian languages.

complements are not considered incorporated elements in VO-like compounds since the nouns can take additional modifiers (such as *təm.məj* ‘new’).

S 348: Simple correspondent verbs: result and focus

(a) ‘I’m weaving a basket.’

ki:	ta:n	?a.co:jʔ
1s	weave	basket
Index	2ndex	3ndex
N	V	N
Nom	+crsp	Acc
PAT	-trns	COR
	1[PAT]	
	3[COR]	

(b) ‘I’m very sick to my stomach.’

ki:	?a.?aj	pəl.luŋ	li:
1s	sick	stomach	very
Index	2ndex	3ndex	4ndex
N	V	N	Adv
Nom	-trns	Acc	+ntsf
PAT	+crsp	COR	
	+sttv		
	+degr		
	1[PAT]		
	3[COR]		

Simple correspondent verbs constitute four subcategories—general, goal, stative, and speech—based on the features [\pm goal], [\pm spch] (speech), and [\pm sttv].

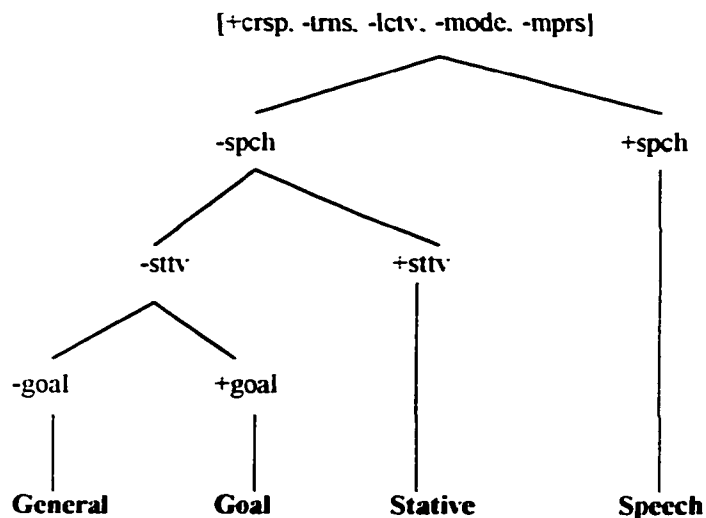


Figure 73: Subcategorization of simple correspondent verbs

Speech correspondent verbs take quote nouns as complements. Goal correspondent verbs take dative pronouns or dative relator nouns in the DATIVE case form. Stative and general correspondent verbs cannot be the dependents of the continuative extension verb

ʔat. General correspondent verbs tend to express the creation of things. Subsequent sections discuss each subcategory.

10.3.4.1 General Correspondent Verbs

General correspondent verbs do not have specific requirements for their dependents. The COR complements of these verbs are the results of the action rather than the affected ‘objects’ of the actions.

Gloss	Form
become	va:f
give birth to	ce:h
make/create	taʔ
vomit	ti.ʔoʔ
weave	ta:n

Table 66: General correspondent verbs

These verbs tend to have inchoative meanings, as in S349a and b.

S 349: General correspondent verbs

(a) ‘I vomited rice.’

ki:	ti.ʔoʔ	ʔa.va:h
1s	vomit	rice
N	V	N
PAT	-tms	COR
	+crsp	

(b) ‘When you die, you become a ghost.’

maj	ku.cet	va:f	pi.nah
2s	die	become	ghost
N	V	V	N
PAT	-tms	-tms	COR
		+crsp	

They can take resultative adverbs or intention extension prepositions, but only after the COR complement, as in S350.

S 350: General correspondent verb with adverb

‘Weave the basket so that it’s thick’.

ta:n	ʔa.co:jʔ	ʔo:n	ʔa.kiər
weave	basket	for	thick (of woven things)
V	N	P	Adv
-tms	-unit	+xtms	+rslt
+crsp	Acc	+ntnt	
m[PAT]	COR		
2[COR]			

The example in S350 poses problems regarding the claim that adverbs are not predicates, and perhaps this is really just a special verb type. There is not enough data now to posit the full distributional range of correspondent verb complements. Topicalizing tests to differentiate transitive and intransitive correspondent verbs require further native-speaker assistance.

10.3.4.2 Goal Correspondent Verbs

Goal correspondent verbs require words with the feature [+datv], including dative relator nouns and dative prepositions, to bear the COR case relation. The only words found in this category are *to:ŋ* ‘to speak to’, *ploh₂* ‘to ask’, and *pa.pi₂* ‘to talk’.

S 351: Goal correspondent verbs

‘He spoke to me.’

dɔ:	to:ŋ	?a.ki:
3s	speak	to-1s
1index	2index	3index
N	V	N
+prn	-trns	+prn
Nom	+crsp	+datv
PAT	1[PAT]	COR
	3[COR]	

They each have derivationally related forms in the speech correspondent verb subclass.

They are rare in available data.

10.3.4.3 Speech Correspondent Verbs

Speech correspondent verbs have the primarily semantic feature [+spch]. They can take both quote and non-quote nouns as COR complements. Verbs found to belong to this verb subcategory include *to:ŋ₁* ‘to say’, *pa.pi₁* ‘to talk of’, *ploh₁* ‘to ask’, and *?o:j*

'to answer'. These verbs may take dative nouns or prepositions as COR adjuncts to mark the goal of the speech.

Speech correspondent verbs may take nouns with the feature [+quot] to bear the COR case relation. Nouns marked [+quot] are quote-derived nouns (see section 7.4.2.4).

S 352: Speech correspondent verb

'I talked about my traveling in Vietnam.'

ki:	pa.pi	ki:-po:k-ju:-lic-to?-viət-na:m
1s	talk of	I went traveling in Vietnam.
N	V	N
Nom	-trns	+quot
PAT	+crsp	Acc
	+spch	COR
	1{PAT}	
	3{[+quot]}	
	3{COR}	

They can also take other nouns as complements, but having the same basic semantic function of speech reference.

S 353: Speech correspondent verb

'I spoke about my hometown.'

ki:	pa.pi:	duŋ-ve:l
1s	talk about	hometown
N	V	N
Nom	-trns	Acc
PAT	+crsp	COR
	+spch	

These verbs tend to agree semantically with their COR counterparts as to whether or not the verb and COR complement are interrogative, as in S354.

S 354: Speech correspondent verb

‘Nô asked. “Where are you going?”’

no:	ploh	ma j-po:k-tu.mə:
(name)	ask	Where are you going?
N	V	N
+prpr	-trns	+quot
Nom	+crsp	Acc
APT	+spch	COR
	1[PAT]	
	3[+quot]	
	3[COR]	

The same verbs can take dative pronouns, dative relator nouns, or dative prepositions (all have the feature [+datv]).

S 355: Bare transitive correspondent verb

‘Ask him how much money.’

ploh	?a.də:	li.mə:-pra?
ask	3s	how much money
1index	2index	3index
V	N	N
-trns	+prnn	+quot
+crsp	+datv	Acc
m[Nom]	Dat	COR
3[+quot]	COR	
3[COR]		
2([COR])		

Only one COR is a complement in this example, thus the one-per-sent rule (Starosta 1978), which posits that a verb may take at most one complement of each of the five Lexicase verb-noun case relations, has not been violated. The verb locates the [+quot] noun and assigns it the COR case. The dative pronoun is also assigned the COR case relation, though as an adjunct.

10.3.4.4 Stative Correspondent Verbs

Stative correspondent verbs are [+sttv] and cannot be the dependent of the continuative extension verb *?at*. These verbs generally have stative simple intransitive

counterparts. Stative correspondent verbs have both degree and non-degree subclasses. Non-degree stative correspondent verbs have possessional meanings, while degree stative correspondent verbs refer to the condition of the COR complement. COR complements of possessive stative correspondent verbs are possessed by or are in existence in relation to the PAT. [+sttv, +degr] verbs are split by the feature [\pm rltv]. [+rltv] verbs are those that can take the comparative dative preposition *ti.lət*.

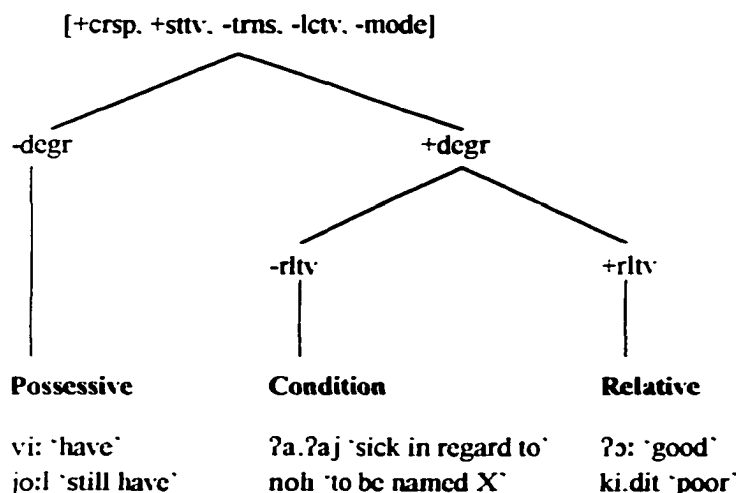


Figure 74: Subcategorization of stative correspondent verbs

10.3.4.4.1 Condition Stative Correspondent Verbs

Verbs in this category describe the condition of parts of things, the extent of a state, or the end result of a state.

Gloss	Form
be sick/hurt	?a.?aj
be similar to	?a.rə?
have a hole	tər.ləŋ
weigh	?n.taŋ
plentiful	bɔ:ŋ
stuffed up	du:t
bad (of eyesight)	pluk

Table 67: Condition stative correspondent verbs

The difference between these verbs and their non-correspondent verb counterparts is that, whereas the semantically affected noun is in the NOMINATIVE case form of non-correspondent verbs, as in S356b, the same nouns only occur in the postverbal ACCUSATIVE position as complements of correspondent verbs, as in S356b.

S 356: Correspondent versus non-correspondent verbs

(a) 'I'm very sick to my stomach.'

ki:	ʔa.ʔaj	pəl.luŋ	li:
1s	sick	stomach	very
1ndex	2ndex	3ndex	4ndex
N	V	N	Adv
Nom	-trns	Acc	+ntsf
PAT	+crsp	COR	
	+sttv	+body	
	+degr		
	1[PAT]		
	3[COR]		

(b) 'My stomach hurts.'

pəl.luŋ	ki:	ʔa.ʔaj
stomach	1s	hurts
1ndex	2ndex	3ndex
N	N	V
Nom	Prv	-trns
PAT		+sttv

The intensifying adverb can precede the COR complement.

S 357: Impersonal transitive verb

'In the summer, fruit is plentiful.'

ki.ʃaj	təŋ.hiən	bə:ŋ	li:	ku.laj
season	summer	plentiful	ntsf	fruit
N	N	V	Adv	N
LOC		+mprs		Acc
		+crsp		COR

These correspondent verbs take interrogative pronominal nouns in the same case-marked positions as with non-interrogative verbs.

S 358: Interrogative pronoun and correspondent verb

'Where does it hurt/What's her sickness?'

ʔa.ʔem-ʔŋ.koh	ʔa.ʔaj	ʔa.məh
she	sick	what
1ndex	2ndex	3ndex
N	V	N
Nom	-trns	Acc
PAT	+crsp	COR

S358 shows the often pre-sentential question word in the postverbal position. This is also evidence that these are not simply verb-‘object’ incorporated single words, that the postverbal noun is a dependent rather than a phonologically bound substring.

These verbs exhibit semantic selectional restrictions regarding the types of complements they take. A verb like ‘sick’ requires some body part as a COR complement, while a verb like ‘deep’ takes a noun referring to the quantity or extent.

S 359: Stative correspondent verbs

(a) ‘I have bad eyesight’			(b) ‘The stream is 5 <i>troq</i> deep.’			
ki:	pluk	mat	ʃɔ:ʔ	tru:	ʃo:ŋ	tro:ʔ
Is	poor vision	eye	stream	deep	five	(unit of length)
N	V	N	N	V	N	N
Nom	-trms	Acc	Nom	+sttv	Acc	+unit
PAT	+crsp	COR	PAT	+crsp	COR	
	+ntsf			-ntsf	+nmrl	
	1[PAT]					
	3[COR]					

There are both intensifiable and non-intensifiable stative correspondent verbs. S359a is [+ntsf] and S359b is [-ntsf].

The verb *ʔa.rəʔ* ‘to be similar to’ has the semantic function of expressing similarity or equality between the nouns in the NOMINATIVE and ACCUSATIVE positions.

S 360: Comparison simple correspondent verb

‘These days, the Pacoh are like the Vietnamese.’

hɔ:j-ʔn.nəh	ti.kuəj-pa.kəh	ʔa.rəʔ	ti.kuəj-juən
currently	Pacoh	similar to	Vietnamese
1ndex	2ndex	3ndex	4ndex
N	N	V	N
+time	Nom	+crsp	Acc
	PAT	+cmpr	COR
		2[PAT]	
		4[COR]	

This word has a homophonous derivationally-related preposition, *ʔa.rəʔ*₂ ‘as’.

10.3.4.4.2 Possessive Stative Correspondent Verbs

Possessive stative correspondent verbs indicate the possession of the noun in the ACCUSATIVE position by the noun in the NOMINATIVE position. Verbs found to belong in this category include *ʔe:* ‘be many of’, *vi:* ‘have’, *bo:n* ‘have’, and *jo:l* ‘still have’.

S 361: Possessive correspondent verb

‘I still have wealth.’

ki:	jo:l	praʔ-ti.riəʔ-ʔa.kaj
1s	still have	wealth
1index	2index	3index
N	V	N
Nom	-tms	Acc
PAT	+crsp	COR
	1[PAT]	
	3[COR]	

The verb ‘still exist’ has a derivationally related homophonous impersonal correlate.

S 362: Possessional simple intransitive verb

‘We have many kinds of vegetables.’

hɛ:	ʔe:	li:	lɥəj	ʔr.na:m
1p	many	very	types	vegetables
N	V	Adv	N	N
Nom	-tms		Acc	
PAT	+crsp		COR	

10.3.4.4.3 Relative Stative Correspondent Verbs

Relative stative verbs are redundantly [+degr], all being able to take the intensifying adverb *li:* ‘very’. Their distinguishing characteristic is that they can take comparative preposition adjuncts, which in turn assign their noun complements the COR case.

RR-V40 [+rltv] → [?([+cmpr])]

A common comparative preposition is *ti.lət* ‘more than’.

S 363: Relative stative verb

'This one is better than that one.'

lam	ʔn.nəh	ʔɔ:	li:	ti.lət	lam	ʔn.tih
(clsf)	this	good	very	more-than	(clsf)	that
N	N	V	Adv	P	N	N
		+sttv		+datv		

Negation occurs before the stative verb and not the preposition.

S 364: Negation of a comparative degree adverb

'This one is not better than that one.'

lam	ʔn.nəh	ləjʔ	ʔɔ:	li:	ti.lət	dɔ:
(unit)	this	no	good	very	more-than	3s
N	N	V	V	Adv	P	N
		+ngtn				

RR-V41 states that [+cmpr] words are both [+degr] and [+sttv], though of course the reverse is not always true.

RR-V41 [+cmpr] → [+degr, +sttv]

RR-V42 [+degr] → [+sttv]

10.3.5 Simple Mode Verbs

Simple mode verbs ([+mode], [-trns], [-crsp], [-lctv]) require nouns in the

NOMINATIVE case form to bear the PAT case relation and ACCUSATIVE nouns to bear the MNS CASE.

RR-V11 [V] → [[?([N])
 ?([MNS])]]

These verbs require an instrumental [+nstr] relator noun complement to bear the MNS case relation.

RR-V23 [+mode] → [[?([+nstr])
 ?[MNS]]]

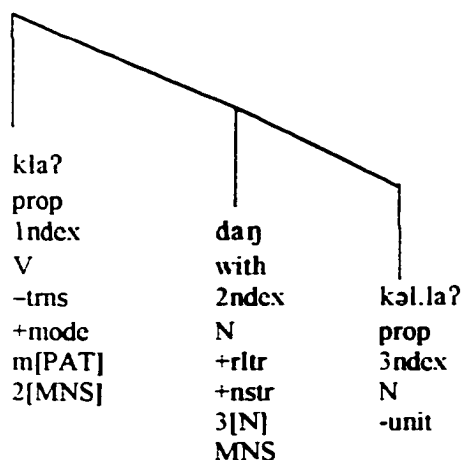
In all existing data, instrumental nouns follow their verb regents.

RR-V24 [+mode] → $\left[\begin{array}{l} ?([N, +nstr]) \\ @<?[N, +nstr] \end{array} \right]$

These properties are demonstrated in S365.

S 365: Simple mode verb

‘Prop it with a prop.’



Pacoh verbs generally take MNS adjuncts rather than correspondents. However, since only certain verbs can take instrumental relator nouns as dependents, indicating some kind of syntactic constraint, these verbs do constitute a subcategory.

Based on the feature [\pm rvrs] (reverse), intransitive mode verbs can be separated into those verbs that take animate or inanimate ‘subjects’ (also, see section 10.3.1.1.2 on other reverse verbs).

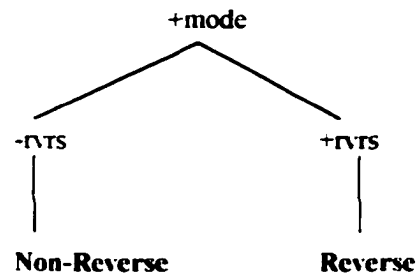


Figure 75: Subcategorization of simple mode verbs in Pacoh

In available data, the instrumental relator nouns these verbs take as dependents include *daŋ*, *baŋ*,⁹¹ and *tək*.⁹² All these forms have the general instrumental meaning of ‘the means of’.

S 366: Simple mode verb

‘Prop it with a prop.’

kiə	to:m	ʔŋ.koh	tək	ka.niə
saw	tree	that	by	saw
1ndex	2ndex	3ndex	4ndex	5ndex
V	N	N	N	N
+trns	+unit	+dmns	+nstr	-unit
+mode	PAT		Acc	
2[PAT]			MNS	
4[MNS]				

10.3.5.1 Non-Reverse Simple Mode Verbs

Non-reverse simple mode verbs require nouns in the NOMINATIVE case form to be animate.

$$\text{RR-V48} \quad [+mode, -rvts] \rightarrow \left[\begin{array}{l} ?([N, \text{Nom}]) \\ ?[+anmt] \end{array} \right]$$

⁹¹ This is probably a recent Vietnamese loan (cf. the Vietnamese instrumental relator noun *bằng* ‘by’).

⁹² This is a Bru loan used by some Pacoh speakers in Quảng Trị province.

S 367: Simple mode verb

‘He hunts with a crossbow.’

dɔ:	pɛŋ	tək	tu.miəŋ
3s	hunt	by	crossbow
1ndex	2ndex	3ndex	4ndex
N	V	N	N
+prnn	-trns	+rltr	-unit
+anmt	+mode	+nstr	
Nom	-rvrs	Acc	
PAT	1[PAT]	MNS	
actr	3[MNS]		
	1[actr]		
	1[+anmt]		

Negation of sentences with MNS complements always occurs through negation of verbs and not negation of nouns, as in S368.

S 368: Negating a mode verb

‘It isn’t able to pick fruit with its tail.’

ləjʔ	bo:n	ka j	tək	ʃɔ:j
no	able	pick fruit	by	tail
V	V	V	N	N
+ngtn	+abl	-trns	+rltr	-unit
		+mode	+nstr	
			Acc	
			MNS	

Many of the verbs in this category are those that have derivationally related nouns formed through a noun-forming word-formation strategy (see section 11.2.1.1). These words usually share word-internal nasals, but in S369, the noun has the liquid [r].

S 369: General simple mode verb

‘Hammer with the hammer.’

ta:ʃ	daŋ	tər.na:ʃ
hammer	with	hammer
N	N	V
-trns	+nstr	-unit
+mode	Acc	
	MNS	

Two examples in the data suggest the possibility of a bare intransitive mode verb, as in S370.

S 370: Bare intransitive mode verb

'They went down to bathe.'

he:	ʃiər	hə:m	da:ʔ
lp	descend	bathe	water
1ndex	2ndex	3ndex	4ndex
N	V	V	N
Nom	-trns	-trns	-nstr
PAT	+xtns	+mode	Acc
actr	1[actr]	1[actr]	MNS
	1[PAT]	1[PAT]	
		+bare	
		4[MNS]	

More indirect data for bare mode verbs (i.e., mode verbs that do not require instrumental relator nouns and simply assign the MNS case directly to common nouns) occurred in the transitive mode verb subcategory (section 10.3.9). Determining whether these verbs form a distinct class of intransitive bare mode verbs or just single lexical items—examples of noun incorporation—would require more data.

10.3.5.2 Reverse Simple Mode Verbs

Reverse simple mode verbs require their NOMINATIVE nouns to be inanimate.

$$\text{RR-V49} \quad [+mode, +rvrs] \quad \rightarrow \quad \left[\begin{array}{l} ?([N, \text{Nom}]) \\ ?[-anmt] \end{array} \right]$$

The semantic function of these verbs is to describe the means of affecting PAT complements. They often refer to the method by which something is created, as in S371. Reverse simple mode verbs are usually derivationally related to transitive verbs, the latter being able to take MNS adjuncts.

S 371: Reverse simple mode verb

'This book is written in Vietnamese.'

ʃa:c	ʔn.nəh	viət	daŋ	ka:ŋ-juən
book	this	write	by	Vietnamese language
N	N	V	N	N
		-trns	+nstr	
		+mode		

There are cases in which the instrumental relator noun indicates the source material of which something is made.

S 372: Reverse simple mode verb

'The *kup* trap is only made of smooth stone.'

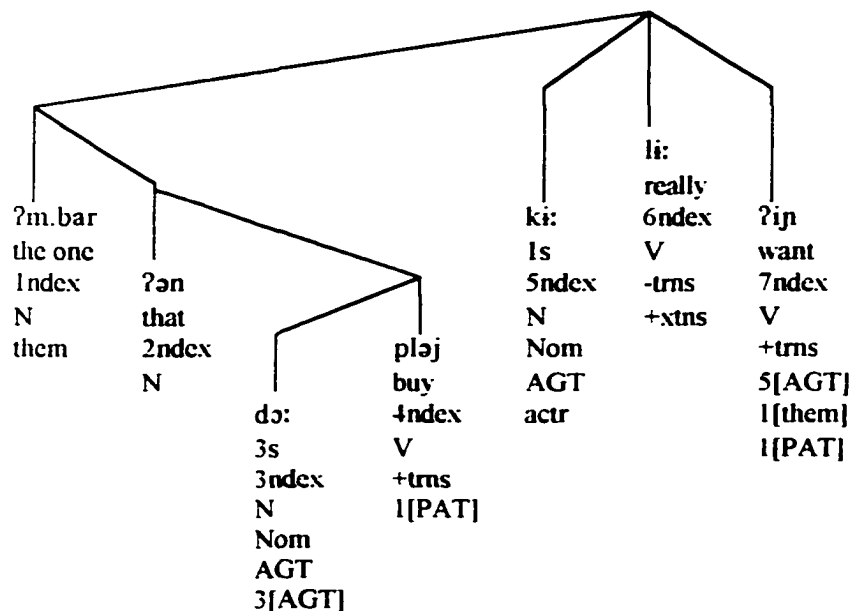
kip	ni:m	taʔ	baŋ	bul	pa.pat
<i>kup</i> trap	only	make	by	stone	smooth
N	V	V	N	N	V
		-trns			
		+mode			

10.3.6 Simple Transitive Verbs

Simple transitive verbs require both AGT and PAT complements. The AGT complement occurs strictly in the preverbal NOMINATIVE case form. Either the PAT is in the ACCUSATIVE case form or the transitive verb recovers the PAT from the pre-sentential theme noun. In S373, the required PAT of the verb 'to like' is recovered from the theme noun in the presentential position.

S 373: Topicalized PAT of a transitive verb

'I really want the one he bought.'



Simple transitive verbs are divided by the features $[\pm\text{nnrt}]$ and $[\pm\text{cstv}]$, resulting in three categories: general, causative, and non-root transitive verbs.

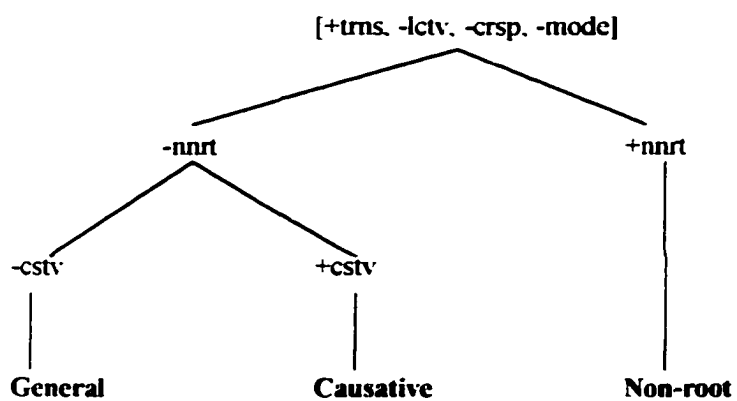


Figure 76: Subcategorization of transitive verbs

Non-root transitive verbs are marked by the word-initial $[\text{?i} \dots]$ form and occur only as the dependents of stative extension verbs (section 10.4.4.5.4). Pacoh causative transitive

verbs share the word-initial substring [pa...], indicating that these verbs have the feature [+cstv]. General transitive verbs, which are non-causative root verbs, consist of a wide range of semantic subcategories.

10.3.6.1 Causative Transitive Verbs

Causative transitive verbs share the word-initial form [pa... (see section 11.2.2.1) and the semantic feature [+cstv]. These verbs generally have homophonous correlates in the transitive extension verb subcategory.

S 374: Causative transitive verb

'I made the dog sniff.'

ki:	pa.het	?a.cɔ:
1s	make-sniff	dog
N	V	N
Nom	+trns	Acc
AGT	+cstv	PAT

Some words found to belong to this subcategory include *pa.?a:k* 'to make play' and *pa.het* 'to cause to sniff.'

10.3.6.2 General Transitive Verbs

General transitive verbs are the least marked and most numerous in this category.

Table 68 lists 16 words in this subcategory, and S375 shows two sample sentences.

Gloss	Form
ask (someone)	pləh
bite	kəp
braid (hair)	kla:ŋ
close	ka.ti:k
cook	ta.kəh
cut	kəh
drink	ŋə:jʔ
eat	ca:
hunt	pəŋ
know (things)	cə:m
listen to	kəm.maŋ
lose (something)	pit
open	pəh
tell (someone)	to:ŋ
to treat (for sickness)	pa.la:j
wash	ʔa.ra:w

Table 68: General transitive verbs

S 375: Transitive verbs

(a) 'I was afraid of meeting you.'

ki:	ʔa.dah	təm.muɦ	ʔa.ca:j
1s	fear	mee:	2s-polite
1ndex	2ndex	3ndex	4ndex
N	V	V	N
+prn	+xtns	+trns	+socl
actr		1[actr]	Acc
Nom		1[AGT]	PAT
PAT		4[PAT]	

(b) 'Carry the backpack.'

ku:j	ba.lo:	ʔaw
carry	backpack	go ahead
1ndex	2ndex	3ndex
V	N	Sprt
+trns	-unit	+mprt
0[AGT]	Acc	
2[PAT]	PAT	

Two small subclasses of general transitive verbs include the degree and the reciprocal subcategories. There is a small class of degree simple transitive verbs, including *ʔiŋ* 'like/want', *ʔa.mo:f* 'love/be fond of', and *ʔa.ʔiŋ* 'hate'. There is one reciprocal transitive verb in the data, shown in S377.

S 376: Degree transitive verb

(a) 'We really love our teacher.'

hɛ:	ʔa.mə:f	li:	tʰəj-jaw ²	hɛ:
1p	love	very	teacher	1s
N	V	Adv	N	N
Nom	+trns	+ntsf	Acc	
AGT	+degr		PAT	

S 377: Reciprocal transitive verb

'A few young people exchanged clothes.'

ba:r-pɛ:	ʔa.ʔɛm	tər.piən	ʔa:w
a few	young people	exchange	clothes
1ndex	2ndex	3ndex	4ndex
N	N	V	N
+nmrl	+prn	+trns	-unit
+plrl	+unit	+rcpr	Acc
Nom		1[+plrl]	PAT
AGT		1[actr]	
actr		1[AGT]	
		4[PAT]	

10.3.6.3 Non-Root Transitive Verbs

Non-root simple intransitive verbs ([-trns], [-root]) are non-finite complements of stative extension verbs (see section 10.4.4.5.4). These verbs are considered to be derived forms rather than the result of inflection since they have only been found to apply to a limited number of verbs. They cannot take overt referential nouns in the NOMINATIVE position. They share the word-initial substring [ʔi... which satisfy the required actor from the discourse.

S 378: Non-root simple intransitive verb

'This ground is easy to dig.'

ku.tjək	ʔn.nɛh	ʔiən	li:	ʔi.biʔ
ground	this	easy	very	to dig
N	N	V	Adv	V
				-fint
				-root

The [ʔi... presyllable has only been found to occur on non-stative and non-extension verbs.

10.3.7 Transitive Correspondent Verbs

Transitive correspondent verbs require PAT, AGT, and COR complements in their case frames. The PAT is in the ACCUSATIVE case, the AGT is in the NOMINATIVE case, and the COR is either in the ACCUSATIVE or DATIVE case. Transitive correspondent verbs consist of two subcategories—bare and non-bare—based on the feature [\pm bare].

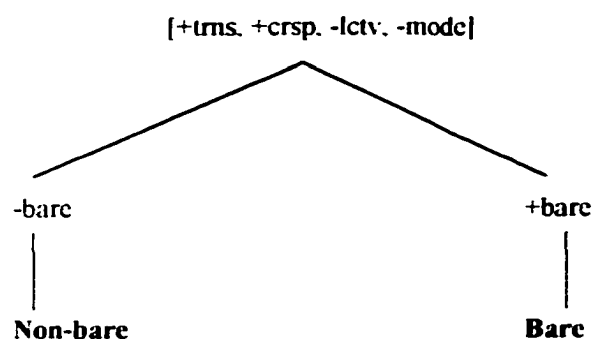


Figure 77: Subcategorization of transitive correspondent verbs

Non-bare transitive correspondent verbs require complements that have the feature [+datv], such as dative pronouns, dative relator nouns, or dative prepositions.

RR-V42 [+crsp, +bare] → [?[-datv]]

RR-V43 [+crsp, -bare] → [?[+datv]]

RR-V43 applies to the example in S379.

S 379: Non-bare transitive correspondent verb

‘He taught Nam the lesson.’

dɔ:	pa.cə:m	ba:j	ʔa.dɔ:	na:m
3s	teach	lesson	to	NAME
1 _{index}	2 _{index}	3 _{index}	4 _{index}	5 _{index}
N	V	N	N	N
Nom	+trns	-unit	+rltr	-unit
AGT	+crsp	Acc	+datv	
	+cstv	PAT	Dat	
	-fact		COR	
	-bare		5[N]	
	1[AGT]			
	3[PAT]			
	4[+datv]			
	4[COR]			

Bare transitive correspondent nouns, which are much less common in the data than their non-bare counterparts, take non-dative nouns as COR complements.

When these verbs take theme nouns, topicalized nouns can only correspond to the PAT, as in S380.

S 380: PAT corresponding to topic

‘As for these several books, I’m giving (them) to my teacher.’

li.mə:	pəl.luk	ʃa:c	ʔn.nəh	ki:	jɔ:n	ʔa.dɔ:	tʰəj-jaw	ki:
several	(unit)	books	this	Is	give	to	teacher	Is
1 _{index}	2 _{index}	3 _{index}	4 _{index}	5 _{index}	6 _{index}	7 _{index}	8 _{index}	9 _{index}
N	N	N	N	N	V	N	N	N
them				Nom	+trns	+rltr	-unit	
				AGT	+crsp	+datv		
					5[AGT]	Dat		
					7[COR]	COR		
					1[them]			
					1[PAT]			

The requirement of a PAT complement can be satisfied by topicalized nouns, but the requirement for a COR complement cannot.

10.3.7.1 Bare Transitive Correspondent Verbs

Bare transitive correspondent verbs take non-dative nouns as COR complements. Unlike their non-bare counterparts, bare transitive correspondent verbs require a specific order of the PAT and COR complements. The only verbs found in this subclass are causative [+cstv] verbs that share the word-initial substring [pa....

S 381: Causative transitive correspondent verb

'I gave him some rice.'

ki:	pa.ca:	dɔ:	dɔ:j
1s	make-eat	3s	rice
1 _{index}	2 _{index}	3 _{index}	4 _{index}
N	V	N	N
+prnn	+trns	+prnn	-unit
Nom	+crsp	Acc	Acc
AGT	+cstv	COR	PAT

Thus, bare transitive correspondent verbs show the linear ordering constraint stated in RR-V32a.

$$\text{RR-V32a } [+bare, +trns, +crsp] \rightarrow \left[\begin{array}{l} @<?[COR] \\ @<?[PAT] \\ @<?[COR]<?[PAT] \end{array} \right]$$

The example in S382 comes from S. Watson 1966.

S 382: Bare transitive correspondent verb

'Don't give him a knife to play with.'

ʔa.kəp	pa.ʔa:k	ʔa.ʔɛ:m	ʔa.ci:w
don't	make-play	child	knife
1 _{index}	2 _{index}	3 _{index}	4 _{index}
V	V	N	N
+xtns	+trns	Acc	Acc
+ngtn	+crsp	COR	PAT
+mprt	+bare		
m[PAT]	m[AGT]		
	3[COR]		
	4[PAT]		
	3[COR]<4[PAT]		

The non-bare transitive correspondent verbs discussed in subsection 10.3.7.2 appear much more often in the data. There could be a change in progress of these competing forms, and the bare correspondent type appears to be losing.

10.3.7.2 *Non-Bare Transitive Correspondent Verbs*

Non-bare transitive correspondent verbs require either dative prepositions or dative relator nouns to be COR complements. The non-bare transitive correspondent verb looks for a [+datv] noun or preposition and assigns it the COR case relation, as stated in RR-V43, section 10.3.7. These are predominant in the data, occurring much more regularly than do the bare counterparts from the previous subsection. Non-bare transitive correspondent verbs do not restrict the relative order of their postverbal PAT and COR complements, as shown in S383a and b.

S 383: Two orderings of COR and PAT complements

(a) 'Give me the fruit.'

jo:n	ʔa.ki:	ku.laj
give	to-1s	fruit
V	N	N
+trns	+datv	-unit
+crsp	Dat	Acc
	COR	PAT

(b) 'Give the fruit to me.'

jo:n	ku.laj	ʔa.ki:
give	fruit	to-1s
V	N	N
+trns	-unit	+datv
+crsp	Acc	Dat
	PAT	COR

Thus, though these verbs require both following PAT and COR correspondents, they leave the order of those two elements unspecified.

These verbs differ from transitive locative verbs, which require either prepositions or relator nouns that have the feature [+lctn]. In S384, the causative transitive verb can take a dative relator noun, as in (b), or a dative preposition, as in (c). It cannot take a locational preposition, as in (a), thereby indicating that the verb is [+crsp] rather than [+lctv].

S 384: Differentiating locative and correspondent verbs

(a) 'The Vietnamese sell pigs to the Pacoh.'

*juən	pa.tɛ:c	?a.lik	to?	pa.kəh
Vietnamese	sell	pig	to	Pacoh
N	V	N	P	N
	+trns		+lctn	
	+crsp			

(b) 'The Vietnamese sell pigs to the Pacoh.'

juən	pa.tɛ:c	?a.lik	?a.dɔ:	pa.kəh
Vietnamese	sell	pig	to	Pacoh
N	V	N	N	N
	+trns		+datv	

(c) 'The Vietnamese sell pigs to the Pacoh.'

juən	pa.tɛ:c	?a.lik	jɔ:n	pa.kəh
Vietnamese	sell	pig	to	Pacoh
N	V	N	P	N
	+trns		+datv	
	+crsp			

Within this subclass, there is a group of [+cstv] words phonologically marked by word-initial substring [pa....

S 385: Causative non-bare transitive correspondent verb

'I taught the lesson to the student.'

ki:	pa.cɔ:m	ba:j	?a.dɔ:	hɔ:k-fi:n
1s	teach	lesson	to	student
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	N	N
Nom	+trns	Acc	+datv	
AGT	+crsp	PAT	Dat	
	+cstv		COR	
	-bare			
	1[AGT]			
	3[PAT]			
	4[+datv]			
	4[COR]			

The semantic goal of the action may be marked by dative pronouns, which all have the word-initial substring [?a... and the feature [+datv], which indicates that they can bear the COR case relation. S386 is an example.

S 386: Beneficiary pronoun as COR complement

'Nam's mother bought a ball for him.'

ʔa.ʔam	na:m	pləj	ʔa.də:	mə:j	lam	bə:ŋ
mother	(name)	buy	for-3s	one	(unit)	ball
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex
N	N	V	N	N	N	N
Nom	+prpr	+trns	+prmn	Acc	+unit	-unit
AGT		+crsp	+datv	PAT		
		1[AGT]	Acc			
		5[PAT]	COR			
		4[+datv]				
		4[COR]				

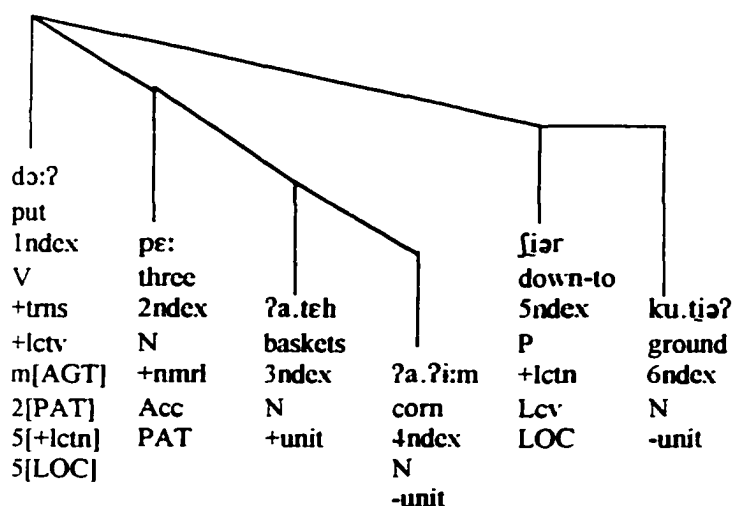
10.3.8 Transitive Locative Verbs

Transitive locative verbs require three complements: AGT, PAT, and LOC.

These are non-bare locative verbs, meaning that they require words having the feature [+lctn], either locational nouns or locational prepositions, to bear or assign the LOC case relation. The LOC complements are the directional goals of the PAT complements.

S 387: Transitive locative verb

'Put the three baskets down on the ground.'



There are at least several words in this class. They can be divided into two categories: causative and non-causative.

Gloss	Form	[±cstv]
bring	do:ŋ	-
bring in	ta.mə:t	+
lower	pa.ʃiər	+
put	də:ʔ	-
put out	pa.ŋoh	+
raise	ʔa.ʃər	+
throw (away)	pa.kʰir	+
toss	vit	-

Table 69: Transitive locative verbs

Causative verbs share the semantic feature [+cstv] and the causative [pa... (also [ʔa... or [ta...]) word-initial substring.

S 388: Causative transitive locative verb

‘Bring the child up to the house.’

ʔa.ʃər	ʔe.ʔe:m	toʔ	duŋ
cause-go-up	child	to	house
V	N	P	N
+trns	Nom	+lctn	-unit
+lctv	PAT	Lcv	
+cstv		LOC	
3[+lctn]		+trmn	
3[LOC]			
3[+trmn]			

In S388, the locational preposition, which is underspecified for direction, is assigned the feature [+trmn] by the verb.

Transitive locative verbs differ from transitive correspondent verbs by the kinds of prepositions and relator nouns they can and cannot take as complements. Whereas correspondent verbs take dative nouns or prepositions, locative verbs require locational nouns or prepositions.

S 389: Locative versus correspondent verbs

(a) 'I threw the banana to him.'

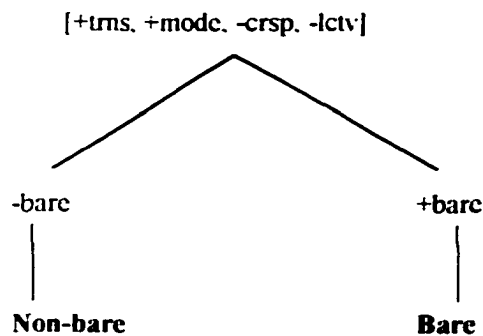
ki:	vit	pe:ʔ	toʔ	do:
1s	toss	banana	to	3s
N	V	N	P	N
Nom	+lctv	Acc	+lctn	-unit
AGT	+trns	PAT	Lcv	LOC

(b) 'I gave him the banana.'

ki:	jo:n	pe:ʔ	ʔa.do:
1s	give	banana	to-3s
N	V	N	N
Nom	+crsp	Acc	+prnn
AGT	+trns	PAT	+datv
			Dat
			COR

10.3.9 Transitive Mode Verbs

Mode transitive verbs require three complements: AGT, PAT, and MNS complements. The AGT complement is assigned to the noun in the preverbal NOMINATIVE position. The PAT can either be in the postverbal ACCUSATIVE position or be related to the theme noun in the sentence-initial topic position. The MNS complement has always been found to occur in the postverbal ACCUSATIVE position. Moreover, the MNS complement follows the PAT complement in the ACCUSATIVE position. Transitive mode verbs in Pacoh include bare and non-bare mode verbs.

**Figure 78: Subcategorization of transitive mode verbs**

Non-bare transitive instrumental verbs require relator nouns having the feature [+nstr] to bear the MNS case, whereas bare transitive mode verbs can take non-instrumental nouns directly.

Instrumental relator nouns that can function with these verbs include *daŋ*₂, the standard instrumental word, and *tək*, spoken by the Pacoh in Quảng Trị province.

S 390: Transitive mode verb

(a) 'Monkeys pick fruit by hand.'

ʔa.duəf	ka:j	ku.laj	daŋ	ʔa.ti:
monkey	pick	fruit	by	hand
Index	2ndex	3ndex	4ndex	5ndex
N	V	N	N	N
Nom	+trns	Acc	+nstr	
AGT	+mode	PAT	MNS	
	1[AGT]			
	3[PAT]			
	4[+nstr]			
	4[MNS]			

(b) 'Hit the mouse with a stick.'

puh	ʔa.bił	tək	duj
hit	mouse	by	stick
Index	2ndex	3ndex	4ndex
V	N	N	N
+trns	Acc	+nstr	-unit
+mode	PAT	MNS	

Only two examples of the bare category have been found, neither taking instrumental relator nouns, though they can.

S 391: Mode verbs with non-relator noun dependents

(a) 'I cooked the rice with fire.'

ki:	ta.kəh	də:j	ʔu:f
Is	cook	rice	fire
N	V	N	N
AGT	+trns	PAT	MNS

(b) 'Eat rice with chopsticks.'

ca:	də:j	tuəh
eat	rice	chopsticks
V	N	N
	PAT	MNS

Without further data, it cannot be stated decisively whether these examples demonstrate the existence of an additional class of instrumental non-relator nouns or are simply single lexical entries.

10.4 EXTENSION VERBS

Extension verbs take predicates that branch to the right as complements. Pacoh extension verbs are divided by the two features [\pm fact] and [\pm nmnl], resulting in three primary extension verb subcategories: fact, nominal, and general extension verbs.

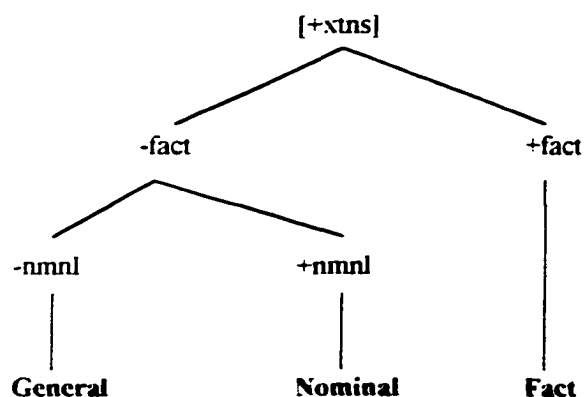


Figure 79: Primary subcategorization of Pacoh extension verbs

The first distinction is between fact and non-fact verbs, the former taking finite predicate complements and the latter taking non-finite ones.

RR-V6 [+fact] → [?[+fint]]

RR-V7 [-fact] → [?[-fint]]

Non-fact extension verbs consist of nominal and non-nominal verbs. The nominal extension verb *?ih* takes only predicate nouns as complements. Non-nominal extension verbs take predicate verbs.

RR-V36 [+nmnl] → [?[N, prdc]]

RR-V37 [-nmnl] → [?[V, -fint]]

Each of these primary subcategories has a specific range of syntactic and semantic functions. Fact extension verbs take finite verbs as complements, which are often forms of indirect speech. The single nominal extension verb *?ih* 'be not' takes only nouns as complements, including utterance-derived nouns, with the semantic function of truth-value negation. General extension verbs constitute the largest class and have the widest

range of functions. They can express causation, aspect, negation, mood, sequence, and many auxiliary-like functions.

This section contains three main subsections: fact extension verbs, nominal extension verbs, and non-fact/non-nominal extension verbs.

10.4.1 Extension Verbs and So-called Serial Verb Constructions

Wilawan 1993 demonstrated how what have often been called serial verb constructions (SVCs) in East and Southeast Asian linguistic language are examples of extension verbs, verbs that take other verbs as complements. In effect, any verb—auxiliary, negation, stative, or active—that takes a predicate as a complement is an extension verb. Then, the issue becomes what kinds of complements these verbs take, whether finite or non-finite. Furthermore, there are verbs that can only occur as the highest verb regent and those that can be dependents of other verbs, what are in this grammar considered prime and non-prime verbs respectively.

Extension verbs in Pacoh cannot be separated by clausal prepositions or conjunctions from their verb dependents. The dependent verbs cannot be directly negated, only the regent verbs. In Pacoh, extension verbs include several subtypes. The case-related subcategories are intransitive, transitive, and correspondent verbs. Additional extension verb subcategories include aspectual, motion, and stative verbs. In all cases, the above mentioned properties are shared by these verbs.

10.4.2 Fact Extension Verbs

Fact extension verbs take finite verb complements, meaning that the lower verbs allow overt NOMINATIVE nouns. Verbs in this category commonly express assertions, beliefs, and emotions. They can be subcategorized by the feature $[\pm\text{sttv}]$.

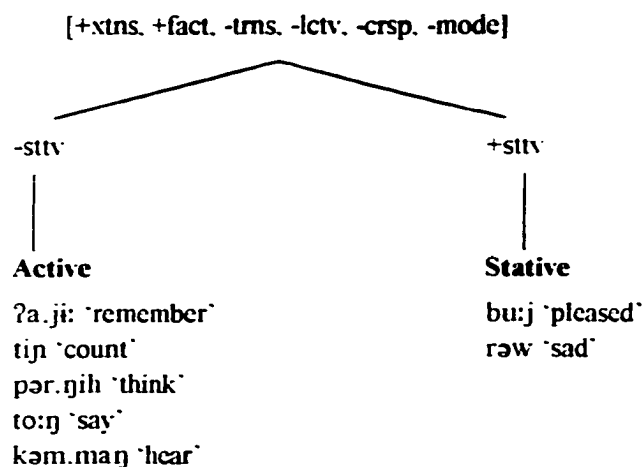
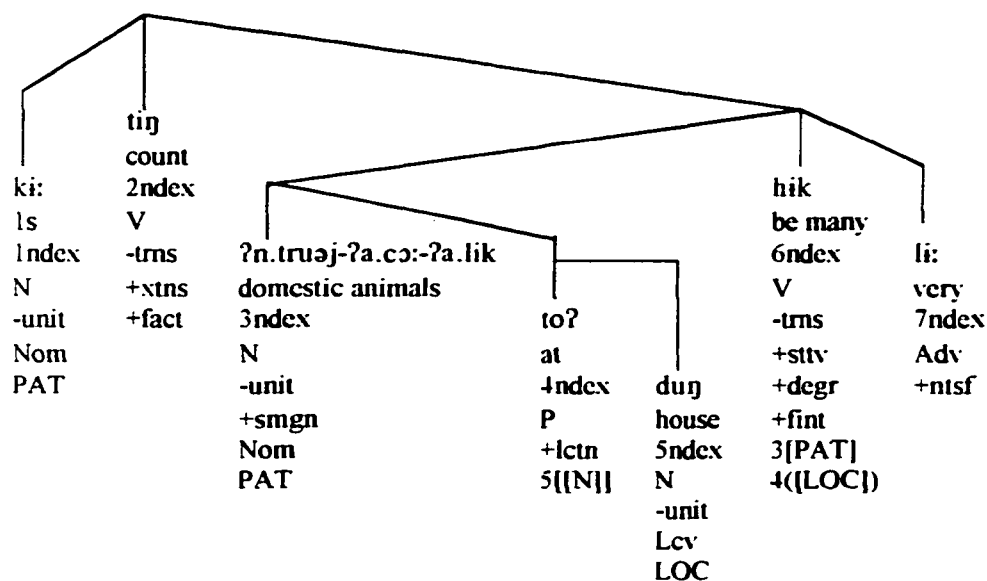


Figure 80: Subcategorization of fact extension verbs

Active fact extension verbs can be the dependents of the continuing extension verb *ʔat* 'in the process of', while stative verbs cannot. Consider the examples in S392, which demonstrates an active verb, and S393, which demonstrates a stative verb.

S 392: Active fact extension verb

'I counted that there were many animals at the house.'

**S 393: Stative fact extension verb**

'I'm sad that you're going back to America.'

ki:	rəw	li:	ʔa.ca:j	cə:	to?	mi:ʔ
ls	sad	very	2s	return	to	America
Index	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex
N	V	Adv	N	V	P	N
Nom	-trns	+ntsf	Nom	-trns	+lctn	-unit
PAT	+sttv		PAT	+lctv	Lev	
	+degr			-bare	LOC	
	+xtns			4[PAT]	7[N]	
	+fact			6[+lctn]	6[LOC]	
	1[PAT]					
	5[V]					
	5[V, +fint]					

In S392 and S393, the non-fact verbs each have finite verb complements.

10.4.3 Nominal Extension Verbs

There are two derivationally related homophonous words in this category, subdivided by the feature [\pm mprs]. Both have the feature [+ngtn].

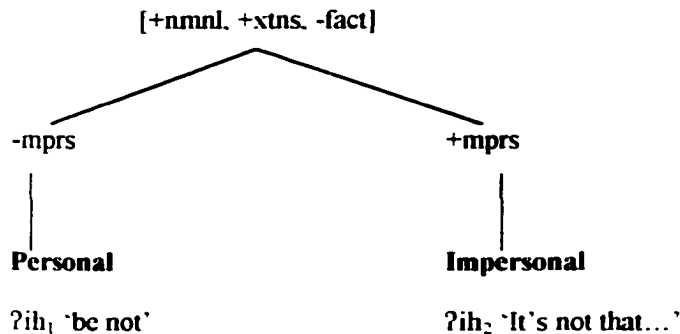


Figure 81: Subcategorization of nominal extension verbs

The personal nominal extension verb can take an overt NOMINATIVE noun, while the impersonal form cannot, the general difference between those two verb types.

The personal nominal negation extension verb *?ih₁* ‘be not’ takes only nouns as dependents and semantically negates them.

S 394: Personal nominal negation extension verb

‘This pen isn’t yours.’

?u.ra?	?n.nɛh	?ih	?m.maj
pen	this	be not	yours
Index	2ndex	3ndex	4ndex
N	N	V	N
Nom		+xtns	prdc
PAT		+nmnl	
		+ngtn	

Nouns in Pacoh can always serve as root predicates in both possessive and existential sentences (as discussed in section 7.3.2.4). In S395, the conjunction expects two words that share the same primary lexical characteristic.

S 395: Noun predicate and verb in coordinative construction

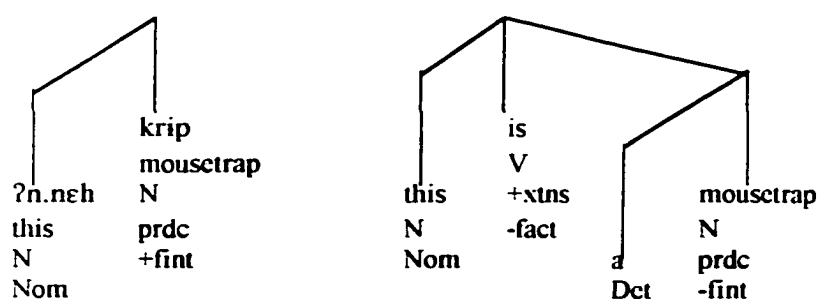
‘Those people who came weren’t Vietnamese, but rather were Pacoh.’

ŋa:j	to?	?n.nɛh	?ih	ti.kuəj-viət	ma:	ti.kuəj-pa.kəh
3s	come	here	be not	Vietnamese	but	Pacoh
N	V	N	V	N	Cnjc	N
			prdc			prdc

In this case, both the verb *?ih* and the noun 'Pacoh' are predicates. This ability of Pacoh nouns to be root sentential heads differs from languages that generally require copula verbs, such as English.

S 396: Contrasting Pacoh and English equational constructions

'This is a mousetrap.'



The impersonal nominal extension verb *?ih₂* 'It's not...' occurs without an overt noun in the preverbal NOMINATIVE case form. This verb has the semantic function of negating a truth value.

S 397: Impersonal nominal negation extension verb

'It's not 50,000.'

<i>?i:h</i>	<i>ʃo:ŋ-cit-ŋi:n</i>
not-be	fifty-thousand
Index	2ndex
V	N
+xtns	prdc
+ngtn	
+nmnl	
+mprs	
2[N]	
2{prdc}	

The nominal negation extension verb *?ih* is briefly described in ND&P (1986:

64), and existing data for this grammar verified those positions. However, some native

speakers feel that the supposed nominal negator *?ih* could be used with verb dependent and the verbal negator *ləj'* could be used with noun dependent, though generally that is not the case. Examples of these counterexamples are shown in S398.

S 398: Exception for nominal negation verb

(a) 'I don't want.'			(b) 'He's not Vietnamese.'		
ki:	?ih	?ijɲ	?a.ca:j-?ŋ.koh	ləj'	ti.kuəj-viət
1s	not	want	he	not	Vietnamese person
1index	2index	3index	1index	2index	3index
N	V	V	N	V	N

It may be that, for these speakers, these verbs are both semantically negational and may take any predicates, regardless of the lexical subcategory of their dependents.

10.4.4 Non-Fact, Non-Nominal Extension Verbs

Non-fact extension verbs are subcategorized into four primary subcategories based on the features [\pm crsp] and [\pm trns]: intransitive non-correspondent, transitive non-correspondent, intransitive correspondent, and transitive correspondent verbs. In Figure 82, case features differentiate the primary subcategories. Beneath each subcategory, associated chaining rules (CRs) used to link arguments of the regent verb with those of their dependent verbs are listed below. The uses of CRs are described in section 3.3.1, and all of the CRs in Figure 82 are described in the subsection 10.4.4.1.

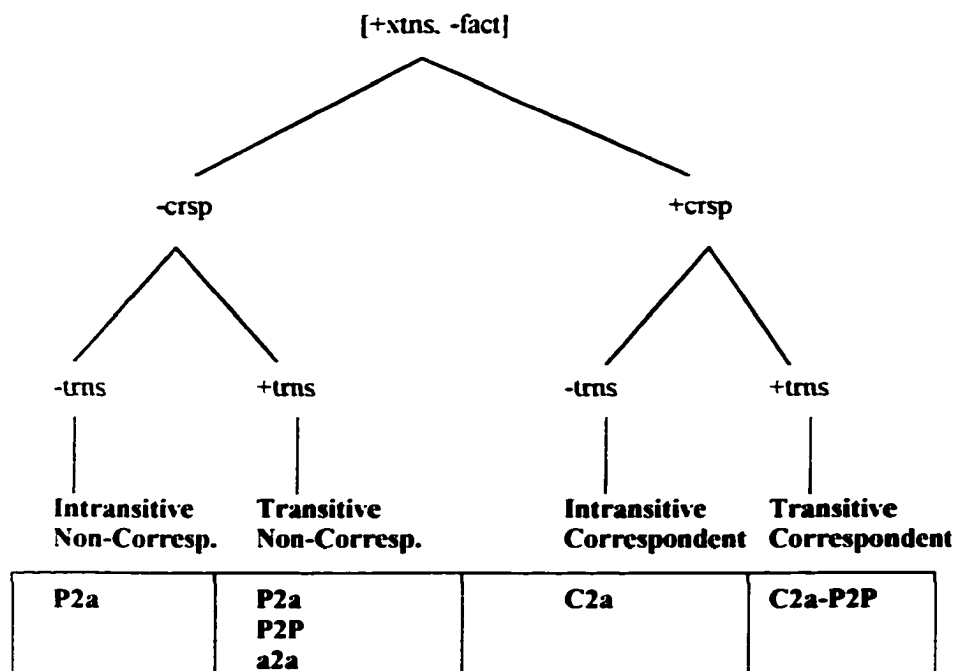


Figure 82: Subcategorization of general non-fact extension verbs

Each verb type applies a CR to satisfy the case requirements of the lower non-finite verb. Intransitive non-correspondent verbs apply the P2a rule. Intransitive correspondent verbs apply the C2a rule. Transitive non-correspondent verbs include subcategories that variously apply the a2a, P2a, and P2P rules, depending on the verb subcategory as discussed in the respective subsections. Transitive correspondent rules must apply two rules, namely, the C2a and P2P rules. Following is discussion of the subclasses.

Non-stative, intransitive, non-correspondent verbs apply the P2a rule. The index of the PAT of the regent verb is copied to the index of the required actor of the dependent verb. By using the PAT, this rule applies to both transitive and intransitive verbs, whether the PAT is in the NOMINATIVE or ACCUSATIVE case. Consider S399a to c.

S 399: Examples of verbs that apply the P2a rule

(a) 'I won't go.'

ki:	ləjʔ	po:k
Is	no	go
Index	2ndex	3ndex
N	V	V
+prmn	+xtns	-trns
actr	+ngtn	1[actr]
PAT	1[actr]	1[PAT]
	1[PAT]	

(b) 'I want to eat rice.'

ki:	ʔijɿ	ca:	də:j
Is	want	eat	rice
Index	2ndex	3ndex	4ndex
N	V	V	N
+prmn	+xtns	+trns	-unit
actr	+stiv	1[actr]	PAT
PAT	1[actr]	1[AGT]	
	1[PAT]	4[PAT]	

(c) 'I went down to bathe.'

ki:	ʃər	hə:m	da:ʔ
Is	descend	bathe	water
Index	2ndex	3ndex	4ndex
N	V	V	N
+prmn	+xtns	-trns	MNS
actr	-trns	+mode	
PAT	1[actr]	1[actr]	
	1[PAT]	1[PAT]	
		4[MNS]	

There are transitive verbs that can utilize the a2a CR, as in S400, with a verb adjunct.

S 400: Transitive verb using the a2a chaining rule

'I eat rice to live.'

ki:	ca:	də:j	tu.məŋ
Is	eat	rice	to live
Index	2ndex	3ndex	4ndex
actr	1[actr]	PAT	1[actr]
AGT	1[AGT]		1[PAT]

Transitive verbs, especially those that, in semantic terms, force the lower actant to perform an action, employ the P2a rule. In this case, the ACCUSATIVE PAT noun corresponds to the actor of the lower verb, as in S401.

S 401: Verb using the P2a rule

‘I told him to eat.’

ki:	juə	də:	ca:
1s	order	3s	eat
1index	2index	3index	4index
N	V	N	V
actr	+trns	PAT	-fint
AGT	1[actr]		3[actr]
	1[AGT]		3[PAT]
	3[PAT]		

Finally, there are correspondent verbs, which require the C2a rule, which allows the lower verb to take the regent verb’s COR for its own actor, the consequence of which is that the same index applies to either the PAT or AGT case relation, depending on the verb’s own transitivity.

S 402: Verb using C2a rule

‘I made him eat.’

ki:	pa.ca:	?a.də:	ca:
1s	make cat	to 3s	eat
1index	2index	3index	4index
N	V	N	V
actr	-trns	COR	3[actr]
PAT	+crsp		3[PAT]
	3[COR]		

In S402, the lower verb copies the index of the COR to its actor requirement and then, being intransitive, assigns the same number to its PAT requirement. The rest of this section consists of discussion of the chaining rules and the four primary non-fact extension verbs.

10.4.4.1 Chaining Rules

The use of chaining rules for subcategorization is described in section 10.4.4.1.

The four case-related rules (P2a, a2a, P2P, and C2a) are described as well in section

3.3.1. This subsection describes the four chaining rules and discusses the need for the proposed C2a rule in addition to the other three currently in use in Lexicase literature.

Previous Lexicase analyses (Starosta 1997:section II. H, 1998:section 5.2, Indrambarya 1994:section 3.3.1.7, Wilawan 1993:section 4.3.3.2, and Pagotto 1985a and 1985b) have so far used three chaining rules (CRs) to account for the way non-finite verbs satisfy contextual case-related features. The P2a (PAT to actr) rule was used first (Pagotto 1985b), with the addition of the P2P (PAT to PAT) rule (Pagotto 1985a and Indrambarya 1990) and a2a (actr to actr) rule (Wilawan 1993:76-79) in later works. The case requirements of lower infinitival verbs are satisfied through the linking of features with complements of the upper regent verb. The a2a and P2P rules apply only to certain classes of verbs. The proposed C2a rule is also more restricted, applying only to certain classes of verbs, most notably, causative correspondent extension verbs (section 10.4.4.3). The P2a rule is the default rule, applying to any verb it can that is not already specified for other rules. Table 70 provides examples of combinations of verbs varying according to the features [\pm trns] and [\pm crsp]. Which rules apply are listed down the right column.

	Example	Verb Type	Gloss	Rule
1.	ki: ?ij̃ po:k Is want go	-trns & -trns	'I want to go.'	P2a
2.	ki: ?ij̃ ca: dɔ̃:j Is want eat rice	-trns & +trns	'I want to eat rice.'	P2a
3.	ki: ?ij̃ dɔ̃: po:k Is want him ⁹³ go	+trns & -trns	'I want him to go.'	P2a
4.	ki: ?ij̃ dɔ̃: ca: dɔ̃:j Is want him eat rice	+trns & +trns	'I want him to eat rice.'	P2a
5.	ki: ɣj̃əl duəh ca: Is use chopsticks to eat	+trns & -trns	'I use chopsticks to eat.'	a2a ⁹⁴
6.	ki: pa.ca: ?a.dɔ̃: ca: Is make eat for him eat	-trns. +crsp & -trns	'I made him eat.'	C2a
7.	ki: pa.ca: ?a.dɔ̃: ca: dɔ̃:j Is make eat for him eat rice	-trns. +crsp & +trns	'I made him eat rice.'	C2a
8.	ki: ɣɔ̃:n dɔ̃:j ?a.dɔ̃: ca: Is give rice for him eat	+trns. +crsp & +trns	'I gave him rice to eat.'	C2a, P2P
9.	dɔ̃:j ?n.nəh ?ɔ̃: ?i.ca: rice this good to eat	-trns. +sttv & +trns	'This rice is good to eat.'	P2P
10.	dɔ̃: pləj dɔ̃:j ?i.ca: 3s buy rice to eat	+trns & +trns	'He bought the rice to eat.'	P2P

Table 70: List of types of extension verbs

Of the ten examples in Table 70, the first four examples, as well as the last, show the use of the P2a rule, which always applies last where it can. The a2a rule applies to complements (Wilawan 1993:section 4.3.3.2), as in sentence five. The C2a rule applies in examples six to eight, always with the dative nouns. The P2P applies in eight to ten, and in conjunction with the C2a rule in sentence 8.

This grammar includes the use of the COR case relation in CRs. In sentences with transitive correspondent verbs in which the PAT of the regent verb has already been associated with the PAT of the dependent verb, the approach taken by Indrambarya

⁹³ These are considered PAT complements of the upper verb since they can correspond to sentences in which those same words are in the TOPIC case form.

⁹⁴ This example is one of the few cases in which the upper verb requires a lower verb complement. Otherwise, this would be an adjunct, and the example would be unuseable for a subcategorization analysis.

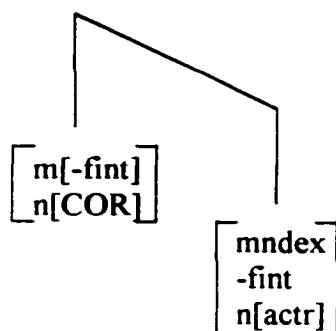
(*ibid.*) and Wilawan (*ibid.*) has been to associate the nearest remaining nominal element, the COR complement, following Pagotto's claim. However, the non-finite verbs in these sentences are complements, and their actors always correspond to the COR of the upper verbs. A corresponding semantic relationship is that PAT, AGT, and COR complements are often enacting forces. The distinction between PAT and COR as complements of different grammatical roles is not always semantically clear, but they do form a group distinct from MNS and LOC complements, which generally cannot have actor macroroles in lower verbs.

The C2a rule links the COR complement of the upper verb to the actor requirement of the lower non-finite complement. The formal expression of this is stated in CR-3.

$$\begin{bmatrix} \text{mndex} \\ \text{?[actr]} \end{bmatrix} \rightarrow [\text{n[actr]}] \setminus \begin{bmatrix} \text{m[-fint]} \\ \text{n[COR]} \end{bmatrix}$$

The following stemma shows the general dependency shape in which this applies.

Cr-3: C2a



The requirement of the regent correspondent non-fact extension verb is for a non-finite verb and a COR complement. The dependent non-finite verb copies the index of the COR 'n' of the regent verb to its own actor requirement 'n'.

10.4.4.2 Correspondent Intransitive Extension Verbs

Correspondent intransitive extension verbs require dative pronouns or dative relator nouns, both having the feature [+datv] and the shared [ʔa... presyllable, to bear the COR case relation. The COR is linked to the lower verb by the C2a rule. Few examples of the causative and non-causative verbs in this subclass have been found.

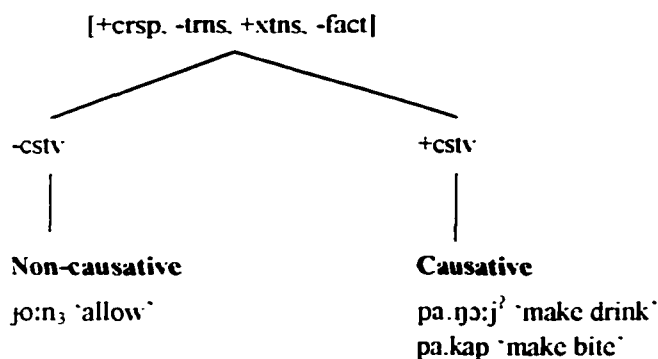


Figure 83: Correspondent intransitive extension verbs

Causative verbs share the form [pa..., indicating they have the semantic feature [+cstv].

S 403: Indirect extension verb

'I made him eat the rice.'

ki:	pa.ca:	ʔa.dɔ:	ca:	dɔ:j
1s	feed	to 3s	eat	rice
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	V	N
Nom	-trns	+prn	+trns	Acc
PAT	+crsp	+datv	-fint	PAT
	+xtns	Dat	3[actr]	
	+cstv	COR	3[AGT]	
	1[PAT]		5[PAT]	
	3[+datv]			
	3[COR]			

They can also take dative relator nouns to mark the COR, as in S404.

S 404: Correspondent extension verb with dative relator noun

'I make my friend drink.'

ki:	pa.ŋɔ:j ¹	?a.dɔ:	jəw	ŋɔ:j ²
1s	make drink	to	friend	drink
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	N	V
Nom	-trns	+rltr	-unit	-fint
PAT	+crsp	+datv		-trns
	+xtns	Dat		3[actr]
	+cstv	COR		3[PAT]
	1[PAT]	3[N]		
	3[COR]			

These dative relator nouns and their dependent nouns cannot be postposed and always precede the lower verb in the clause. The one non-causative verb in this verb subcategory is *jo:n* 'permit', shown in S405.

S 405: Non-causative correspondent extension verb

'Let me eat tonight.'

?i.bi:	?n.nəh	jo:n	?a.ki:	ca:	dɔ:j	?aw
evening	this	let	to-1s	eat	rice	(urge)
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex	7ndex
N	N	V	N	V	N	Sprt
+time	+dmns	-trns	+prn	-fint	Acc	+mprt
		+crsp	+datv	+trns	PAT	
		+xtns	Dat	4[actr]		
		-cstv	COR	4[AGT]		
		m[PAT]		6[PAT]		
		5[prdc]				
		4[COR]				

10.4.4.3 Correspondent Transitive Extension Verb

Only one word has been found to belong to this category, *jo:n₂* 'give'. This verb requires two chaining rules, the C2a to link the COR with the actor and the P2P to link PAT to PAT. Tests with speakers did not reveal any causative verbs that match the properties of this subcategory.

S 406: Correspondent transitive extension verb

'I gave rice to him to eat.'

ki:	jo:n	dɔ:j	?a.dɔ:	ca:
1s	give	rice	to-3s	eat

Index	2ndex	3ndex	4ndex	5ndex
N	V	N	N	V
+prnn	+trns	-unit	+prnn	+trns
Nom	+crsp	Acc	+datv	-fint
AGT	1[AGT] 3[PAT] 4[COR]	PAT	Dat COR	4[actr] 4[AGT] 3[PAT]

10.4.4.4 Transitive Non-Correspondent Extension Verbs

Transitive non-correspondent extension verbs require AGT, PAT, and verb complements. They are subcategorized by the features [\pm ntrn] (internal). Internal verbs are divided by [\pm ffct] (affected). These features are related to the chaining rules, as listed beneath each subcategory.

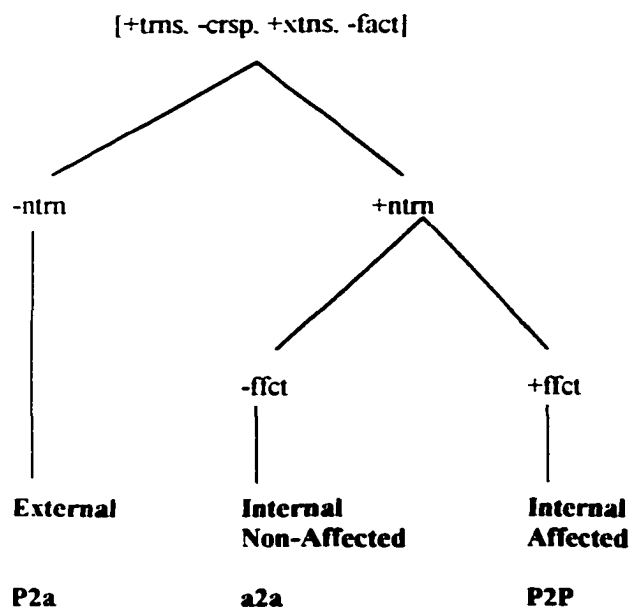


Figure 84: Transitive non-correspondent extension verbs

The feature [\pm ntrn] refers to the relationship between the actors of the regent and dependent verbs. For internal affected verbs, the actor is the same in the upper and lower verb. For external verbs, the actor nouns do not have the same semantic reference. The

feature [\pm ffct] refers to whether the lower verb may be transitive or intransitive; [+ffct] verbs take transitive complements, and [-ffct] verbs take intransitive verb complements.

Internal non-affected verbs maintain the same actor index in the regent verb as in the dependent verb by the a2a chaining rule. Internal affected verbs apply the P2P rule to link the ACCUSATIVE PAT of the regent verb with that of the dependent verb. Dependent non-finite verbs recover their actor nouns from discourse contexts. As for external verbs, the actor index of the regent verb differs from the actor index of the lower verb, and instead, the ACCUSATIVE PAT provides the index for the actor of the dependent verb.

10.4.4.4.1 External Transitive Extension Verb

External transitive extension verbs are divided by the features [\pm prcp] and [\pm cstv], resulting in three subcategories: perception, causative, and general external transitive extension verbs.

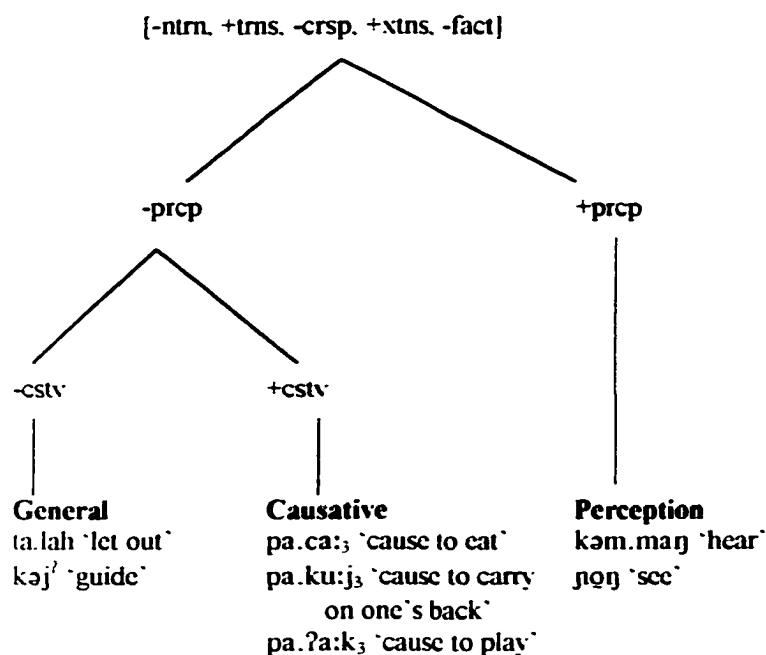


Figure 85: External transitive non-correspondent extension verbs

In each case, the P2a rule is used to link the ACCUSATIVE PAT with the actor of the dependent verb.

Perception verbs are used to indicate that the actor perceives the action or state of the PAT.

S 407: Perceptual transitive extension verb

(a) 'I hear you speak.'

ki:	kəm.maŋ	ʔa.ca:j	to:ŋ
1s	hear	2s	speak
Index	2ndex	3ndex	4ndex
N	V	N	V
Nom	+trns	Acc	-fint
AGT	+xtns	PAT	3[actr]
	-ntm		3[PAT]
	+prcp		
	1[AGT]		
	3[PAT]		

(b) 'I see that you're very nice.'

ki:	ŋoŋ	ʔa.ʔe:m	ʔɔ:	li:
1s	see	2s	nice	very
Index	2ndex	3ndex	4ndex	5ndex
N	V	N	V	Adv
Nom	+trns	Acc	+sttv	+ntsf
AGT	+xtns	PAT	3[actr]	
	-ntm		3[PAT]	
	+prcp			
	1[AGT]			
	3[PAT]			

Causative verbs have the word-initial [pa... presyllable and share the semantic feature [+cstv].

S 408: Causative transitive extension verb

‘Get the dog to bite the mouse.’

pa.kap	?a.cə:	kap	?a.bil
make-bite	dog	bite	mouse
1ndex	2ndex	3ndex	4ndex
V	N	V	N
+trns	PAT	+trns	PAT
+xtns		2[actr]	
+cstv		2[AGT]	
m[AGT]		4[PAT]	
2[PAT]			

The rest of the verbs in this subcategory range in meaning, but fall into the semantic scope of command or prohibition, as in S409a and b.

S 409: External transitive extension verb

(a) ‘Keep that kid from talking.’

ʝ:?	?a.kaj	to:ŋ
prevent	kid	speak
1ndex	2ndex	3ndex
V	N	V
+trns	Acc	-fint
+xtns	PAT	2[actr]
-ntm		2[PAT]
m[AGT]		
2[PAT]		
3[prdc]		

(b) ‘I let the domestic animals out to eat.’

ki:	ta.lah	?n.truəj-?a.li:k	?i.ca:-?i.ca:
1s	let out	domestic animals	eat
1ndex	2ndex	3ndex	5ndex
N	V	N	V
actr	+trns	Acc	-fint
Nom	+xtns	PAT	3[actr]
AGT	-ntm		3[PAT]
	1[AGT]		
	3[PAT]		

10.4.4.4.2 Internal Non-Affected Transitive Extension Verbs

Internal non-affected transitive extension verbs use the a2a rule to link arguments of verbs. These verbs have been called ‘manner’ verbs (Indrambarya 1994:section 5.1.2.1), but are here named ‘internal’ based on the current subcategorization. The actor

of the regent verb is the actor of the lower verb. They take intransitive verb complements. These verbs tend to involve physically handling the PAT complements.

Form	Gloss
buy	pləj
cook	ta.kəh
grab	təŋ.hək
prepare	ti.raʔ
take	pɛ:h
take	ʝəl
use	ka.di:ŋ

Table 71: General intransitive extension verbs

S 410: Internal non-affected transitive extension verb

(a) 'He took a hammer to hammer.'

də:	ʝəl	tər.naʃ	taʃ
3s	take	a hammer	to hammer
1ndex	2ndex	3ndex	4ndex
N	V	N	N
actr	+trns	Acc	-fint
Nom	+xtns	PAT	1[actr]
AGT	+ntm		1[PAT]
	1[actr]		
	1[AGT]		
	3[PAT]		

(b) 'I got my backpack ready to travel.'

ki:	ti.raʔ	ba.lo:	po:k	ju:-lik
1s	prepare	backpack	go	travel
N	V	N	V	V
actr	+trns	Acc	-trns	
Nom	+xtns	PAT	-fint	
AGT	-ntm		1[actr]	
	1[actr]		1[PAT]	
	1[AGT]			
	3[PAT]			

10.4.4.4.3 Internal Affected Transitive Extension Verbs

Internal affected transitive extension verbs relate the PAT of a regent transitive verb with the required PAT of the transitive lower verb through the P2P. The a2a rule

links the actors of the regent and dependent verbs. These verbs take dependent transitive verbs.

S 411: Internal affected transitive extension verb

‘We have rice to eat and clothes to wear.’

he:	vi:	dɔːj	ʔi.ca:	ʔaw	ʔi.ʃip
1p	have	rice	to eat	clothes	to wear
1ndex	2ndex	3ndex	4ndex	5ndex	6ndex
N	V	N	V	N	V
actr	+trns	Acc	-fint	Acc	-fint
Nom	+xtns	PAT	1[actr]	PAT	1[actr]
AGT	+ntm		1[AGT]		1[AGT]
	1[actr]		3[PAT]		3[PAT]
	1[AGT]				
	3[PAT]				

These verbs generally belong to the class of non-finite [ʔi... verbs. Many of these verbs are homophonous with internal non-affected transitive extension verbs.

10.4.4.5 Intransitive Non-Correspondent General Extension Verbs

Intransitive non-correspondent extension verbs require PAT complements in their case frames and a verb complement. This subcategory is subdivided first by the feature [±sttv]. The non-stative subcategory is divided by the feature [±motn], and the stative subcategory, by the feature [±spct].

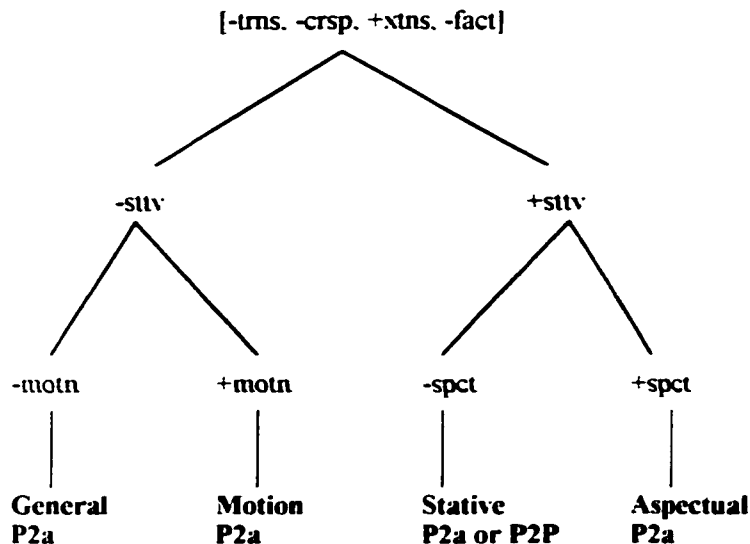


Figure 86: Intransitive non-correspondent extension verbs

Most verbs in this subcategory use the P2a rule to link the index of the regent verb actor with that of the lower verb. Stative verbs cannot be the dependents of the continuing verb *?at*. Stative verbs include aspectual and non-aspectual stative extension verbs. Aspectual extension verbs are prime verbs, meaning that they are always the highest regents and are not preceded by other verbs. Non-aspectual stative extension verbs, which are descriptive, are not prime verbs since they do occur as the dependents of other verbs, specifically, negation extension verbs. Those that take transitive verb complements apply the P2P rule, while those that take intransitive verbs apply the P2a rule. Non-stative verbs include motion and non-motion verbs. Motion verbs denote motion leading to another action. Non-motion verbs cannot be grouped by the previous syntactic or semantic attributes.

10.4.4.5.1 Aspectual Extension Verbs

Aspectual extension verbs make reference to the state of completion of an action. The term ‘aspect’ refers to the state of completion of an action regardless of the actual time of the speech action. Features that split Pacoh aspectual extension verbs into subcategories include $[\pm\text{ngtn}]$, $[\pm\text{real}]$, $[\pm\text{prfc}]$, and $[\pm\text{mprt}]$.

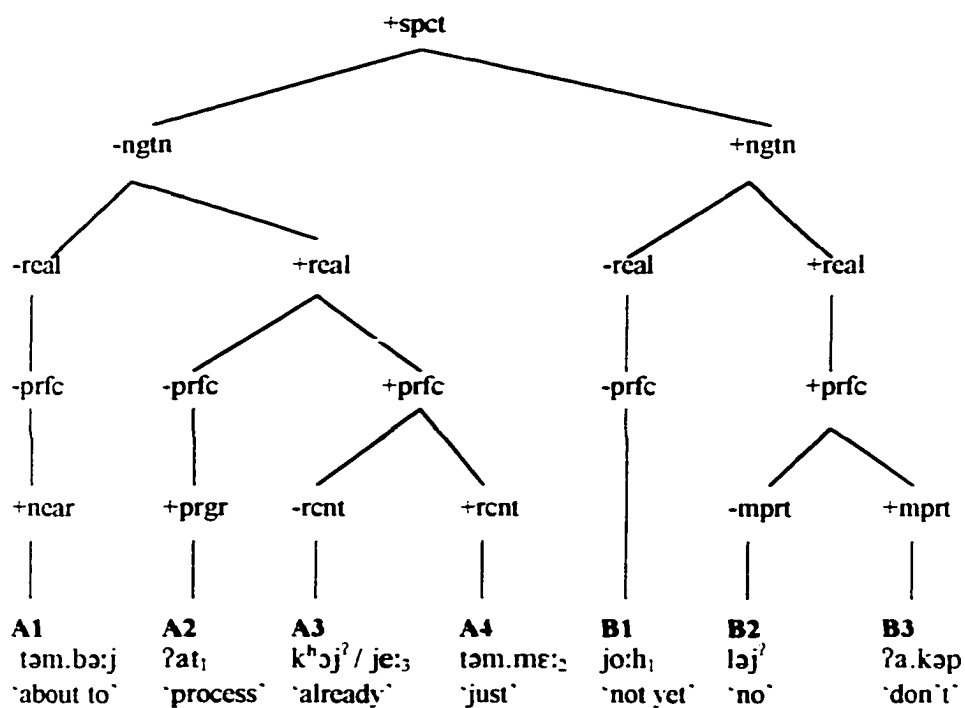


Figure 87: Subcategorization of aspectual extension verbs

In addition, there are the redundant features $[\text{+prgr}]$ and $[\text{+near}]$. Beneath each subcategory type a representative lexical item is presented, though more words are presented in respective subsections.

Negation extension verbs semantically negate their verb complements. Verbs marked $[\text{+real}]$ indicate that their verb complements have begun, while $[\text{-real}]$ verbs indicate that they have not. Real verbs can take perfective aspectual adverbs, while non-

real verbs cannot. The feature [\pm prfc] refers to whether or not the verb complement is in a state of completion. The feature [+rcnt] indicates that the verb complement was completed recently in regards to the speech act. The feature [+mprt] marks an imperative negation verb. The semantic feature [+prgr] marks the progressive verb, a verb that can only take non-stative verb complements. The feature [+near] indicates that an action is about to happen. These verb subcategories are divided in two subsections: negation and non-negation extension verbs. All the subcategories are briefly discussed below.

NEGATION EXTENSION VERBS

Negation extension verbs include three types: imperative, unreal, and general negation extension verbs. The general negation verb most commonly used in all regions where Pacoh is spoken is /əj^ʔ.⁹⁵ Its primary semantic function is negating the truth value of an action.

S 412: General negation extension verb

‘As for crossbows, I don’t know how to make them.’

tu.miəŋ	ki:	ləj ^ʔ	cə:m	ta?
crossbow	Is	no	know	make
Index	2ndex	3ndex	4ndex	5ndex
N	N	V	V	V
them	actr	+xtns	+xtns	+trns
	Nom	+ngtn	-fint	2[actr]
	PAT	2[actr]	2[actr]	2[AGT]
		2[PAT]	2[PAT]	1[them]
				1[PAT]

The real perfective negation verb can take [ʔi... non-finite verbs as complements.

⁹⁵ The form /əj^ʔ is used by some speakers in Quang Tri province.

S 413: Negation extension verb with [ʔi... verb

‘As for that guy, he didn’t eat for three days.’

dɔ:	ʔn.nɛh	lɔjʔ	ʔi.ca:	pɛ:	ʔi.ɲaj
3s	this	no	to eat	3	day
N	P	V	V	N	N
	+crunt	+xtns	-fint		
		+ngtn			

The unreal negation verb expresses non-completion of their verb complements.

S 414: Unreal negation extension verb

‘I don’t have a wife yet.’

ki:	lɔjʔ	vi:	kəm.paj
1s	no	have	wife
N	V	V	N
	+xtns	-fint	
	+ngtn		
	-real		

The imperative negation extension verb can take an overt referential NOMINATIVE noun, though it generally does not.

S 415: Imperative negation extension verb.

‘Don’t hang around with them.’

ʔa.kəp	ca.cuŋ	ʔa.liŋ	ʔa.pe:
don’t	get together	with	3p
V	V	P	N
+xtns			
+ngtn			
+mprt			
m[actr]			

NON-NEGATION EXTENSION VERBS

Non-negation extension verbs include four subcategories: progressive, perfective, recent perfective, and near future non-negation extension verbs. These are all prime [+prim] extension verbs, meaning that they never occur as the dependents of other verbs.

There are three perfective verbs: the general perfectives *k^hɔj^ʔ* and *je₃* and the recent perfective *təm.mε₂*.

S 416: Perfective extension verbs

(a) 'I'm sick.'

ki:	k ^h ɔj ^ʔ	ʔa.ʔaj
1s	already	sick
N	V	V
	+prim	+sttv
	+real	
	+prfc	
	-rcnt	

(b) 'He just arrived.'

dɔ:	təm.mε ₂	to?	ʔə:
3s	just	arrive	already
N	V	V	Adv
	+prim	-trns	+prfc
	+real		
	+prfc		
	+rcnt		

Only verbs marked [+real] can take [+prfc] aspectual adverbs. The progressive extension verb *ʔat* requires non-stative verbs as complements.

S 417: Progressive extension verb

'We're waiting for them.'

hɛ:	ʔat	pən	ŋa:j
1p	(prog.)	wait for	3p
N	V	V	N
	+prim	-trns	
	+xtns	-sttv	
	+prgr		

The unreal perfective *təm.bəj* 'about to' has the semantic feature [+near], indicating that the action encoded by its dependent verb is about to happen.

10.4.4.5.2 General Intransitive Extension Verbs

General intransitive extension verbs include a class of normal verbs that take other verbs as complements and express a wide range of semantic fields and associated selectional restrictions. Such verbs may express ability, intention, or cessation. The table lists just a few sample words from existing data.

Gloss	Form
able	bo:n
beg	ci:m
really	li:
stop	?a.ŋo:
want	?iŋ

Table 72: General intransitive extension verbs

S418 to S420 show some representative examples.

S 418: Abilitative extension verb

'How many bottles of liquor were you able to buy?'

?a.ca:j	bo:n	pləj	?a.li.mə:	be:	?a.riəw
2s	able	buy	how many	bottle	liquor
N	V	V	N	N	N
	-tms				
	+xtns				

S 419: Intention extension verb

'Do you want to buy a car?'

?a.ca:j	?iŋ	pləj	duŋ	?ən
2s	want	buy	car	(yes-no)
N	V	V	N	Sprt
	-tms			
	+xtns			

S 420: Stopping extension verb

'We stopped studying.'

hɛ:	?a.ŋo:	hɔ:k
3p	rest	study
1ndex	2ndex	3ndex
N	V	V
	-tms	
	+xtns	

None of these words are prime, and so they can be the dependents of other verbs.

10.4.4.5.3 Motion Intransitive Extension Verbs

Motion intransitive extension verbs are derivationally related to a class of non-extension verbs. The semantic difference between these two classes of verbs is the

difference of focus on the movement (non-extension) versus the redirected focus on the following action expressed by the verb complement.

S 421: Contrasting extension and non-extension motion verbs

(a) 'He ran quickly.'

dɔ: la.luh ?a.ɲa:ʔ
 3s run quick
 N V Adv
 -trns
 -xtns
 +motn

(b) 'He ran to meet us.'

dɔ: la.luh təm.muɪ hɛ:
 3s run meet 3p
 N V V N
 -trns
 +xtns
 +motn

The verbs in this class express physical movement with the intent to perform another action.

Gloss	Form
ascend	ʃər
descend	ʃjər
go	pə:k
run	la.luh

Table 73: Motion Intransitive extension verbs

They do not take manner adverbs and the lower verbs are not negatable. These motion verbs include both locative and non-locative counterparts. S422 contains a non-locative verb since it has no LOC complement. S423 does have a LOC noun in addition to its verb complement.

S 422: Motion extension verb with multiple verb complements

'We went down to bathe and fish.'

hɛ: ʃjər hɔ:m da:ʔ ?a.ba:ʃ bʉəjʔ
 3p descend bathe water fish for fish
 1ndex 2ndex 3ndex 4ndex 5ndex 6ndex
 N V V N V N
 -trns
 -lctv
 +xtns
 +motn
 3[prdc]
 5[prdc]

S 423: Motion extension verb with verb complement

'He climbed the tree and got some fruit.'

do:	ʃər	ʔa.lɔ:ŋ	ʝəl	ku.laj
3s	climb	tree	take	fruit
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	N	V	N
actr	-trns	-lctn	+trns	Acc
Nom	+xtns	Acc	-fint	PAT
PAT	+lctv	LOC	1[actr]	
	+bare		1[AGT]	
	+motn		5[PAT]	
	1[actr]			
	1[PAT]			
	3[LOC]			

10.4.4.5.4 Stative General Extension Verbs

Stative general extension verbs are redundantly marked with the feature [+degr], meaning that they can take intensifying adverbs. This category is divided by the feature [±potn].

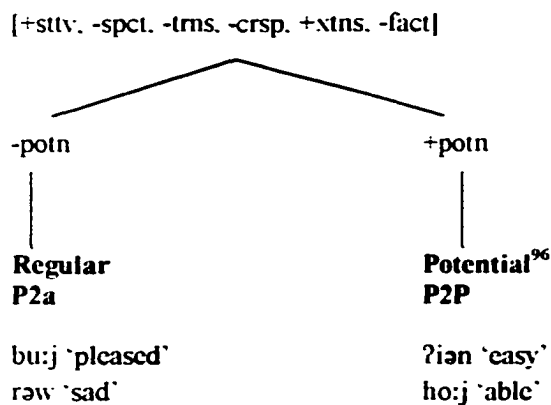


Figure 88: Subcategorization of stative extension verbs

Non-potential stative extension verbs use the P2a rule to link the actor of the upper verb with the required actor of the lower verb.

* The term 'potential' in relation to this kind of chaining was used by Pagotto 1985a.

S 424: Stative intransitive extension verb

‘I’m very pleased to meet you.’

ki:	bu:j	li:	təm.muɪ	ʔa.ca:j
1s	happy	very	meet	2s
1ndex	2ndex	3ndex	4ndex	5ndex
N	V	Adv	V	N
actr	-trns	-ntsf	-trns	Acc
Nom	+xtns		-fint	PAT
PAT	-fact		l[actr]	
	+sttv		l[AGT]	
	l[actr]			
	l[PAT]			

The complements of these verbs can be either transitive or intransitive.

Potential verbs in Pacoh use the P2P rule to associate the NOMINATIVE PAT of the upper verb with the ACCUSATIVE PAT of the lower verb. Their verb complements are always transitive, and specifically they often take transitive [ʔi... non-finite verbs as complements, as in S425a and b.

S 425: Potential stative extension verb

(a) ‘Bearskin is wearable.’

ʔŋ.kar-ʔa.pən	ho:j	ʔi.ʃip
bearskin	able	to wear
N	V	V
Nom	-trns	+trns
PAT	+sttv	-fint
	l[PAT]	m[actr]
		m[AGT]
		l[PAT]

(b) ‘This wood is easy to saw.’

ʔa.lɔ:ŋ	ʔn.nɛh	ʔiən	ʔi.kiə
wood	this	easy	to saw
N	N	V	V
actr	+dmns	+xtns	+trns
Nom		+sttv	-fint
PAT		+potn	m[actr]
		l[PAT]	m[AGT]
			l[PAT]

11. WORD-FORMATION STRATEGIES IN PACOH

This chapter describes categories of word-formation strategies (WFS hereafter) in Pacoh.⁹⁷ The primary sources on Pacoh word-formation patterns include articles by R. Watson (1966), S. Watson (1964 and 1966), by Nguyễn Văn Lợi, Đoàn Văn Phúc, and Phan Xuân Thành (1986, hereafter abbreviated as ND&P). S. Watson described Pacoh pronoun paradigms and a variety of noun and verb word forms. R. Watson dealt with Pacoh reduplication. ND&P also describe some of those word-form patterns and even discuss a few not noted in the Watsons' work (specifically, the formation of multitude verbs). The first subsection in this chapter presents the framework for the analysis and presentation of word-formation processes in Pacoh. Following subsections describe WFSs, arranged by the phonological process involved (reduplication and clause-incorporation) as well as part of speech (adverbs, nouns and verbs). The final subsection summarizes Pacoh WFSs.

11.1 THE LEXICASE/WORD-FORMATION-STRATEGY APPROACH

Rather than describing Pacoh 'morphology', this grammar uses a word-based approach developed primarily by Starosta (1999 and forthcoming)⁹⁸ that uses aspects of the Lexicase theory. WFSs pertain to patterns of phonological shapes and associated syntactic and semantic features shared by groups of words. In the Lexicase view, words are stored in the mental lexicon complete with phonetic, syntactic, and semantic

⁹⁷ The term 'word-formation strategies' is used rather than 'morphology' in accordance with the seamless approach to word-formation, as discussed in section 1.3.4.

⁹⁸ This seamless approach has been in development recently not only by Starosta but also, in a similar approach, by Singh (for example, Singh and Dasgupta 1999) and other colleagues.

specifications. New words can be formed analogically. Words formed in this way share, with other words in the lexicon, some aspect of their phonological shapes as well as syntactic, semantic, or both kinds of information. In the Lexicase view, words are considered to be seamless, having no internal grammatical boundaries or hierarchical structure. Since Lexicase makes no use of multiple levels of syntactic representation or processes of change among these levels, words that are derivationally related through shared phonological shape are either already in the mental lexicon and are accessed, not formed, or, if a new word (i.e., one not already in the mental lexicon) is used, it is simply in accord with WFSs available in the language faculty.

WFSs are considered analogical formulas involving pairs of words, allowing for the creation and interpretation of other words. The formalization of WFSs, taken from Starosta (forthcoming), is as shown in Figure 89.

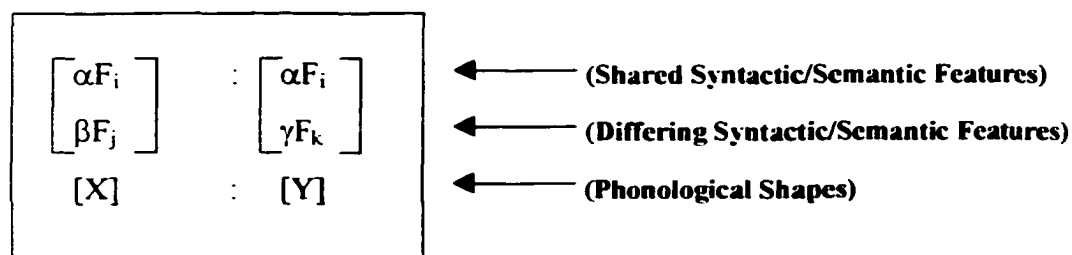


Figure 89: Word-formation strategy formula

In these analogical formulas, the first row shows shared syntactic and/or semantic features, the second row shows differing syntactic and/or semantic features, and the third row contains the phonological material shared by the words with indication of which portion of the words are differ phonologically. The position of the shared phonological forms are indicated by the position of the brackets (e.g., [pa... indicates that the shared

phonological portion is to the right of the presyllable). Synchronic WFSs are not directional. They simply demonstrate that an analogical pattern already exists, although new words could be analogically formed in either direction.

The way to demonstrate these WFS formulas is through analogical sets of words.

The format used for presentation of WFS analogies is as shown in Figure 90.

aAb	:	cAd	::
[αF _i]		[βF _j]	
aBb	:	cBd	::
[αF _i]		[βF _j]	
aCb	:	cCd	
[αF _i]		[βF _j]	

Figure 90: Presentation of analogical sets

The phonological forms are shown above their syntactic and semantic features.

For phonological material shared by groups of words, the term ‘substring’ is used, often with specific reference to position in a word, such as ‘word-initial substrings’ or ‘word-internal substrings’. They can also be called ‘constants’ or ‘invariants’, referring to the fact that these forms maintain the same overall phonological shape, though they may, through phonological conditioning, have different phonetic realizations. Though ‘morphs’ are often indicated through the use of hyphens in linguistic literature, hyphens here are only for phonological purposes, to mark boundaries of phonological words (not syntactic words or substrings, see section 2.1 on transcription), and periods mark syllable boundaries. Phonological constants and their position in words are indicated with brackets and three periods (in text). For example, [pa..., where the bracket marks the word-initial boundary and the periods indicate where the phonological variants occur.

11.2 TYPES OF PACOH WORD-FORMATION STRATEGIES

This section describes Pacoh WFSs, including those that create adverbs, nouns, and verbs and also WFSs that involve phonological reduplication and clause-incorporation.

11.2.1 Noun Formation Strategies

Nouns created through WFSs in Pacoh include common nouns, semantically specialized and generalized nouns (so-called lexical compounds), pronominal nouns, time word nouns, and kinship and animal nouns. In many of these WFSs, phonological variation in the resulting words demonstrates the erratic behavior of derivational processes in word formation.

11.2.1.1 Common Noun Word-Formation

Pacoh has a class of bisyllabic nouns which are derivationally related to verbs and have the constant ...an... at their syllable junctures, though this phonological constant shows a good deal of variation, as can be seen from the examples in Table 74.

Verb	Noun
ka.tip 'to cork'	kən.tip 'cork'
ta.pa? 'to make fish sauce'	təm.pa? 'fish sauce'
ta.ŋih 'to breathe'	tər.ŋih 'breath'
kar 'to drill a hole'	ka.na:r 'hole-driller'
(no counterpart)	təm.bə:c 'pinch'
kaj 'to plow'	ka.naj 'plow'
kla? 'to prop'	kəl.la:? 'prop'
kuəj 'to scoop up with one's hands'	ka.nuəj' 'two handfuls'

Table 74: Common noun word-formation

The consonants in these substrings are usually nasals, particularly [n], but can be the liquids [l] and [r] as well. As codas in presyllables, the nasals always match the place of

articulation of the onset of the following syllable (see section 2.4.4.2 on nasal assimilation). The vowel [a] is always schwa in closed presyllables. S. Watson (1966:24-27) describes some of the phonological patternings, which appear to differ according to the syllable onset (e.g., single consonant, consonant cluster, phoneme, etc.). [l] or [r] occurs when, historically, their derivational source had those consonants as onsets, whereas a nasal that matched the place of articulation of the onset occurred in other cases. However, those are tendencies only, and exceptions are not uncommon.

S426 contains a sentence with the two words derivationally related by this WFS, *kɔh* 'to cut' and *kən.nɔh* 'a cutting tool'.

S 426: Derivationally related verb and noun

'Take the cutter and cut the fish meat.'

pɛ:h	kən.nɔh	kɔh	ʃɛ:c-buəjʔ
take	cutter	cut	fish meat
V	N	V	N

An analogical set is given in S427.

S 427: Analogical set for [+nstr]

ta:ʃ 'to hammer'	:	tər.na:ʃ	::
'to hammer'		'a hammer'	
V		N	
klaʔ 'to prop'	:	kəl.laʔ	
'to prop'		'something that props'	
V		N	

This analogical pattern is evidence for WFS-1, where ...an... in the phonetic part of the rule represents a basic phonological shape, which can be phonologically conditioned.

WFS-1: Verb-derived noun

$$\begin{array}{ccc} \left[\begin{array}{c} \alpha F_1 \\ V \end{array} \right] & : & \left[\begin{array}{c} \alpha F_1 \\ N \end{array} \right] \\ [CX] & : & [CanX] \end{array}$$

A verb corresponds to nouns with a word-medial sonorant, which can be a nasal or a liquid. On the left side of analogy, there is the initial consonant (C) and the rest of the word, whether one or two syllables. The right side of the analogy shows the ...an... between these two elements. This rule is simplified since this word-formation strategy has resulted in several slightly different phonological realizations, depending on whether a monosyllabic or bisyllabic word is involved.

11.2.1.2 Kinship and Animal Noun Word-Formation

Most Pacoh kinship terms share the word-initial substring [ʔa....]⁹⁹ However, there is no analogical paradigm with forms not having the [ʔa... substring. The process of developing these kinship terms has been almost entirely fossilized. Table 75, which contains a list of Pacoh kinship terms, is representative, not exhaustive. One example of the formerly active WFS is in the word *miəŋ-moʔ* ‘older siblings’, in which there are phonological substrings that parallel ‘older brother’ and ‘older sister’ in Table 75.

⁹⁹ This is also the case for other Katuic languages, such as Bru, Katu, and Taoih, as described in X. H. Nguyễn (1998).

Gloss	Form
brother. older	?a.miəŋ
child	?a.kaj
daughter	?a.kaj-?a.kan
father	?a.?am
grandmother	?a.ka:ʔ
mother	?a.?i:
sibling. younger	?a.?e:m
sibling. older	miəŋ-məʔ
sister. older	?a.mə:ʔ
son	?a.kaj-kə:ŋ
uncle. older	?m.pi:t
uncle. younger	?a.ŋi:

Table 75: Pacoh kinship terms

A noticeable number of Pacoh words for animals also have the word-initial [ʔa... form, including a large number of terms for animals common in the Pacoh environment. Table 76 containing examples is not exhaustive since about four dozen lexical entries for animals with [ʔa... are found in ND&P's Pacoh-Vietnamese dictionary.

Gloss	Form
animal	?a.?ət
bee (mason)	?a.ŋi:t-ŋə:t
bird	?a.çe:ʔ
cat	?a.məʔ
dog	?a.cə:
duck	?a.ta:
elephant	?a.ciəŋ
frog	?a.kuət
monkey	?a.djəʃ
mouse	?a.bił
pig	?a.li:k
spider	?a.piəŋ

Table 76: Pacoh terms for animals¹⁰⁰

¹⁰⁰ The Pacoh forms for 'dog' and 'bird' are Mon-Khmer cognates. The Pacoh form for 'elephant' is apparently a Tai-Kadai loanword.

Hypothetically, there could have been a WFS strategy, now fossilized, that was involved in the creation of animal terms.

11.2.1.3 Pronominal Noun Word-Formation

Pacoh pronominal nouns that are related by WFSs include pronoun and demonstrative pronominal nouns. The Pacoh pronoun system (also discussed in section 7.6.2.3) is systematic, having three distinctions of person and a three-way distinction of number, thereby creating a basic nine-pronoun set. This basic set of nine pronouns is tripled by the addition of the dative and possessive sets.

Number	Person	General	Dative	Possessive
<i>Singular</i>	1st	ki:	?a.ki:	?ŋ.ki:
	2nd	maj	?a.maj	?m.maj
	3rd	dɔ:	?a.dɔ:	?n.dɔ:
<i>Dual-Plural</i>	1st	ŋaŋ	?a.ŋaŋ	?ŋ.ŋaŋ
	2nd	?i.ŋa:	?a.dɔ:-?i.ŋa:	?n.dɔ:-?i.ŋa:
	3rd	?aŋa:	?a.dɔ:-?a.ŋa:	?n.dɔ:-?a.ŋa:
<i>Plural</i>	1st	hɛ:	?a.hɛ:	?ŋ.hɛ:
	2nd	?i.pɛ:	?a.dɔ:-?i.pɛ:	?n.dɔ:-?i.pɛ:
	3rd	?a.pɛ: / ŋa:j	?a.dɔ:-?a.pɛ: / ?a.ŋa:j	?n.dɔ:-?a.pɛ: / ?ŋ.ŋa:j

Table 77: Pacoh pronouns

The bisyllabic pronouns have some notable patterns of word shape related to plurality and person. These include (a) [?i... corresponding to 2nd person non-singular, (b) [?a... to third-person non-singular, (c) ...ŋa:] for dual 2nd and 3rd person, and (d) ...pɛ:] for plural 2nd and 3rd person.

The dative and possessive pronoun sets can be accounted for through two WFSs. First, the dative-pronoun formation WFS-2 generates words that share the presyllabic [?a... form and the feature [+datv].

WFS-2: Dative-pronoun formation

N +prnn -datv	:	N +prnn +datv
|	:	[?a

Second, the possessive-pronoun formation WF-3 generates words that share the presyllabic homorganic nasal (indicated by [?N] in the phonological line of the WFS) and the feature [+pssn].

WFS-3: Possessive-pronoun formation

N +prnn -pssn	:	N +prnn +pssn
|	:	[?N

Pacoh demonstrative pronominal nouns (section 7.6.2.1) have similar overall prosodic and phonological shapes. All have homorganic nasal presyllables and final [h] consonants.

Distance	Fore/Higher	Aft/Lower	Beside
Proximal	?n.nɛh		
Medial	?ŋ.koh		
	?n.tih	?n.tɔh	?n.trah
Distal	?n.ti:h	?n.tɔ:h	?n.tra:h

Table 78: Pacoh demonstrative pronominal nouns

Medial and distal demonstratives differ in vowel length, a fact that can be accounted for by a WFS. WFS-4 states that a short vowel corresponds to the feature [-dstl], while a long vowel corresponds to the feature [+dstl]. Since synchronic WFSs are not directional, this rule simply accounts for the relationship between these two types of demonstrative pronominal nouns.

WFS-4: Medial-distal

$$\begin{array}{c} \left[\begin{array}{c} N \\ +dmns \\ -dstl \end{array} \right] \\ [?n.t[V]h] \end{array} : \begin{array}{c} \left[\begin{array}{c} N \\ +dmns \\ +dstl \end{array} \right] \\ [?n.t[V:]h] \end{array}$$

This rule does not apply to the forms *?n.nɛh* and *?ŋ.koh*, both of which have short vowels and are [-dstl] and do not have distal counterparts, thereby identifying a lexical gap in the paradigm. The correspondence between length and distance in demonstratives is even more complex in the closely related language, Bru (cf., Hoàng V. M. 1997).

11.2.1.4 So-Called Lexical Compounds (Noun-Noun)

The issue of ‘lexical compounds’ has been divisive in word-formation research (Anderson 1992, Starosta forthcoming). In the Lexicase view, ‘compounds’ (i.e., words composed of two or more words) do not exist, only words, though these so-called ‘compounds’ are formed through WFSs that utilize phonological material etymologically related to other words (e.g., ‘store’ in ‘bookstore’, ‘drugstore’, and ‘grocery store’). Considering all noun-noun sequences to be syntactic constructions rather than single lexical items causes difficulties in semantic compositionality and case analysis (see section 7.3.2.2 for discussion on the issue of so-called lexical compounds versus noun phrases) and misses cross-linguistic generalizations about the way languages form single lexical items with phonetic material from two nouns.¹⁰¹ Consider the forms in S428.

¹⁰¹ As discussed in Ng and Starosta (1996) on this matter in discussing Chinese word formation.

S 428: Analogical set for semantically specified nouns

tər.haw	:	tər.haw-juən	::
'medicine'		'Vietnamese medicine'	
duŋ 'house'	:	duŋ-juən	
'house'		'Vietnamese house'	

The phonological string /juən/ denotes 'Vietnamese', and in fact, there is a noun /juən/ that means 'Vietnam'. However, no words can be inserted before /juən/ in these forms, and the noun /juən/ does not mean 'Vietnamese'. This is an example of word-formation in which all of the phonetic material involved is derivationally related to nouns. WFS-6 involves a phonological constant to the right.

WFS-6: Noun-Noun word formation

$\left[\begin{array}{c} N \\ \beta F_1 \end{array} \right]$	:	$\left[ \begin{array}{c} N \\ \gamma F_k \end{array} \right]$
[X]	:	[XY]

The word on the left side of the analogy can be any common noun.

Semantically generalized nouns, having the semantic features [+gnrl], are formed by a WFS that takes as its phonological material two or more nouns that have overlapping semantic fields.

S 429: Analogical set for generalized noun

duŋ	vɛ:l	:	duŋ-vɛ:l	::
'house'	'village'		'society'	
ʔa.ʔi:	ʔa.ʔam	:	ʔa.ʔi:-ʔa.ʔam	
'mother'	'father'		'parents'	

This WFS can work with more than two words for the analogical input.¹⁰²

¹⁰² This proposal differs from the current Lexibase view on WFSs.

S 430: Analogical set for generalized nouns

?n.truəj	?a.cə:	?a.li:k	:	?n.truəj-?a.cə:-?a.li:k	::
'chicken'	'dog'	'pig'		'domestic animals'	
N	N	N		N	
pra?	ti.riə?	?a.kaj	:	pra?-ti.riə?-?a.kaj	
'money'	'buffalo'	'children'		'wealth'	

The above analogical sets demonstrate WFS-14.

WFS-14: Generalized noun formation

$\left[\begin{array}{c} N \\ -gnrl \end{array} \right]$	:	$\left[ \begin{array}{c} N \\ +gnrl \end{array} \right]$
[X]	:	[Y] ¹⁰³

This set includes a pair that has as a correspondent form three nouns. These nouns also provide phonological material used in the clause-incorporation WFS discussed in subsection 11.2.4.1.

11.2.1.5 Time Word Word-Formation

Pacoh has an explicit system of referring to the past or future by number of days or years, from one up through ten, as listed in Table 79.¹⁰⁴

¹⁰³ The 'X' and 'Y' are used to overgeneralize somewhat. At this point in the development of the seamless approach, formalization would require arbitrarily selecting a portion of these words as the constant, when there are no phonological paradigms on which such an analogy could be made.

¹⁰⁴ Similar patterns are seen in the closely related and geographically neighboring language, Bru (cf. V. M. Hoàng 1997).

GLOSS	FORM	GLOSS	FORM
today	ʔi.ŋaj-ki: / ʔi.ŋaj-ʔŋ.koh	this year	ku.mə:-ʔn.nəh
yesterday	ʔi.ŋaj-ʔi.no:	last year	ku.mə:-ʔi.no:
2 days ago	ʔi.ŋaj-ʔn.tro:	2 years ago	ku.mə:-ʔn.tra:
3 days ago	ʔi.ŋaj-ʔn.trɛ:	3 years ago	ku.mə:-ʔn.trɛ:
4 days ago	ʔi.ŋaj-ʔn.trɯən	4 years ago	ku.mə:-ʔn.trɯən
5 days ago	ʔi.ŋaj-ʔn.tro:ŋ	5 years ago	ku.mə:-ʔn.tro:ŋ
6 days ago	ʔi.ŋaj-ʔn.trat	6 years ago	ku.mə:-ʔn.trat
7 days ago	ʔi.ŋaj-ʔn.trɔ:l	7 years ago	ku.mə:-ʔn.trɔ:l
8 days ago	ʔi.ŋaj-ʔn.trɔ:l	8 years ago	ku.mə:-ʔn.trɔ:l
9 days ago	ʔi.ŋaj-ʔn.trjəf	9 years ago	ku.mə:-ʔn.trjəf
10 days ago	ʔi.ŋaj-ʔn.trit	10 years ago	ku.mə:-ʔn.trit
tomorrow	ʔi.ŋaj-pər.no:	next year	ku.mə:-ʔn.nəh
2 days later	ʔi.ŋaj-pər.ra	2 years later	ku.mə:-ku.mə:
3 days later	ʔi.ŋaj-pər.rɛ:	3 years later	ku.mə:-ku.mɛ:
4 days later	ʔi.ŋaj-pər.rɯən	4 years later	ku.mə:-ku.mɯən
5 days later	ʔi.ŋaj-pər.ro:ŋ	5 years later	ku.mə:-ku.mo:ŋ
6 days later	ʔi.ŋaj-pər.rat	6 years later	ku.mə:-ku.mat
7 days later	ʔi.ŋaj-pər.rɔ:l	7 years later	ku.mə:-ku.mɔ:l
8 days later	ʔi.ŋaj-pər.rɔ:l	8 years later	ku.mə:-ku.mɔ:l
9 days later	ʔi.ŋaj-pər.rjəf	9 years later	ku.mə:-ku.mjəf
10 days later	ʔi.ŋaj-pər.rit	10 years later	ku.mə:-ku.mit

Table 79: Pacoh time reference paradigm

R. Watson (1976) and ND&P both dealt with these sets of time nouns. Watson transcribed the Pacoh word for ‘year’ as /ka.mə:/, whereas ND&P and my own field data have the transcription /ku.mə:/, which could represent regional differences. For each type of time noun, the phonological constants are in word-initial substrings, and the variants are in the word-final parts. These words show analogical sets for four WFSs: (a) previous-day word-formation, (b) previous-year word-formation, (c) coming-day word-formation, and (d) coming-year word-formation. These WFSs apply with complete

regularity to those time nouns referring to three or more, but vary phonologically somewhat for reference to two years or days.

Previous-day time nouns share the word-initial substring [ʔi.ŋaj-ʔn.tr... and share semantic reference to days and the past. The word-final part consists of material that resembles Pacoh numeral nouns. These derivationally related sets, though both nouns, differ in the feature [±nmrl], as shown in S431. The forms on the left side of the analogy are semantically specified for number, while those on the right side are specified for number, past, and day.

S 431: Analogical set for previous-day time nouns

[pɥən]	:	[ʔi.ŋaj-pər.rɥən]::
'four'		'four days ago'
N		N
+nmrl		-nmrl
+four		+four
-time		+time
		+past
		+day
[ti.kiəʃ]	:	[ʔi.ŋaj-pər.riəʃ]
'nine'		'nine days ago'
N		N
+nmrl		-nmrl
+nine		+nine
-time		+time
		+past
		+day

The above analogical set demonstrates WFS-7.

WFS-7: Previous-day time-noun word-formation

$\left[\begin{array}{c} N \\ +nmbr \\ +nmrl \\ -time \end{array} \right]$	:	$\left[ \begin{array}{c} N \\ +nmbr \\ -nmrl \\ +time \\ +past \\ +day \end{array} \right]$
[	:	[ʔi.ŋaj-ʔn.tr

Previous-year time nouns share the word-initial substring [ku.mə:-ʔn.tr... and share semantic reference to past years. The word-final part consists of material that resembles Pacoh numeral nouns. These derivationally related sets, though both nouns, differ in the feature [\pm nmrl], as shown in S432. The forms on the left side of the analogy are semantically specified for number, while those on the right side are specified for number, past, and year.

S 432: Analogical set for previous-year time nouns

[pʉəŋ]	:	[ku.mə:-ʔn.trʉəŋ]	::
'four'		'four years ago'	
N		N	
+nmrl		-nmrl	
+four		+four	
-time		+time	
		+past	
		+year	
[ti.kiəʃ]	:	[ku.mə:-pəŋ.riəʃ]	
'nine'		'nine years ago'	
N		N	
+nmrl		-nmrl	
+nine		+nine	
-time		+time	
		+past	
		+year	

The above analogical set demonstrates WFS-8.

WFS-8: Previous-year time-noun word-formation

<table border="1"> <tr><td>N</td></tr> <tr><td>+nmbr</td></tr> <tr><td>+nmrl</td></tr> <tr><td>-time</td></tr> </table>	N	+nmbr	+nmrl	-time	:	<table border="1"> <tr><td>N</td></tr> <tr><td>+nmbr</td></tr> <tr><td>-nmrl</td></tr> <tr><td>+time</td></tr> <tr><td>+past</td></tr> <tr><td>+year</td></tr> </table>	N	+nmbr	-nmrl	+time	+past	+year
N												
+nmbr												
+nmrl												
-time												
N												
+nmbr												
-nmrl												
+time												
+past												
+year												
	:	[ku.mə:-ʔn.tr										

Coming-day time nouns share the word-initial substring [ʔi.ŋaj-pər... and share semantic reference to days in the future. The word-final part consists of material that resembles Pacoh numeral nouns. These derivationally related sets, though both nouns, differ in the feature [±nmrl], as shown in S433. The forms on the left side of the analogy are semantically specified for number, while those on the right side are specified for number, future, and day.

S 433: Analogical set for coming-day time nouns

[pɸəŋ]	:	[ʔi.ŋaj-pər.ɸəŋ]	::
'four'		'four days from now'	
N		N	
+nmrl		-nmrl	
+four		+four	
-time		+time	
		+futr	
		+day	
[ti.kiəŋ]	:	[ʔi.ŋaj-pər.riəŋ]	
'nine'		'nine days from now'	
N		N	
+nmrl		-nmrl	
+nine		+nine	
-time		+time	
		+futr	
		+day	

The above analogical set demonstrates WFS-9.

WFS-9: Coming-day time-noun word-formation

N +nubr +nmrl -time	:	N +nubr -nmrl +time +futr +day
[	:	[ʔi.ŋaj-ʔn.tr

Coming-year time nouns share the word-initial substring [ku.mə:-ku.m... and share semantic reference to years in the future. The word-final part consists of material

that resembles Pacoh numeral nouns. These derivationally related sets, though both nouns, differ in the feature [\pm nmrl], as shown in S434. The forms on the left side of the analogy are semantically specified for number, while those on the right side are specified for number, future, and year.

S 434: Analogical set for coming-year time nouns

[pɥəŋ]	:	[ku.mɔ:-ku.mɥəŋ]	::
'four'		'four years from now'	
N		N	
+nmrl		-nmrl	
+four		+four	
-time		+time	
		+futr	
		+year	
[ti.kiəŋ]	:	[ʔi.ŋaj-ku.miəŋ]	
'nine'		'nine years from now'	
N		N	
+nmrl		-nmrl	
+nine		+nine	
-time		+time	
		+futr	
		+year	

The above analogical set demonstrates WFS-10.

WFS-10: Previous-year time-noun word-formation

N +nmbr +nmrl -time	:	N +nmbr -nmrl +time +past +year	
[	:	[ku.mɔ:-ku.m	

11.2.2 Verb Formation Strategies

This section deals with verb-forming WFSs in Pacoh. S. Watson (1966) described nine verb morphemes and their assorted allomorphs (to use her terminology). The primary WFSs tested during my own fieldwork included those that form causative

verbs, reciprocal verbs, and continuative verbs. Watson also described what she called resultant-state, involuntary, and completive verbs, forms that did not occur in my data and have not been included in this grammar.

11.2.2.1 *Causative Verbs*

What are called ‘causative verbs’ by S. Watson form a verb category that is also seen in many Mon-Khmer languages.¹⁰⁵ These verbs tend to share the word-initial substring [pa... and the semantic function of causing their PAT nouns to perform an action. The primary feature that words in this class share besides the form [pa... is having a general semantic causative meaning, marked by the feature [+cstv]. Table 80 contains several examples of Pacoh causative verbs. See S. Watson (1966) for a list of these verbs in Pacoh.

Gloss	Form
to cause to answer	pa.klɔw
to cause to bathe	ta.hɔ:m
to cause to drink	pa.ŋɔ:jʰ
to cause to eat	pa.ca:
to cause to know	pa.cɔ:m
to cause to learn	pa.hɔ:k
to cause to play	pa.klɔn
to cause to play	pa.ʔa:k
to cause to rise	ʔa.fɔr
to cause to sniff	pa.hɛt

Table 80: Pacoh causative verbs

Each of these verbs has a derivationally related non-causative verb. S435 contains an analogical set of non-causative verbs and their causative verb counterparts.

¹⁰⁵ For descriptions of Mon-Khmer causative verbs and related word forms, see Costello 1966a on Katu, Hoàng and Tạ 1998 on Bru, Jenner and Pou 1982 on Khmer, H. H. Nguyễn and V. L. Nguyễn 1998 on Katu, and V. L. Nguyễn 1993 on Ruc.

S 435: Analogical set for [+cstv]

kap 'to bite'	:	pa.kap 'to cause to bite'	::
V		V	
-cstv		+cstv	
-sttv			
bi? 'to sleep'	:	pa.bi? 'to cause to sleep'	
V		V	
-cstv		+cstv	
-sttv			

The input can be any non-causative active verb, however, most verbs that occur in the left side of the paradigm are monosyllabic (see section 11.3 for discussion on the phonological types of words in this WFS).

WFS-11: Causative verb word-formation

$\left[\begin{array}{c} V \\ -cstv \end{array} \right]$	:	$\left[ \begin{array}{c} V \\ +cstv \end{array} \right]$
[	:	[pa

WFS-11 refers only to the semantic feature [+cstv]. Pacoh causative verbs are seen in a few different verb subcategories. The phonological 'constant', whether phonologically conditioned or not, does have a number of phonological variants. In addition to the initial [p], some have initial [t] and [ʔ], demonstrating the irregularity of lexical derivations.

Pacoh causative verbs cross over several verb subcategories, as shown in Table 81. The subcategorizing features are listed across the top. Causative non-fact extension correspondent verbs take COR noun complements and a non-finite verb complement. The use of dative pronouns and dative relator nouns clearly marks which noun bears the COR case. Causative extension verbs have transparent semantic selectional restrictions in regards to their verb regents. They generally require their derivationally related verb to be used as the verb complement, as in S436.

Category	±trns	±crsp	±lctv	±xtns
Extension correspondent verb	-	+	-	+
Simple transitive verb	+	-	-	-
Transitive correspondent verb	+	+	-	-
Transitive locative verb	+	-	+	-
Transitive extension verb	+	-	-	+

Table 81: Categories of Pacoh causative verbs

S 436: Causative extension correspondent verb

'I made him eat the rice.'

ki:	pa.ca:	?a.dɔ:	ca:	dɔ:j
1s	feed	to-3s	eat	rice
1index	2index	3index	4index	5index
N	V	N	V	N
Nom	-trns	+prn	+trns	
PAT	+crsp	+datv	-fint	
	+xtns	COR		
	1[PAT]			
	3[+datv]			
	3[COR]			
	4[prdc]			

Causative simple transitive verbs only take AGT and PAT complements.

S 437: Causative simple transitive verb

'I had my friend drink.'

ki:	pa.ŋɔ:j ²	jəw
1s	make-drink	friend
N	V	N
Nom	+trns	Acc
AGT	1[AGT]	PAT
	3[PAT]	

Causative transitive correspondent verbs take AGT, PAT, and COR complements. They often take dative pronouns or dative relator nouns as COR complements.

S 438: Causative transitive correspondent verb

'I taught the lesson to him.'

ki:	pa.cɔ:m	ba:j	?a.dɔ:
1s	teach	lesson	to-3s
N	V	N	N
Nom	+trns	Acc	+datv
AGT	+crsp	PAT	Dat
	+cstv		COR

11.2.2.2 Non-Finite Verbs

This section deals with two WFSs that involve non-finite verbs. S. Watson (1964:88) noted the occurrence of [ʔu... verbs, which, she stated, substitutes for the 3rd person pronoun, creating what appear to be root non-finite verbs.

S 439: [ʔu... verb

'He said he has only one brother.'

ʔu.to:ŋ	ni:m	məh	naʔ	ʔa.ca:j
3s-say	only	one	(unit)	brother
1index	2index	3index	4index	5index
V	V	N	N	N
+root	+xtns	+nmrl	+unit	-unit
-fint	3[prdc]	prdc		
-spkr	+cxst			
-adrs				
m[actr]				

Verbs having the [ʔu... presyllable are always root verbs and can occur with any verb.

These verbs are inherently marked [-spkr] and [-adrs] since they have 3rd person reference. The analogical set in S440 demonstrates WFS-21.

S 440: Analogical set for [ʔu... verb

po:k 'go'	:	ʔu.po:k 'He goes'	::
V		V	
		-fint	
		-spkr	
		-adrs	
dɔ:k 'read'	:	ʔu.dɔ:k 'He reads'	
		-fint	
		-spkr	
		-adrs	

WFS-21: Non-finite verb formation

[	V	]	:	[	V]
	βF:				-fint	
[			:		[?u	
					-spkr	
					-adrs	

Pacoh has a class of non-finite verbs that share the word-initial form [?i... (10.2.7 deals with their syntactic properties). S. Watson (1966:16) considered such substrings as indicators of indefinite person, while R. Watson, in reference to their appearance in 'main verbs', termed these phonological substrings 'subject fillers' (1966:168). It is considered a substring rather than a distinct word since the [?i... presyllable is never separated from its associated verb, and these [?i... verbs are often dependents of verbs or nouns. In Lexicase, non-finite verbs cannot take referential NOMINATIVE noun dependents, as is the case for these verbs. These non-finite verbs consist of two syntactic types: root non-finite verbs and non-root non-finite verbs. Root verbs can stand alone like finite clauses (e.g., 'subject' and verb) as complete sentences. Their required 'subjects' are recovered from the discourse context. Non-root non-finite verbs occur as dependents of extension verbs and sometimes nouns. Their required case-related complements are recovered through chaining rules. Both subclasses are non-finite and so can be created by a single WFS. S441 shows an analogical set, which demonstrates WFS-12.

S 441: Analogical set for [-fint]

co:m 'know'	:	?i.co:m 'to know'	::
V		V	
		-fint	
ca: 'cat'	:	?i.ca: 'to cat'	
		-fint	

WFS-12: Non-finite verb formation

V	:	V
βF _j		-fint
[	:	[?i

Root non-finite verbs may indicate an action with an indefinite noun reference (c.f., English ‘one’ or ‘you’), for example in discussing general truths or suggesting ways of doing something.

S 442: [?i... verb as sentential regent

‘One makes a wooden tube.’

?i.ta?	pəl.lo:	?a.lə:ŋ
one-make	tube	wood
1ndex	2ndex	3ndex
V	N	N
-trns		
+crsp		
-fint		
+root		
actr		
m{actr}		
m{PAT}		

11.2.2.3 Multitude Stative Verbs

Multitude [+mltd] stative verbs in Pacoh share an initial presyllable shape, [Ca... with a copied initial from the main syllable, and take only inanimate nouns, which the verbs interpret as plural (see section 10.3.1.3). Consider S443.

S 443: Plural stative verb

'The houses were small.'

duŋ	ka.ket
house	small
1ndex	2ndex
N	V
-unit	+sttv
-anmt	+mltd
Nom	I{Nom}
PAT	I{PAT}
	I{-sngl}

S444 shows an analogical set.

S 444: Analogical set for [+mltd]

bɛ:ŋ 'healthy'	:	ba.bɛ:ŋ 'healthy' ::
V		V
+sttv		+sttv
αmltd		+mltd
prɛ:ŋ 'dry'	:	pa.prɛ:ŋ 'dry'
V		V
+sttv		+sttv
αmltd		+mltd

The forms on the left side of the analogy are always monosyllabic stative verbs. The forms on the right side share the feature [+mltd] and the word-initial substring [Ca...], which has the same onset as the main syllable in the word.

WFS-13: Multitude stative verb formation

$\left[\begin{array}{c} V \\ +sttv \\ \beta F_j \end{array} \right]$	:	$\left[ \begin{array}{c} V \\ +sttv \\ +mltd \end{array} \right]$
[C	:	[Ca.C

Thus, sets of monosyllabic non-multitude stative verbs are related to bisyllabic multitude stative verbs with the phonological shape [Ca....

11.2.2.4 Reciprocal Verbs

Certain Pacoh verbs with word-initial substring [tər... (and similar phonological forms, such as [ʔr... and [kər...]) have the feature [+rcpr]. Reciprocal verbs require plural or coordinative nouns in the NOMINATIVE case. These verbs are semantically reciprocal, referring to the mutual influence of the ‘subjects’. S445 shows an analogical set demonstrating WFS-14.

S 445: Analogical set for [+rcpr]

taʔ	:	tər.taʔ	::
‘to fight’		‘to fight each other’	
V		V	
+trns		-trns	
-rcpr		+rcpr	
ʃuə	:	tər.ʃuə	
‘to search’		‘to search for each other’	
V		V	
+trns		-trns	
-rcpr		+rcpr	

The verbs on the left are non-reciprocal and intransitive, while those on the right are reciprocal and transitive.

WFS-14: Reciprocal verb formation

[	V	]	:	[	V]
	+trns				-trns	
	-rcpr				+rcpr	
[			:	[	tər	

A related form is the word-initial [pər..., seen in verbs that are both [+cstv] and [+rcpr].

11.2.3 Resultative Adverb Word-Formation

One WFS in Pacoh generates adverbs with resultative meanings (see section 5.2.4 for discussion of that adverb subcategory). All of these adverbs share the word-initial

form [ʔa... and share phonological material with stative verbs that express similar meanings. S446 shows an analogical set that demonstrates WFS-5.

S 446: Analogical set for resultative adverbs

ʃaj	:	ʔa.ʃaj	::
'full'		'fully'	
V		Adv	
+sttv		+rslt	
prɛŋ	:	ʔa.prɛŋ	
'dry'		'to dryness'	
V		Adv	
+sttv		+rslt	

This analogical set demonstrates WFS-5.

WFS-5: Resultative adverb formation

$\left[\begin{array}{c} V_i \\ +sttv \end{array} \right]$	:	$\left[ \begin{array}{c} Adv_i \\ +rslt \end{array} \right]$
$[\sigma$	:	$[\text{ʔa}.\sigma$

The forms on the left side of the analogy are always monosyllabic. Available data contains only about ten examples of resultative adverbs. More data is needed to determine the productivity of this WFS.

11.2.4 Phonological Reduplication

Reduplication in Mon-Khmer languages often involves prosodic material, typically copying templates while simultaneously alternating segmental material, such as a consonant or the rhyme of a syllable. Reduplicative WFSs in Mon-Khmer languages result in a wide range of semantically complex and explicit words (typically active and stative verbs, but also nouns and adverbs), for example, words expressing a very specific kind of body shape or the specific kinds of movements made by animals or other natural

phenomena.¹⁰⁶ Pacoh as well has this type of reduplication (see section 2.4.4.1). Some common meanings expressed by Pacoh reduplicants include such vague semantic fields as physical sensations, odors, confused/disordered situations, and actions performed with random movement. Pacoh reduplicants can be verbs (both stative and non-stative), nouns, and adverbs. Of the 98 reduplicants in available data, there are 9 adverbs, 20 nouns, 25 non-stative verbs, and 42 stative verbs.

This subsection describes three types of reduplicative WFSs in Pacoh: template reduplication, template-plus-presyllable reduplication, and clause-incorporation, as shown in Table 82.¹⁰⁷

Category	Form	Gloss
<i>Template</i>	vaŋ-və:ŋ	'clumsy'
	tuəp-juəp	'ruffled (of hair)'
	ʃe:l-jo:l	'to drift (of leaves)'
	tə:p-hə:p	'a big empty place'
	ʃi:l-ʃuəʔ	'to imitate'
	ki:l-ku:l	'fragrant (of tree sap)'
	ʃeŋ-ʃe:l	'to cackle'
<i>Template-plus-Presyllable</i>	vjəl-ʔi.vjəl	'full of twists and bends'
	taʔ-ʔm.biʔ-ʔi.biʔ	'to pretend to sleep'
<i>Clause-Incorporation</i>	ŋa:j-taʔ-pŋuəʔ-taʔ-təm.paʔ they do work do work	'They're working.'

Table 82: Examples of Pacoh reduplication

In many cases, template reduplication shows copying of the prosodic template but some kind of phonemic alternation. Template-plus-presyllable reduplication involves both

¹⁰⁶ See V. H. Hoàng 1979, 1985, 1987, 1997 for discussion on reduplication in Vietnamese, the Katuic languages, and other Mon-Khmer languages. Bahnar reduplication (Banker 1964b) expresses contrariness of expectation, disgust, actions to be followed by other actions, and intensification. To give an indication of the productivity of this WFS, an entire dictionary (Viện Ngôn Ngữ Học 1995), containing about 5,000 entries, has been devoted to reduplicant forms in Vietnamese.

copying a syllable from the base and the adding of a phonologically unchanging presyllable. Clause-incorporation involves segmental material from a clause. Each type of reduplication is shown in this section to act as the phonological part of WFSs that produce words of differing syntactic and semantic types.

11.2.4.1 *Clause-Incorporative Word-Formation*

The clause-incorporative WFS involves phonological material from finite clauses/sentences in reduplication to produce verbs, hence the term ‘clause-incorporative’.¹⁰⁸ They generally involve phonological material related to reduplicants, as in S447a and b. In both sentences, phonological substrings are seen twice in these words (the verbs *?a.kəp* ‘don’t’ and *ta?* ‘to do’) and the rest consists of phonological material of the reduplicant for ‘sad’ *rəw-?i.ri:* and the generalized noun ‘to work in general’ *pruə?-təm.pa?*.

S 447: Regular and clause-incorporative verb

(a) ‘Don’t be sad.’

?a.kəp-rəw-?a.kəp-?i.ri:
don’t-sad-don’t-sad¹⁰⁹
V

(b) ‘They’re working.’

ŋa:j ta?-pruə?-ta?-təm.pa?
3p do-work-do-work
N V

¹⁰⁷ There are actually five phonological types of reduplication. The two WFSs that involve initial-C reduplication are in subsections 11.2.3. Partial reduplication is not included since the data on these forms is limited to a few examples with no identifiable WFS involved.

¹⁰⁸ The primary source on this clause-incorporation WFS comes from R. Watson 1966 where these constructions are called ‘Post-Predicate extensions.’ Vu (1998) dealt with the same issue in Vietnamese. Both recognized that these ‘splittable compounds’ involved either reduplicants or lexical compounds that have generic meanings.

¹⁰⁹ Hyphens, as used in transcriptions in this grammar, indicate phonological words, not morphs. However, to clarify the portions of the incorporated forms, in this subsection, the ‘morphs’ of transcriptions and interlinear glosses do correspond as indicated by hyphens.

This WFS strategy involves a relationship between either a verb-verb or verb-noun pairs and the incorporated form. The noun or verb complement in the left side of the analogy must have the semantic features [+gnrl] (sections 11.2.1.4) or [+smsp] (section 11.2.4.3).

S 448: Generic items of wealth

‘I still have wealth.’

ki:	jo:l	pra?-ti.riə?-ʔa.kaj
I	still have	wealth
N	V	N

In S448, ‘wealth’ contains phonological material from the words ‘money, cattle, and children’, but rather than referring to those individual items, the noun instead refers to wealth. Only these phonologically complex and semantically generalized noun are used as the basis for this kind of clause-incorporative reduplication WFS.

The starting point for the reduplication can be the verb or ‘subject’ of a sentence (R. Watson 1976), the latter instance resulting in complete sentential reduplication. An analogical set is given in S449.

S 449: Analogical set for [+prtñ]

jo:l	pra?-ti.riə?-ʔa.kaj	:	jo:l-pra?-jol-ti.riə?-jol-ʔa.kaj	::
still have	wealth	:	still have wealth	
V	N		V	
ta?	kər.riəŋ-kər.rɔ:ŋ	:	ta?-kər.riəŋ-ta?-kər.rɔ:ŋ	
make	fences		make fences	
V	N		V	

WFS-15: Clause-incorporative verb formation

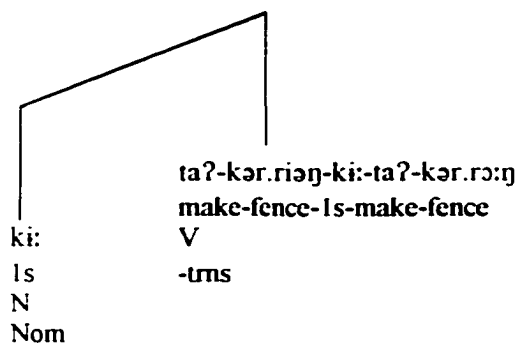
$\left[\begin{array}{c} V - X \\ +gnrl \end{array} \right]$	:	$\left[ \begin{array}{c} V \\ -tms \\ +ncrp \end{array} \right]$
$\langle \theta_1 - \theta_2 - \theta_3 \rangle$	:	$\langle \theta_1 - \theta_2 - \theta_1 - \theta_3 \rangle$

The WFS here uses feet as the basis for the analogical relation. In a sequence of three feet (which always correspond to a phonological word in Pacoh).

Such sentences could hypothetically involve coordinate constructions, but the notion of lexical integrity requires that words not be syntactically separated. Were this syntactic separation, that notion would be violated. A phonetically-based reduplicative explanation maintains the lexical integrity, but in turn creates phonetically long syntactic words. In S449, the examples are something like ‘object’ incorporation, though in addition, the verb itself is copied. Still, this goes beyond ‘object’ incorporation since the ‘subject’ can also be copied, as in S450 (the sentence comes from R. Watson 1976).

S 450: Sentence with clause-incorporated verb

‘I make fences (in general).’



In this stemma, the Nom/PAT noun is shown to be separate, though it is possible that this too is part of the reduplication, and the complete phrase is a syntactic word.¹¹⁰

¹¹⁰ Starosta (personal communication) has suggested that the WFS first derives a second verb, a kind of ‘idiom chunk,’ that can only appear as a dependent of its derivational source and that as a finite verb, it can take its own subject. Then these instances would have two clauses and no incorporated subject. I think that discussion of this rather complicated type of reduplication requires more space for analysis than can be devoted here, and that my current proposal be considered tentative at best.

11.2.4.2 Presyllable Plus Template Reduplication

In template-plus-presyllable reduplication, monosyllabic verbs are copied and the presyllable [ʔi... is added between the two identical forms. The resulting intransitive verbs focus on the semantic generality of the action, marked by the feature [+gnrl]. Consider the analogical sets in S451.

S 451: Analogical set for [V, +gnrl]

ca	:	ca-ʔi.ca	::
'to eat'		'to eat in general'	
V		V	
+trns		-trns	
-gnrl		+gnrl	
taʔ	:	taʔ-ʔi.taʔ	
'to work'		'to work in general'	
V		V	
+trns		-trns	
-gnrl		+gnrl	

The resulting reduplicant forms have been described as having the meaning 'action X in general' (S. Watson 1966), and so have been given the semantic feature [+gnrl]. The fact that these verbs are always intransitive may be part of the semantic generalizing.

WFS-19: Generalized verb formation

$\left[\begin{array}{c} V \\ \pm trns \\ -gnrl \end{array} \right]$	:	$\left[ \begin{array}{c} V \\ -trns \\ +gnrl \end{array} \right]$
{X}	:	{X-ʔi-X}

One pattern of reduplication that Watson (*ibid.*) described as 'pretence' involves the use of the verb *taʔ* 'to do' and a reduplicant verb, the first verb having a homorganic nasal and the second, a [ʔi... word-initial substring. The analogical pattern in S452 demonstrates WFS-16.

S 452: Analogical set for [+prtɲ]

biʔ	:	taʔ-ʔm.biʔ-ʔi.biʔ	::
'to sleep'		'to pretend to sleep'	
[-prtɲ]		[+prtɲ]	

cɛt 'to die'	:	taʔ-ŋ.cɛt-ʔi.cɛt	
'to die'		'to pretend to be dead'	
[-prtɲ]		[+prtɲ]	

WFS-16: Pretence reduplicants

$\left[\begin{array}{c} \text{V} \\ \text{-prtɲ} \end{array} \right]$	:	$\left[ \begin{array}{c} \text{V} \\ \text{+prtɲ} \end{array} \right]$:
[X]	:	[taʔ-ʔŋ.X-ʔi.X]	

Again, the period links syllables while the hyphen links feet/phonological words.

11.2.4.3 Template Reduplication

Template reduplication involves the entire phonological word—either one or two syllables. The phonological patterns are consistent in number of syllables (one to two or two to four) and the overall syllable shape (CV to CVCV or CVC to CVCCVC), though there are several patterns of segmental alternations (see section 2.4.4.1).¹¹¹ The segments that alternate include in any of these reduplicant types onset, coda, vowel, or rhyme alternations. Thus, these WFSs involve a phonological representation not of just a syllable, but a foot/phonological word, as discussed in section 2.4 on the section regarding phonological reduplication. In this section, however, WFSs use ‘X’ versus ‘XX’ for simplicity.

¹¹¹ Similar reduplicative patterns are seen in Mon-Khmer and Tai-Kadai languages. No patterns of alternations have been linked to any specific semantic properties (e.g., plurality or other semantic features are not seen to belong to alternations of initial consonants or any other segmental alternation). Thus, despite the wide range of phonological forms this WFS results in, the safest general statement that can be made is that these rules are based on the syllabic template but with a segmental alternation.

The difference between verbs and derivationally related reduplicant forms often involves some kind of semantic specialization, though the exact semantic result is not predictable. The feature [\pm smsp] refers to the semantic specialization, as in S453. S453 demonstrates the phonologically overgeneralized rule WFS-17.

S 453: Analogical set for [+smsp]

kəl.la:ʔ	:	kəl.la:ʔ-kəl.liər	::
'timid/shy'		'cowardly'	
V		V	
+sttv		+sttv	
		+smsp	
ka.caŋ	:	ka.caŋ-ka.bi:p	
'to smile'		'to smile faintly'	
V		V	
		+smsp	

WFS-17: Semantic specializing reduplication

$\left[\begin{array}{c} V \\ \beta F_j \end{array} \right]$	:	$\left[ \begin{array}{c} V \\ [+smsp] \end{array} \right]$
[X]	:	[XX]

For any word, another word may exist with shared phonological, syntactic, and semantic features but one having undergone reduplication and semantic specialization.

With nouns, however, there is often a generalized meaning that refers to a whole class of nouns rather than to one member of the set. Consider S454.

S 454: Analogical set for [N, +gnrl]

ʔa.lə:ŋ	:	ʔa.lə:ŋ-ʔa.lə:	::
'tree'		'vegetation'	
N		N	
		+gnrl	
ʃe:c	:	ʃe:c-ʃe:ŋ	
'meat'		'meat in general'	
N		N	
		+gnrl	

The analogical set in S454 demonstrates the function of WFS-18.

WFS-18: Generalization reduplication

$$\begin{array}{ccc} \left[\begin{array}{c} N \\ \beta F_1 \end{array} \right] & : & \left[\begin{array}{c} N \\ [+gnrl] \end{array} \right] \\ [X] & : & [XX] \end{array}$$

In this instance, a noun may have a form derivationally related through reduplication and differing in the feature [+gnrl] (general). The phonological material from these generalized nouns can take part in the clause-incorporative WFS in section 11.2.4.1.

11.3 CONCLUDING COMMENTS ON PACOH WORD-FORMATION

The WFSs in this chapter are grouped by syntactic category (nouns, verbs, and adverbs) and phonological type (reduplicatives and clause-incorporative forms). The data accounted for are not complete. S. Watson 1966 deals with a few other types of verb-related word-formation patterns. The data I collected included some, but not all, of the categories S. Watson described.¹¹² Table 83 shows the substrings associated with classes of verbs and nouns and includes some forms that did not occur in my data but that Watson described. Table 83 shows the phonological invariant portions, the syntactic categories of both halves of an analogical formula, associated meanings shared by the derived forms, and comments on the phonological constraints. In general, the previous subsections contain discussion primarily on WFSs I was able to find while analyzing

¹¹² This was definitely due to my own time constraints, but also due to differences in current opinions by native speakers, who, in some cases, did not have access to some word-formation strategies described by the Watsons. There are many possibilities to account for the differences, such as regional variation and degree of bilingualism in Vietnamese or non-Vietnamese languages that have fewer active WFSs, such as the Bru spoken in Quang Tri province. Another possibility is that these forms are fossilizing, and word-forming strategies are deteriorating. Only more data can resolve this issue.

available data, though reference to all WFSs described by S. Watson that I did not come across are at least discussed.

Substring	Related form	Derived form	Derived form Meaning	Phonological Constraints
[pa...	V	V/+trns	'to cause to X'	both 1+2
[ta...	V	V	'to X involuntarily'	1-syll. only
[pi...	V/+sttv	V/+trns	'to cause to be X'	1-syll. only
[par ₂ ...	V/+trns	V/?	'to cause each other to X'	1-syll. only?
[ti...	V/+trns	V/+sttv	'to be X-ed'	1-syll. only
[Ca...	V/+trns?	V/-trns	'to do X completely'	1-syll. only
[tar...	V/+trns	V/?	'to X each other'	both 1+2-syll.
[CV...	V/-sttv	V/-trns	'to X in general'	1-syll. only
[N...(redup.)	V/-trns	V/-trns	'to pretend to X'	both 1+2-syll.
[par ₁ ...	V	N	'the action of X'	mostly 1-syll. some 2-syll.
[Can...	V	N	'the result of X' 'the instrument for X' 'the location of X'	both 1+2-syll.

Table 83: Pacoh verbal WFSs

Most of the substrings listed in Table 83 show phonological variation with no apparent phonological justification. For example, in S. Watson (1966), the commonly seen [pa... is also realized variously as /pa/, /ta/, and /ka/, all occurring in words with the same syntactic and semantic characteristics. The nasal of the substring ...an... generally assimilates to place of articulation, though /ər/ also occurs, with no clear phonological justification. The lack of phonological justification in seeming phonological variation is most likely due to the nature of lexical derivation. Forms, once created, may change over time. In this case, though the sounds vary without any particular phonological condition, they did change within phonological constraints; [p], [t], and [k] are all voiceless stops, while the nasals and [r] are all sonorants.

Though the degree of productivity of Pacoh WFSs is difficult to posit precisely, they can be put into three general groups based on degree of productivity—high,

medium, and low—based on the number of occurrences of those substrings with over 1,000 Pacoh words¹¹³ (taken from S. Watson 1966). Table 84 shows the range in the left column, then the phonological forms, and the totals in the right column. The columns labeled ‘monosyllabic’ and ‘bisyllabic’ indicate the number of occurrences in which the phonological substrings are derivationally related to monosyllabic and bisyllabic forms respectively.

Range	Form	Monosyllabic	Bisyllabic	Total
High	[par ₁ ...	631	15	646
	[tar...	467	151	618
Medium	[ta...	346	0	346
	[pa...	299	20	319
	[CV...	203	0	203
Low	...an...	106	42	148
	[pi...	74	0	74
	[par ₂ ...	42	0	42
	[ti...	14	0	14
	[Ca...	13	0	13

Table 84: Degree of derivational WFS productivity in Pacoh

Such a division in productivity of word-formation is admittedly arbitrary, but still suggestive of the productive capacity of those WFSs. Those word-form constants with high productivity are found to be useable with most any verb forms. Those with medium productivity are still available to speakers to create new forms. Those with low productivity occur for the most part in lexicalized forms, though indeed, most of these items must already be ‘lexicalized’ for WFSs to be available to speakers.

¹¹³ Some of these phonological words could actually represent more than one syntactic word, each belonging to a different subcategory of the same part of speech.

These statistics are based on data from three decades before the writing of this grammar. Many of the speakers with whom I came into contact still recognized some of those forms, but others did not. The lack of some of the forms in the data suggests the possibility that the Pacoh are losing some of those active processes. Hopefully, enough data of the formerly active processes can still be collected before language contact wipes them out.

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