UC Berkeley
Dissertations, Department of Linguistics

Title
Discourse-functional, Historical, and Typological Aspects of Applicative Constructions

Permalink
https://escholarship.org/uc/item/86t3g76t

Author
Peterson, David

Publication Date
1999

Discourse-functional, historical, and typological
aspects of applicative constructions

by

David August Peterson

B.A. (University of Alaska, Fairbanks) 1991
M.A. (University of California, Berkeley) 1993

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Linguistics

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA, BERKELEY

Committee in charge:

Professor Gary Holland, Co-chair
Professor Johanna Nichols, Co-chair
Professor Sam Mchombo
Professor Thomas Shannon

Spring 1999

Discourse-functional, historical, and typological aspects of applicative constructions

© 1999

by

David August Peterson

The dissertation of David August Peterson is approved:

Dary Holland   4/8/99
Co-chair   Date

Sharon McClure   Apr. 8, 1999
Co-chair   Date

                                              4/8/99
                                              Date

Thomas F. Shannon   4/8/99
                                              Date

University of California, Berkeley

Spring 1999

Table of contents

List of abbreviations

Abbreviations used in Haka Lai examples:

1 'first person'
2 'second person'
3 'third person'
S 'singular'
P 'plural'

ABL 'ablative'
ADD BEN 'additional benefactive'
ADV 'adverb'
AFF 'affected object'
AFFIRM 'affirmative'
ALL 'allative'
ANDAT 'andative'
ASSOC 'associative'
AUG 'augmentative'
BEN 'benefactive'
CAUS 'causative'
CLASS 'classifier'
COLL 'collective'
COM 'comitative'
COMP 'complementizer'
COND 'conditional'
CONN 'connective'
CONTIN 'continuous'
CONTR 'contrastive'
DEIC '(discourse) deictic particle'
DEM 'demonstrative'
DIM 'diminutive'
DIREC 'directional'
ERG 'ergative'
EXHAUST 'exhaustive'
EXPER 'experiential'
EVAL 'evaluative'
FUT 'future'
HORT 'hortative'
INST 'instrumental'
INTENS 'intensifier'
INTERJ 'interjection'
INTERR 'interrogative'
LOC 'locative'
MAL 'malefactive'
MIM 'mimetic'
NEG 'negative'
NOMLZR 'nominalizer'
O 'object'
PERF 'perfect'
PL 'plural'
PL OBJ 'plural object'
POSS 'possessor'
POT 'potential'

PRIOR 'prioritive'
PROG 'progressive'
PRON 'pronominal'
PURP 'purposive'
QUEST 'question'
QUOT 'quotative'
S 'subject'
SUBJUNCT 'subjunctive'
SUPERLAT 'superlative'
REFL 'reflexive'
REL 'relativizer'
RELINQ 'relinquitive'
VENIT 'venitive'

Abbreviations used in other examples (not case-sensitive):

Where possible, this list interprets abbreviations used in the remaining examples. I have attempted to remain as true to original interlinears as possible. In some cases I have added the abbreviation 'app' if the applicative nature of a particular formative was unclear from its original interlinear.

Arabic and Roman numerals indicate either person (in a standard way) or noun class.

a 'absolutive'
a 'agent'
abs 'absolutive'
act 'actor'
advA, B, C, D 'advancement marker A, B, C, D'
agr 'agreement'
all 'allative'
antipass 'antipassive'
app 'applicative'
appl 'applicative'
applic 'applicative'
art 'article'
asp 'aspect'
assoc 'associative'
aux 'auxiliary'
ben 'benefactive'
com 'comitative'
comp 'complementizer'
conv 'converb'
d 'dative'
dat 'dative'
deic 'deictic'
det 'determiner'
do 'direct object'
E 'ergative'
erg 'ergative'
fem 'feminine'
foc 'focus'
frust 'frustrative'
fut 'future'
fv 'final vowel'

gen 'genitive'
habit 'habitual'
indf 'indefinite'
indic 'indicative'
inst 'instrumental'
instr 'instrumental'
irr 'irrealis'
loc 'locative'
masc 'masculine'
nom 'nominative'
neg 'negative'
neut 'neutral'
o 'object'
obj 'object'
obl 'oblique'
om 'object marker'
op 'object prefix'
p 'plural'
pass 'passive'
perf 'perfective'
pf 'perfective'
pl 'plural'
pos 'possessive/possessor'
poss 'possessive/possessor'
pr 'present'
pred 'predicate'
prep 'preposition'
prog 'progressive'
pron 'pronoun'
pst 'past'
purp 'purposive'
pv 'preverb'
r 'aspect'
r 'realis'
recip 'reciprocal'
rel 'relative pronoun'
rel 'relativizer'
rflex 'reflexive'
rp 'relative pronoun'
s 'subject'
s 'singular'
sg 'singular'
sm 'subject marker'
sp 'subject prefix'
sub 'subject'
sub 'subordinate'
subj 'subject'
t 'theme'
tr 'transitive'
trans 'transitive'
vis 'visual'

Acknowledgements

I have been lucky to have spent the last eight years at what I would without reservation characterize as the most stimulating environment for doing linguistics in the country. More important than the endless stream of colloquia, workshops, conferences, working groups, and libraries, though, are the people.

First to be thanked are those who made this dissertation possible: Johanna Nichols, my mentor, employer, and friend, who never fails to say something positive; Gary Holland, my in-department advisor, whose demand for clarity most certainly improved the dissertation; Sam Mchombo, whose papers inspired me to study applicative constructions and whose jovial manner warms us all; and Tom Shannon, who always found holes everyone else had missed for me to plug up.

It is impossible to list all of the other Berkeley linguists who have shaped my intellectual development. I should express my gratitude to Larry Hyman, who first encouraged me to study Bantu languages and who suggested me as a research assistant for Johanna Nichols; Jim Matisoff, in whose Haka Lai field methods course I stumbled across the applicative system I now know best; Chuck Fillmore and Paul Kay, my syntax teachers; Sharon Inkelas, who accompanied me on my first foray into the morphosyntax of applicatives, and Jim Bosson, whose Turkic and Mongolian courses were a source of relaxation and entertainment during my first few years of grad school.

Leanne Hinton and the Survey of California and Other Indian Languages, despite my dubious status as an Americanist, were gracious enough to host me (and my copious library books) and provide me with incomparable computer facilities.

Several colleagues outside of Berkeley have also provided me with helpful feedback and data. Thanks are due in this regard to Balthasar Bickel, Mark Donohue, and Matthew Dryer.

In addition, I should recognize my first linguistics teachers at the Alaska Native Language Center: Larry Kaplan, Mike Krauss, and Steve Jacobson.

Friends who shared their languages with me, for which I will always be grateful, include Fallou Gueye and Paap Saw, who taught me Wolof, and above all, Ken Van Bik, my Lai teacher.

Last, but only because they are most important, have been my friends and colleagues over the years here at Berkeley: Yoon-Suk Chung, Andy Dolbey, Orin Gensler (whose mantle I assumed in the Survey), Kira Hall, Kathleen Hubbard, Matt Juge, Barbara Kaiser, Marv Kramer, Joyce Mathangwane, Kevin Moore, Jeri Moxley, Paula Radetzky, Lionel Wee, Tomoko Yamashita Smith, Cheryl Zoll, and especially Bill Weigel.

Thank you, mom, dad, and Paula, for the support you've given me.

Chapter 1

Introduction

1.1. The nature of applicative constructions.

The applicative construction, as the term is used in this study, is a syntactic construction signalled by overt verbal morphology which allows the coding of a thematically peripheral argument or adjunct as a core object argument. The term 'applicative' originated at least as early as the 1600s, when missionary grammars of Uto-Aztecan languages made use of the term 'verbos applicativos' to designate a verbal form in those languages which indicated that the verb was directed towards another person (Carochi 1645/1983:63). Later, the words 'applicative' or 'applied,' possibly influenced by the Uto-Aztecan grammatical tradition, although I know of no evidence for directly linking the two, were used in Bantuist studies to refer to a comparable verbal derivation in that family (e.g. Stapleton 1903). Elsewhere, words such as prepositional, benefactive, indirective, and instrumental (depending largely on the type of applicative) have been used to refer to essentially the same phenomenon.

For instance, in Ainu, there is the alternation between non-applicative and applicative instantiations of locative arguments seen in (1) (from Shibatani 1996:159).

(1)   a.   poro   cise   ta   horari
                  big   house   in   live
                  'He lives in a big house.'

           b.   poro   cise   e-horari
                  big   house   APP-live
                  'He lives in a big house.'

In (1a), we see an oblique instantiation of a locative argument in a postpositional phrase. (1b) shows instantiation of the locative argument as a direct object of the verb (note the absence of any postposition), with concomitant verbal morphology marking the construction. The construction in (1b) is an applicative construction since it allows what would otherwise be coded as an oblique object to be coded instead as a core object.

Applicative constructions are typically described as transitivizing constructions, since if they involve an intransitive base verb, they result in a verb which has a direct object; in the case of formation of an applicative verb from a transitive base verb, languages differ in terms of whether the applicative construction serves to make the verb even more transitive (i.e. a double object verb), or simply results in rearrangement of argument structure (as Comrie 1985 characterizes it) rather than augmentation of it.

Applicative constructions have been instrumental in the development of a number of synchronic syntactic theories: Relational Grammar, Government and Binding Theory's Incorporation, and Lexical Functional Grammar's Lexical Mapping Theory. Each theory has provided more or less satisfactory synchronic accounts for the properties of applicative constructions (see Chapter 6 for a summary and critical evaluation of these approaches).

Since these synchronic accounts have been based mostly on individual sentences taken out of context, however, at least three aspects of applicative constructions have not been studied in a systematic manner. First, synchronic syntactic accounts have not paid attention to the pragmatic status of applicative constructions, and consequently, what speakers are doing when they use applicative constructions has not been thoroughly investigated. Second, while there have been a few attempts to show the origin of applicative constructions, their source and evolution have never been studied in detail for a large number of language families. Third, syntactic theories have made few claims about what typological features correlate with the presence of applicative constructions of various types. To address these issues will therefore be the primary goals of this study.

In this chapter, however, in order to demonstrate the morphosyntactic character of a typical applicative system, I first provide a full description of a family of applicative constructions in the Tibeto-Burman language Haka Lai; applicative constructions in this language exhibit some features which are found almost universally, and at the same time, some of these constructions are unique in terms of their semantic properties. With this detailed examination of the Haka Lai family of applicative constructions as background, in

Chapter 2 I exemplify the syntactic variation seen cross-linguistically in applicative constructions. Then, in Chapter 3, I use narrative texts from languages with applicative constructions to look at the discourse role of applicatives in terms of two approaches to the quantification of relative topicality (Givón 1983 and Thompson 1990). In addition, I examine the constructions that are used in conjunction with applicative constructions in order to determine if there is any more purely syntactic or structural motivation for their use in addition to discourse-functional considerations. This aspect of applicative constructions is important, because as we will see, the synchronic use of applicative constructions may largely dictate what these constructions develop into. In order to address the latter issue, Chapter 4 provides a detailed discussion of the historical sources for the development of applicative constructions and their evolution using evidence from several language families. Chapter 5 uses a fifty language typological sample to determine whether there are any major structural correlates with different types of applicative constructions; here we will again see ties between structural correlates of applicative constructions and both their discourse function and aspects of their historical development. Chapter 6 outlines synchronic approaches to applicative constructions and their properties, and evaluates their explanations in light of the discourse-functional, historical, and typological explanations for them provided in the present study.

1.2. A case study: Applicatives in Haka Lai.[1]

Haka Lai, a member of the Kuki-Chin subgroup of Tibeto-Burman spoken in Western Burma, has a large family of applicative constructions which exemplify not only the more typical cross-linguistic features of applicative constructions, but also some of the more exotic features that such constructions may have.

Typologically speaking, Lai is a fairly rigid OV language. It has ergative-absolutive case marking of nouns in most transitive clauses (including all of the examples which will be seen below), but its prefixal verbal agreement morphology is organized in a nominative-

---

[1]   This section is based largely on Peterson 1998a.

accusative fashion. Table 1.1 outlines these agreement markers (A=subject of transitive, S=subject of intransitive, O=object of transitive).[2]

Table 1.1. Verbal agreement markers.

	A/S	O	Reflexive object: A_i O_i
1s	ka-	-ka-	-a-
2s	na-	-ń---ʔin-	-a-
3s	ʔa-	-∅-	-a-
1p	ka-n-	-ka-n-	-ʔii-
2p	na-n-	-ń-...-hnaa---ʔin-...-hnaa	-ʔii-
3p	ʔa-n-	-∅-...-hnaa	-ʔii-

The A/S markers for singulars are straightforward, as are the A/S markers for plurals, since the latter are simply a combination of the former and a plural element -n-. The marking of O is more complicated. The markers for O in the first person are the same as the markers for A and S. Third person O is zero-marked, but in the third plural, a postverbal element -hnaa indicates plurality of the object. Second person has the most complex O agreement morphology: there is allomorphy between ʔin- which occurs after a consonant-final (i.e. plural) A/S marker and ń-, which occurs following a vowel-final (i.e. singular) A/S marker. The latter allomorph involves a high tone realized on the nasal portion of the A-O combination. Again, as in the third plural, plurality of the object in the case of second person plural objects is indicated by the postverbal element -hnaa. If the O is coreferential with the A, there are special object markers, which may be given either a reflexive or a reciprocal interpretation (seen at right in the table). There is no distinction for person in these forms.

In (2)-(4) I illustrate the use of some of these agreement markers:[3]

---

[2] The transcription system for Lai examples includes the following conventions: aspiration is indicated by *h* following a stop consonant; voiceless sonorants are indicated by a preceding *h*; *T* represents a retroflex stop series in opposition with the dental series indicated by *t*; long vowels are written doubled; the sequence *ʔC* represents a glottalized sonorant. Affixal boundaries are indicated by hyphens and clitic boundaries are indicated by =.

[3] The subscripted numerals in interlinears indicate the ablaut grade of the root, an issue which will not be particularly relevant in what follows as all applicative constructions require a particular grade.

(2) ʔa-ń-thoʔŋ-hnaa
3SS-2SO-hit₂-PL OBJ
'He hit y'all.'

(3) ʔan-kan-thoʔŋ
3PS-1PO-hit₂
'They hit us.'

(4) ʔan-ʔii-thooŋ
3PS-P REFL-hit₁
'They hit each other/themselves.'

The first agreement marker indicates the person and number of the subject, and is unambiguous. The second marker indicates that in (2), the object is second person; in (3) the object is first person plural; and in (4) the object is reflexive or reciprocal with the subject. In (2), the plurality of the object is indicated by the postposed element *-hnaa*.

1.2.1. Haka Lai applicative constructions: semantics and form.

The forms of applicative construction markers are given in Table 1.2.

Table 1.2. Applicative construction markers.

-piak	affected object (benefactive or malefactive)
-tseʔm	additional benefactive
-pii	comitative
-hnoʔ	malefactive
-kaʔn	prioritive
-taak	relinquitive
-naak	instrumental

I briefly exemplify the semantics of each of these in the following sections.

1.2.1.1. -piak: affected argument (benefactive or malefactive).

The use of *-piak* following the verb stem indicates the addition of an object which is semantically a beneficiary or a maleficiary of the action described by the verb. This sort of applicative construction is cross-linguistically the most common type (see Chapter 5), and usually if a language has any applicative construction type at all it is this one. In addition,

for many verbs, use of this applicative construction may indicate that the subject performs

the action *in place of* the object which it refers to; this is also a common cross-linguistic

semantic tendency.[4]

(5)   ma?   khan   vantsuŋmii=ni?   tsun   tleem-pii   ?an-tii-mii
        DEM   DEIC   angel=ERG   DEIC   wood slab-AUG   3PS-say-REL

        tsuu   ?an-taat   ?an-∅-taat-piak=?ii
        DEIC   3PS-hone$_2$ 3PS-3SO-hone$_2$-BEN=CONN
        'Then the angels honed and honed the so-called big slab of wood for him and...'

It is also not uncommon in Lai for the affected argument to be a semantic maleficiary, as in

the next example, which in fact occurred in a text in the sentence just prior to the previous

example:

(6)   ?aa!   tleem-pii   khaa   ma?-tii   tsun   taar-nuu=ni?
        INTERJ wood slab-AUG   DEIC   DEM-do$_i$ DEIC   old-woman=ERG

        ?a-ka-kha?ŋ-piak=?ii...
        3SS-1SO-burn$_2$-MAL=CONN
        'Ah, the old woman burned the big slab of wood on me, and...'

There is also an alternative construction for verbs marked by *-piak*, seen in (7).

(7)   tsewmaŋ   kay-ma?   tsaa=?a?   law   ?a-thlaw
        Tsewmang   1S-PRON   sake=LOC   field   3SS-hoe$_1$
        'Tsewmang hoed the field for my sake.'

which is similar, but does not quite correspond semantically to the *-piak* construction. In

(7) the beneficiary is structurally the possessor of a relational noun, *tsaa*, which is marked

obliquely.

1.2.1.2. -tse?m: additional benefactive.

-tse?m marks a benefactive applicative construction of a sort which is unknown in

any other language, as far as I know, as in the following sentence:

(8)   thiŋ   ?a-ka-laak-tse?m
        wood   3SS-1SO-carry$_2$-ADD BEN
        'He carried wood for me (in addition to carrying wood for himself).'

---

[4]   Most of the examples given here involve cases in which the affected argument is a beneficiary, so here I simply gloss the applicative marker as BEN, as in 5.

As the gloss indicates, the notion encoded by the additional benefactive applicative construction is that the subject is already performing the action of the verb, and that in addition to performing that action for his own benefit, the subject also performs it for the benefit of the additional object.

1.2.1.3. -pii: comitative.

-pii signals the addition of an object argument which is understood to be an equal participant with the subject in the performance of the action described by the verb; such comitative applicative constructions are not at all uncommon cross-linguistically. Thus, in the example in (9),

(9)   ka-law   ʔan-ka-thloʔ-pii
        1S POSS-field 3PS-1SO-hoe$_2$-COM
        'They hoed my field (together) with me.'

-pii licenses an object which is given a comitative interpretation. A text example is given in (10).

(10)   ...maʔ tsun   ʔin   Thaa   tshuŋ=ʔaʔ   tsun   ʔa-∅-ʔum-pii
        then   house good   inside=LOC   DEIC   3SS-3SO-live-COM
        'and then he lived together with her in the good house.'

Constructions using *-pii* are judged to be semantically more or less the same as a construction without *-pii* in which the comitative object is coded obliquely using the comitative case clitic *=hee*. Thus (11), is approximately the same as (9).

(11)   kay-maʔ=hee   ka-law   ʔan-thlaw
        1S-PRON=COM   1S POSS-field   3PS-hoe$_1$
        'They hoed my field together with me.'

1.2.1.4. -hnoʔ: malefactive.

The suffix *-hnoʔ* usually signals the addition of a maleficiary object, also a common applicative construction type. A verb-*hnoʔ* complex, however, is rarely given such a simple interpretation. *-hnoʔ* also indicates some kind of malice or harmful intent on the part of the subject towards the object it introduces, violent action, etc. Some examples are seen in (12)-(14), the last of which is from connected text.

(12)   kheeŋ   ?a-ka-hlo?n-hno?
        dish   3SS-1SO-throw$_2$-MAL
        'She threw the dish at me.'

(13)   rul=ni?   ka-?in=?a?   ?a-ka-lu?-hno?
        snake=ERG   1S POSS-house=LOC   3SS-1SO-enter$_2$-MAL
        'A snake came into my house on me.'

(14)   tsuutsa?a?tsun   ?an-paa   tsuu
        then   3P POSS-father   DEIC

        ?a-hey-∅-zuan-hno?=?ii
        3SS-DIREC-3SO-fly$_2$-MAL=CONN
        'Then it [a tiger] pounced on their father and...'

It should be further noted that in other cases, -*hno?* does not appear to have malefactive semantics at all, as in the next example.

(15)   ?ii   vaantsuŋmii=ni?   ?an-tha?y=?ii   vaantsuŋmii=ni?
        and   angel=ERG   3PS-hear$_2$=CONN   angel=ERG

        ?an-ruŋ-∅-Tum-hno?=?ii
        3PS-DIREC-3SO-descend$_i$-ALL=CONN
        'And the angels heard about it and the angels came down to him, and...'

It is clear that -*hno?* in this context indicates either simple motion towards the object, or possibly even the status of the object as a beneficiary. So, as in the case of the affected object applicative construction there is variation in the exact semantics of the object associated with this construction.

The closest paraphrase of sentences including the malefactive applicative construction would be something like 'X verbed in the face of Y', as in (16):

(16)   ka-hmaay=?a?   kheeŋ   ?a-∅-hlo?n
        1S POSS-face=LOC   dish   3SS-3SO-throw$_2$
        'He threw the dish in my face.'

The semantics of a sentence like (16) is not considered to be more or less semantically equivalent to a sentence including a verb-*hno?* complex, however.

1.2.1.5.   -ka?n: prioritive.

-*ka?n* indicates that the action is accomplished by the subject *ahead of* or *before* the additional object. Like the additional benefactive applicative construction described in

1.2.1.2., this applicative construction type is unique to Lai, as far as I know. Speakers

conceive of this semantic nuance primarily in spatial terms, but practically, it is hard to

come up with a context in which spatial precedence does not also entail temporal

precedence:

(17) booy ʔa-kan-ton-kaʔn
      chief 3SS-1PO-meet₂-PRIOR
      'He met the chief ahead of/before us.'

Like the comitative applicative but unlike most other applicative constructions,

-kaʔn applicatives have a non-applicative paraphrase. The degree of closeness between this

paraphrase and a version using the applicative construction is comparable to that between

the =hee alternative and the verb-pii complex for expressing comitative objects described

above. (18),

(18) kay-maʔ   hlaan=ʔaʔ   ʔa-kal
      1S-PRON   before/front=LOC   3SS-go
      'He went ahead of me.'

in which the semantically peripheral argument is expressed as the possessor of an obliquely

marked relational noun, is judged to be virtually the same in terms of meaning as (19),

(19) ʔa-ka-kal-kaʔn
      3SS-1SO-go-PRIOR
      'He went ahead of me.'

where the semantically peripheral argument is not an oblique.

1.2.1.6. -taak: relinquitive.

Sentences including -taak applicative constructions are interpreted as involving the

subject of the verb leaving the added object and verbing as seen in (20) and (21).

(20) ʔa-law   ʔa-kan-thloʔ-taak
      3S POSS-field 3SS-1SO-hoe₂-RELINQ
      'He left us and hoed his field.'

(21) ...hee-ʔuʔ   nan-ŋaa=lee   nan-suur   tiaʔ   ʔa-tii=ʔii
      here-PL   2P POSS-fish=AND   2P POSS-net QUOT   3SS-say=CONN

Ɂa-Ø-tshiaɁ-taak-hnaa
3SS-3O-put₂-RELINQ-PL OBJ
'...“Here you all, your fish and your net,” she said, and she put them down and left them.'

The temporal order of the event described by the verb and the event of leaving denoted by the suffix do not necessarily occur in a fixed order, as shown in the following example, where the flying and the leaving presumably occur simultaneously:

(22) vaanlooŋzuannaakhmun   Ɂa-Ø-rak-phaak   tik=ɁaɁ   khan   tsun
      airport   3SS-3SO-PAST-reach₂ time=LOC   DEIC   DEIC

Ɂa-vaanzuanlooŋ=niɁ   Ɂa-rak-Ø-zuan-taak-diam-tsaŋ
3S POSS-plane=ERG   3SS-PAST-3SO-fly₂-RELINQ-already-PERF
'By the time he$_j$ reached the airport, his$_i$ plane had already taken off (i.e. leaving him$_j$ behind).

The exact temporal ordering of the event expressed by the base verb and the event expressed by the applicative marker probably depends largely on the semantics of the base verb. The semantics involved in using this applicative construction resembles what Himalayanists refer to as a relinquitive, so I use that term to describe the construction, though it should be understood that this is a valence-affecting derivational affix, something the Himalayan relinquitive is not. This type of applicative construction is extremely uncommon cross-linguistically, though I have seen an example of what appears to be a similar construction type in Bora, a Huitotoan language of Peru (Thiesen 1996:62), and generalized applicatives sometimes have an ablative sense (e.g. Wolof); the Bora construction is not clearly transitivizing, however.

1.2.1.7.   -naak: instrumental.

-*naak* applicative constructions differ from the preceding constructions in that the object which they add to the valence of the base verb is usually inanimate. What the construction indicates is that an instrument is the object of the verb, as in (23):

(23) Ɂii   zooŋtee=niɁ   tsun   Ɂa-lutsin   khaa   Ɂa-Ø-hmuɁ=Ɂii
      and   monkey=ERG   DEIC   3S-hat   DEIC   3SS-3SO-see₂=CONN

lentee ʔa-Ø-tseʔl-naak
game 3SS-3SO-play-INST
'And the monkey saw his hat and used it to play games.'

The following two sentences are judged to be more or less the same semantically:

(24) tiilooŋ=ʔin tivaa (khaa) kan-tan
boat=INST river DEIC 1PS-cross
'We used the boat to cross the river.'

(25) tiilooŋ khaa tivaa kan-Ø-tan-naak
boat DEIC river 1PS-3SO-cross-INST
'We used the boat to cross the river.'

In (24), the instrument object is coded with the oblique case particle =ʔin. The sentence in (25), on the other hand, has the postverbal transitivizer -naak, and the instrument object receives no oblique marking. Instrumental applicative constructions like this are fairly common cross-linguistically.

1.2.1.8. Summary.

Haka Lai has both typical and highly unusual applicative construction types. In terms of cross-linguistic distribution, there are a few high-frequency applicatives. As we will see in Chapter 5, languages are most likely to have benefactive/malefactive, instrumental, and comitative applicative constructions, if they have any applicative constructions at all. On the other hand, there are also some highly uncommon and perhaps even unique applicative constructions attested here: the relinquitive applicative is found in, at best, one other language, and to my knowledge, no other language exhibits the additional benefactive or prioritive applicative types.

1.2.2. The morphosyntax of objects in Haka Lai applicative constructions.

The verbal complex formed by the stem and one of the applicative markers discussed above is (at least mono-)transitive. It is also clear in most of the cases discussed above that the applicative verb is transitive (or *more* transitive, in the sense of having multiple objects) by virtue of the presence of the applicative marker. Take, for example, the verb *thiʔ* 'to die'. This verb is intransitive and hence cannot take an object marker in its simplex form:

(26)　*ʔa-ka-thiʔ.
　　　3SS-1SO-die₂
　　　'He died ? me.'

Even if *thiʔ* could take an object, it is unclear how the semantic role of the object would be determined. On the other hand, when *thiʔ* is augmented by the applicative markers discussed in the preceding section (with the exception of the instrumental applicative marker, for which it is hard to find an appropriate context), the derived verb takes an object, the semantics of which is specified by the applicative markerss:

(27)　ʔa-ka-thiʔ-piak
　　　3SS-1SO-die₂-BEN
　　　'He died for me.'

(28)　ʔa-ka-thiʔ-tseʔm
　　　3SS-1SO-die₂-ADD BEN
　　　'He died for me (in addition to dying for himself).'

(29)　ʔa-ka-thiʔ-pii
　　　3SS-1SO-die₂-COM
　　　'He's obsessed with me.'[5]

(30)　ʔa-ka-thiʔ-hnoʔ
　　　3SS-1SO-die₂-MAL
　　　'He died on me.'

(31)　ʔa-ka-thiʔ-kaʔn
　　　3SS-1SO-die₂-PRIOR
　　　'He died before me.'

(32)　ʔa-ka-thiʔ-taak
　　　3SS-1SO-die₂-RELINQ
　　　'He died and left me.'

(33)　ʔa-ka-kal-naak
　　　3SS-1SO-go-INST
　　　'He went by means of me.'[6]

---

[5]　Clearly the semantics of this particular combination is somewhat idiomatic.

[6]　Finding situations in which an instrument can be and animate first or second person, and hence tell us about object marking, is difficult. This form might be used, for instance, if my body provided the route by which he traversed some obstacle, but it is still a pretty far-fetched example.

If the base verb is transitive, however, the resulting verb is ditransitive, and given two overt third person objects of equal animacy, neither word order nor case marking (both are unmarked) will distinguish between them, as shown by the possible interpretations of (34).

(34) lawthlawpaa=niʔ   taaynaamkooŋ   hŋaaktsiapaa   ʔa-Ø-toon-piak
      farmer=ERG   Taaynaamkoong   boy   3SS-3SO-meet-BEN
      'The farmer met the boy for Taaynaamkoong.'
      'The farmer met Taaynaamkoong for the boy.'

When there appear to be multiple objects, the question which arises is whether there is any difference in their syntactic behavior. In what follows, using by now standard terminology, I will refer to the object associated with the base verb as the *base object*, and the object associated with the applicative marker as the *applicative object*.

1.2.2.1. Object agreement.

First, we will look in detail at object agreement, which is usually taken to be one of the clearest diagnostics of syntactic objecthood. In almost all applicative constructions, the main pre-verbal object agreement is with the object associated with the applicative marker; there is never a second object marker in this position which agrees with the base object, if there is one. Thus, with ditransitives (and all applicative or causative verbs), it is not possible to have forms as in (35), where there would be one object marker reflecting the patient and another object marker reflecting the recipient.

(35)   a.   *ʔa-ka-ń-peek
            3SS-1SO-2SO-give
            'He gave me to you.'/ 'He gave you to me.'

       b.   *ʔa-ń-ka-peek
            3SS-2SO-1SO-give
            'He gave me to you.'/ 'He gave you to me.'

It is possible for postverbal plural marking (-*hnaa*) to refer to the base object, however, if the base verb is transitive (see example 2 above). The latter phenomenon is not an uncommon feature of applicative systems in languages whose agreement is distributed between various parts of the verbal complex.

Object agreement for affected object applicative constructions is with the affected object. Consider (36) and (37).

(36)　tsewmaŋ　　door=ʔaʔ　　　ʔa-kal
　　　tsewmang　market=LOC　　　3SS-go
　　　'Tsewmang went to the market.'

(37)　tsewmaŋ=niʔ　　door=ʔaʔ　　　ʔa-ka-kal-piak
　　　tsewmang=ERG　market=LOC　　3SS-1SO-go-BEN
　　　'Tsewmang went to the market for me.'

In (36), the verb *kal* 'to go' is intransitive: the verb takes only a subject agreement marker and the goal object is marked obliquely. In (37), on the other hand, the applicative marker *-piak* has been added, and the resulting applicative verb takes an object agreement marker.

When there is a patient object associated with the base verb, agreement is still with the affected object:

(38)　ka-law　　　ʔan-ka-thloʔ-piak
　　　1S POSS-field　3PS-1SO-hoe$_2$-BEN
　　　'They hoed my field for me.'

The plurality of the *patient* object may be marked by postverbal plural object marking if the affected object is either first person singular or plural.

(39)　ka-law　　　ʔan-ka-thloʔ-piak-hnaa
　　　1S POSS-field　3PS-1SO-hoe$_2$-BEN-PL OBJ
　　　'They hoed my fields for me.'

If the affected object is second or third person, however, there is ambiguity between a reading in which the affected object is plural and a reading in which the patient is plural. The preferred interpretation is that *-hnaa* refers to the affected object. This pattern is quite consistent with what holds for the applicative constructions, as we will see below.

Now, it might be argued alternatively that object agreement in Lai is always with an animate object. On this interpretation, affected objects would have agreement by virtue of their being animate, and not due to any independent requirement of the applicative marker *-piak*. The only means of finding out whether the applicative constructions have any independent influence on object marking is to look at what happens when both the base

object and the applicative object are animate. Some representative examples of this type of situation are given in (40)-(45).[7]

(40) ʔa-maʔ   ʔa-ń-zuʔl-piak
     3S-PRON   3SS-2SO-follow$_2$-BEN
     'He followed him for you.' (*'He followed you for him.')

(41) ʔa-maʔ   ʔa-ka-zuʔl-piak
     3S-PRON   3SS-1SO-follow$_2$-BEN
     'He followed him for me.' (*'He followed me for him.')

(42) naŋ-maʔ   ʔa-ka-zuʔl-piak
     2S-PRON   3SS-1SO-follow$_2$-BEN
     'He followed you for me.'

(43) ʔkaymaʔ   ʔa-ń-zuʔl-piak
     1S-PRON   3SS-2SO-follow$_2$-BEN
     'He followed me for you.'

(44) *naŋ-maʔ   ʔa-Ø-zuʔl-piak
     2S-PRON   3SS-3SO-follow$_2$-BEN
     'He followed you for him.'

(45) *kay-maʔ   ʔa-Ø-zuʔl-piak
     1S-PRON   3SS-3SO-follow$_2$-BEN
     'He followed me for him.'

As shown in these examples, when the affected object is either a first or a second person, and the patient is a third person (40 and 41), the *-piak* construction may be used as expected. The same holds when the affected object is first person and the patient is second person (42). However, if the affected object is second person and the patient is first person, the sentence is questionable at best (43). And if the affected object is third person, and the patient is either first or second person (44 and 45), the sentence is impossible. Note further that the object markers in (40) and (41) may not be interpreted as referring to the patient. Thus, in addition to the hierarchy animate>inanimate which determines object agreement, for verb-*piak* combinations there exists a hierarchy among animates (1 > 2 > 3) which determines object agreement when there is more than one animate object.

---

[7] The reader might wonder whether these examples are representative of transitives, given the semantics of the verb. *zuʔl* is as transitive a verb as 'kill' or 'beat' in Haka Lai.

If object marking in applicative constructions were determined solely on the basis of this hierarchy, however, we would expect that it would still be possible to form constructions using *-piak* where the affected object was third person and the other object was either second or third person. We might expect, for instance, that

(46) ʔa-maʔ   ʔa-ka-zuʔl-piak
     3S-PRON   3SS-1SO-follow$_2$-BEN
     *'He followed me for him.'

might have the intended reading as a possible meaning, but it may not.

Alongside the facts seen in (40)-(45), we should also consider another situation in which verbs must choose between two animate objects for purposes of agreement: causatives. The agreement pattern for causative verbs is demonstrated by (47)-(52).

(47) ka-ń-hmuʔ-ter
     1SS-2SO-see$_2$-CAUS
     'I made you see him.'

(48) na-ka-hmuʔ-ter
     2SS-1SO-see$_2$-CAUS
     'You made me see him.'

(49) naŋ-maʔ   ka-Ø-hmuʔ-ter
     2S-PRON   1SS-3SO-see$_2$-CAUS
     'I made him see you.'

(50) kay-maʔ   na-Ø-hmuʔ-ter
     1S-PRON   2SS-3SO-see$_2$-CAUS
     'You made him see me.'

(51) kay-maʔ   ʔa-ń-hmuʔ-ter
     1S-PRON   3SS-2SO-see$_2$-CAUS
     'He made you see me.'

(52) naŋ-maʔ   ʔa-ka-hmuʔ-ter
     2S-PRON   3SS-1SO-see$_2$-CAUS
     'He made me see you.'

Note that in the case of causative verbs, agreement is always with the causee, and there is no instantiation of the underived verb's patient in the agreement prefixes. These facts stand in contrast to the facts for applicative agreement with animates, for which there were restrictions on person compatibilities.

One explanation for these facts is that applicative constructions independently stipulate that object agreement references an argument with a particular semantic role, e.g. with the affected object in the case of the affected object applicative construction. If this stipulation conflicts with the other requirement of the system, i.e. that object marking be done on the basis of the hierarchy outlined earlier, then there is simply no way to use the applicative construction.

I will not present all of the details of agreement for every applicative construction type here. Suffice it to say that with the exception of instrumental applicatives, they all exhibit an identical pattern to the one seen for the affected object applicative construction.

A difference between the instrumental applicative and the other applicative constructions discussed here is that agreement is not with the instrument object, but rather with the base object, in the case of a transitive verb. The only time when it is possible to determine this is when there is a first or second person patient object, as in the following example:

(53) ka-naam   khaa   tsewmaŋ=niʔ   ʔa-ń-tshuʔn-naak
      1S POSS-knife   DEIC   Tsewmang=ERG   3SS-2SO-stab$_2$-INST
      'Tsewmang stabbed you with my knife.'

In (53), the instrument is not marked obliquely but it is not reflected in the object agreement of the verb, that property being restricted to the second singular object, presumably by virtue of its higher animacy.

The plurality of the applicative object may nonetheless be indicated by the postverbal plural object marker, though the aforementioned reservation concerning ambiguity applies if the argument which is marked in the main object marking slot is second or third person:

(54) tsewmaŋ=niʔ   ka-naam   khaa
      Tsewmang=ERG   1S POSS-knife   DEIC

      ʔa-ń-tshuʔn-naak-hnaa
      3SS-2SO-stab$_2$-INST-PL OBJ
      'Tsewmang stabbed you with my knives.'

Thus, with the exception of instrumental applicative constructions, object agreement in applicative constructions refers to the applicative object.

1.2.2.2. Discourse deixis.

There is a set of deictic elements in Lai which serve as demonstratives on the one hand, and discourse deictics on the other (seen, for instance in 54 above). Insofar as deictic elements like *khaa* and *tsuu* are also markers of a higher degree of definiteness, givenness, or familiarity to the speaker and the interlocutor (see Barnes 1998), there may be differences in the ability of these elements to be associated with particular noun phrases, depending on the level of topicality that the noun phrase has. Some studies (e.g. Rude 1986) have shown that in applicative constructions, the object associated with the applicative marker displays a higher degree of topicality than another object. There is a tendency for *khaa* to occur with the applicative object instead of the base object. I have also tested this tendency for *tsuu*, with almost identical results, but I will include only the data pertaining to *khaa* here.

Let us consider the occurrence of objects with discourse deictics in affected object applicative constructions. While both (55), in which *khaa* is associated with the base object,

(55) tsewmaŋ=niʔ   law   khaa   lawtlawpaa   ʔa-∅-thloʔ-piak
     Tsewmang=ERG   field   DEIC   farmer   3SS-3SO-hoe$_2$-BEN
     'Tsewmang hoed the field for the farmer.'

and (56), in which *khaa* is associated with the applicative object,

(56) tsewmaŋ=niʔ   lawtlawpaa   khaa   law   ʔa-∅-thloʔ-piak
     Tsewmang=ERG   farmer   DEIC   field   3SS-3SO-hoe$_2$-BEN
     'Tsewmang hoed the field for the farmer.'

are possible, the second sentence is judged to be more natural than the first one.

The same patterns are seen for additional benefactive applicative constructions (57 and the less natural 58),

(57) tsewmaŋ=niʔ   lawtlawpaa   khaa   law
     Tsewmang=ERG   farmer   DEIC   field

ʔa-Ø-thloʔ-tseʔm
3SS-3SO-hoe₂-ADD BEN
'Tsewmang hoed the field for the farmer (in addition to himself).'

(58) tsewmaŋ=niʔ   law   khaa   lawtlawpaa
     Tsewmang=ERG   field   DEIC   farmer

ʔa-Ø-thloʔ-tseʔm
3SS-3SO-hoe₂-ADD BEN
'Tsewmang hoed the field for the farmer (in addition to himself).'

comitative applicative constructions (59 and the less natural 60),

(59) tsewmaŋ=niʔ   lawtlawpaa   khaa   law   ʔa-Ø-thloʔ-pii
     Tsewmang=ERG   farmer   DEIC   field   3SS-3SO-hoe₂-COM
     'Tsewmang hoed the field with the farmer.'

(60) tsewmaŋ=niʔ   law   khaa   lawtlawpaa   ʔa-Ø-thloʔ-pii
     Tsewmang=ERG   field   DEIC   farmer   3SS-3SO-hoe₂-COM
     'Tsewmang hoed the field with the farmer.'

malefactive applicative constructions (61 and the less natural 62),

(61) tsewmaŋ=niʔ   lawtlawpaa   khaa   kheeŋ   ʔa-Ø-hloʔn-hnoʔ
     Tsewmang=ERG   farmer   DEIC   dish   3SS-3SO-throw₂-MAL
     'Tsewmang threw the dish at the farmer.'

(62) tsewmaŋ=niʔ   kheeŋ   khaa   lawtlawpaa   ʔa-Ø-hloʔn-hnoʔ
     Tsewmang=ERG   dish   DEIC   farmer   3SS-3SO-throw₂-MAL
     'Tsewmang threw the dish at the farmer.'

prioritive applicative constructions (63 and the less natural 64),

(63) tsewmaŋ=niʔ   lawtlawpaa   khaa   law   ʔa-Ø-thloʔ-kaʔn
     Tsewmang=ERG   farmer   DEIC   field   3SS-3SO-hoe₂-PRIOR
     'Tsewmang hoed the field ahead of the farmer.'

(64) tsewmaŋ=niʔ   law   khaa   lawtlawpaa   ʔa-Ø-thloʔ-kaʔn
     Tsewmang=ERG   field   DEIC   farmer   3SS-3SO-hoe₂-PRIOR
     'Tsewmang hoed the field ahead of the farmer.'

and relinquitive applicative constructions (65 and the less natural 66).

(65) tsewmaŋ=niʔ   lawtlawpaa   khaa   law   ʔa-Ø-thloʔ-taak
     Tsewmang=ERG   farmer   DEIC   field   3SS-3SO-hoe₂-RELINQ
     'Tsewmang left the farmer and hoed the field.'

(66) tsewmaŋ=niʔ   law   khaa   lawtlawpaa   ʔa-Ø-thloʔ-taak
      Tsewmang=ERG   field DEIC   farmer   3SS-3SO-hoe₂-RELINQ
      'Tsewmang left the farmer and hoed the field.'

The behavior of instrumental applicative constructions is somewhat different. *khaa* may *only* be used with the instrument (i.e. applicative) object. That is, while (67) is a possible sentence,

(67) tsewmaŋ=niʔ   tilooŋ   khaa   tivaa   ʔa-Ø-tan-naak
      Tsewmang=ERG   boat   DEIC   river   3SS-3SO-cross-INST
      'Tsewmang crossed the river with the boat.'

(68) is not.

(68) *tsewmaŋ=niʔ   tivaa   khaa   tilooŋ   ʔa-Ø-tan-naak
      Tsewmang=ERG   river   DEIC   boat   3SS-3SO-cross-INST
      'Tsewmang crossed the river with the boat.'

1.2.2.3. Left-dislocation.

Another property which is often diagnostic of objecthood is the accessibility of a putative object to extraction or dislocation constructions. In most Haka Lai texts and elicited examples, clauses have a strict SOV order. The only elements which consistently precede S are temporal and locative adjuncts, as underlined in (69) and (70).

(69) ʔa-hnuu=ʔaʔ   khan   ʔa-faa=lee   paŋaa=niʔ   tsun
      3S POSS-back=LOC   DEIC   3S POSS-son=PL   five=ERG   DEIC

      "kan-paa   phuu   kan-hlam-laay"   tiaʔ
      1P POSS-father   revenge   1PS-take-FUT   QUOT

      ʔan-tii=ʔii   ʔan-kal
      3PS-say=CONN   3PS-go
      'After that, his five sons said "We'll take revenge for our father," and they set out.'

(70) ...ʔan-kal-naak=ʔaʔ   tsakay=niʔ   tsun
      3PS-go-REL=LOC   tiger=ERG   DEIC

      ʔan-rak-Ø-seʔ-Thaan-hnaa=ʔii...
      3PS-PAST-3O-devour-ALSO-PL OBJ=CONN
      '...at the place they went to the tiger devoured them, too, and...'

Occasionally an object may precede the subject, however, as in the following text examples:

(71)   ...<u>ʔa-tshew-hmaʔn</u>   <u>khaa</u>   fapaa   paŋaa=niʔ   tsun
       3S POSS-half-even   DEIC   son   five=ERG   DEIC

ʔan-Ø-ʔay-khaw-tii-law
3PS-3SO-eat-able₁-DO-NEG
'...and the five sons were not even able to eat half of him.'

(72)   ...<u>ʔan-thal=leʔ</u>   <u>ʔan-lii-pool</u>   <u>khaa</u>   tsaaytsim-tee=niʔ   khan
       3P POSS-bow=AND   3P POSS-string-COLL   DEIC   mouse-DIM=ERG   DEIC

ʔa-rak-Ø-ʔay-diʔ=ʔii...
3SS-PAST-3SO-eat-EXHAUST=CONN
'...the little mouse had eaten all of their bows and strings, and...'

(73)   ...<u>na-puu</u>   <u>hii</u>   tsakay=niʔ
       2S POSS-grandfather   DEIC   tiger=ERG

ʔa-rak-Ø-seʔ=ʔii
3SS-PAST-3SO-eat=CONN
'...a tiger ate your grandfather, and...'

(74)   <u>ʔii</u>   <u>tsakay kahriŋʔoʔy</u>   <u>ʔa-hŋooŋ</u>   <u>tsuu</u>   paalaw=niʔ   tsun
       and   tiger Kahriŋʔoʔy   3S POSS-neck   DEIC   Paalaw=ERG   DEIC

ʔa-Ø-tan=ʔii...
3SS-3SO-cut=CONN
'And Paalaw cut the tiger Kahriŋʔoʔy's neck, and...'

It is unclear what the pragmatics of this dislocation is, but it does typically occur with heavy elements, which is consistent with what Hawkins 1994 claims about the treatment of heavy elements in head-final languages. It is nonetheless of interest in the case of verbs with multiple objects to determine whether there are any restrictions on which object may be left-dislocated. In fact it turns out that the applicative object interpretation is preferred for dislocated objects in these situations.

The left-dislocation facts for affected object applicative constructions and the other applicative constructions at first seem a bit convoluted, but they are remarkably consistent from one applicative construction to the next. For a sentence like (75),

(75) tsewmaŋ=niʔ   taaynaamkooŋ   niihuu
      Tsewmang=ERG   Taaynaamkoong   Niihuu

      ʔa-∅-tshiʔm-piak
      3SS-3SO-say₂-BEN
      'Tsewmang said it to Niihuu for Taaynaamkoong.'

it is possible to left-dislocate the affected object, as in (76).

(76) taaynaamkooŋ   tsewmaŋ=niʔ   niihuu
      Taaynaamkoong   Tsewmang=ERG   Niihuu

      ʔa-∅-tshiʔm-piak
      3SS-3SO-say₂-BEN
      'Tsewmang said it to Niihuu for Taaynaamkoong.'
      *'Tsewmang said it to Taaynaamkoong for Niihuu.'

It is not allowable, however, to dislocate the non-affected object, as in (77).

(77) niihuu   tsewmaŋ=niʔ   taaynaamkooŋ
      Niihuu   Tsewmang=ERG   Taaynaamkoong

      ʔa-∅-tshiʔm-piak
      3SS-3SO-say₂-BEN
      *'Tsewmang said it to Niihuu for Taaynaamkoong.'

The sentence in (77) would have to mean 'Tsewmang said it to Taaynaamkoong for

Niihuu', i.e. the left-dislocated noun phrase has to be the affected object.

A further complication is the following: if the affected object is marked by *khaa* or

another discourse deictic, the other object *may* be left dislocated, as in (78).

(78) niihuu   tsewmaŋ=niʔ   taaynaamkooŋ   khaa
      Niihuu   Tsewmang=ERG   Taaynaamkoong   DEIC

      ʔa-∅-tshiʔm-piak
      3SS-3SO-say₂-BEN
      'Tsewmang said it to Niihuu for Taaynaamkoong.'

If both noun phrases are modified by discourse deictics, the interpretation of a left

dislocated noun phrase is that it must be the applicative object, as in (79):

(79) taaynaamkooŋ   khaa   tsewmaŋ=niʔ   niihuu   khaa
      Taaynaamkoong   DEIC   Tsewmang=ERG   Niihuu   DEIC

ʔa-∅-tshiʔm-piak
3SS-3SO-say₂-BEN
'Tsewmang said it to Niihuu for Taaynaamkoong.'

All other possible combinations with discourse deictics yield the same result.

Thus, if one of the noun phrases cooccurs with a discourse deictic, it is interpreted as the applicative object, and either object may be left dislocated. If both or neither of the noun phrases is marked by a discourse deictic, only the object associated with the applicative marker may be left-dislocated.

Left dislocation shows identical patterning in additional benefactive applicative constructions (81 and 82 for 80),

(80) tsewmaŋ=niʔ   taaynaamkooŋ   niihuu
      Tsewmang=ERG   Taaynaamkoong   Niihuu

      ʔa-∅-thsiʔm-tseʔm
      3SS-3SO-say₂-ADD BEN
      'Tsewmang said it to Niihuu for Taaynaamkoong, in addition to for himself.'

(81) taaynaamkooŋ   tsewmaŋ=niʔ   niihuu
      Taaynaamkoong   Tsewmang=ERG   Niihuu

      ʔa-∅-thsiʔm-tseʔm
      3SS-3SO-say₂-ADD BEN
      'Tsewmang said it to Niihuu for Taaynaamkoong, in addition to for himself.'
      *'Tsewmang said it to Taaynaamkoong for Nihuu, in addition to for himself.'

(82) niihuu   tsewmaŋ=niʔ   taaynaamkooŋ   khaa
      Niihuu   Tsewmang=ERG   Taaynaamkoong   DEIC

      ʔa-∅-thsiʔm-tseʔm
      3SS-3SO-say₂-ADD BEN
      'Tsewmang said it to Niihuu for Taaynaamkoong, in addition to for himself.'
      *'Tsewmang said it to Taaynaamkoong for Nihuu in addition to for himself.'

in comitative applicative constructions (84 and 85 for 83),

(83) tsewmaŋ=niʔ   taaynaamkooŋ   niihuu
      Tsewmang=ERG   Taaynaamkoong   Niihuu

      ʔa-∅-tsooy-pii
      3SS-3SO-carry-COM
      'Tsewmang carried Niihuu with Taaynaamkoong.'

(84)   taaynaamkooŋ   tsewmaŋ=niʔ   niihuu
          Taaynaamkoong   Tsewmang=ERG   Niihuu

          ʔa-∅-tsooy-pii
          3SS-3SO-carry-COM
          'Tsewmang carried Niihuu with Taaynaamkoong.'
          *'Tsewmang carried Taaynaamkoong with Nihuu.'

(85)   niihuu   tsewmaŋ=niʔ   taaynaamkooŋ   khaa
          Niihuu   Tsewmang=ERG   Taaynaamkoong   DEIC

          ʔa-∅-tsooy-pii
          3SS-3SO-carry-COM
          'Tsewmang carried Niihuu with Taaynaamkoong.'
          *'Tsewmang carried Taaynaamkoong with Nihuu.'

malefactive applicative constructions (87 and 88 for 86),

(86)   meenrihay=niʔ   taaynaamkooŋ   tsewmaŋ
          Meenrihay=ERG   Taaynaamkoong   Tsewmang

          ʔa-∅-teʔŋ-hnoʔ
          3SS-3SO-trick-MAL
          'Meenrihay tricked Tsewmang to the detriment of Taaynaamkoong.'

(87)   taaynaamkooŋ   meenrihay=niʔ   tsewmaŋ
          Taaynaamkoong   Meenrihay=ERG   Tsewmang

          ʔa-∅-teʔŋ-hnoʔ
          3SS-3SO-trick-MAL
          'Meenrihay tricked Tsewmang to the detriment of Taaynaamkoong.'
          *'Meenrihay tricked Taaynaamkoong to the detriment of Tsewmang.'

(88)   tsewmaŋ   meenrihay=niʔ   taaynaamkooŋ   khaa
          Tsewmang   Meenrihay=ERG   Taaynaamkoong   DEIC

          ʔa-∅-teʔŋ-hnoʔ
          3SS-3SO-trick-MAL
          'Menrihay tricked Tsewmang to the detriment of Taaynaamkoong.'
          *'Meenrihay tricked Taaynaamkoong to the detriment of Tsewmang.'

prioritive applicative constructions (90 and 91 for 89),

(89)   tsewmaŋ=niʔ   taaynaamkooŋ   meenrihay
          Tsewmang=ERG   Taaynaamkoong   Meenrihay

          ʔa-∅-ton-kaʔn
          3SS-3SO-meet$_2$-PRIOR
          'Tsewmang met Meenrihay ahead of Taaynaamkoong.'

(90) taaynaamkooŋ   tsewmaŋ=niʔ   meenrihay
     Taaynaamkoong   Tsewmang=ERG   Meenrihay

ʔa-∅-ton-kaʔn
3SS-3SO-meet₂-PRIOR
'Tsewmang met Meenrihay ahead of Taaynaamkoong.'
*'Tsewmang met Taaynaamkoong ahead of Meenrihay.'

(91) meenrihay   tsewmaŋ=niʔ   taaynaamkooŋ   khaa
     Meenrihay   Tsewmang=ERG   Taaynaamkoong   DEIC

ʔa-∅-ton-kaʔn
3SS-3SO-meet₂-PRIOR
'Tsewmang met Meenrihay ahead of Taaynaamkoong.'
*'Tsewmang met Taaynaamkoong ahead of Meenrihay.'

and relinquitive applicative constructions (93 and 94 for 92).

(92) tsewmaŋ=niʔ   meenrihay   taaynaamkooŋ
     Tsewmang=ERG   Meenrihay   Taaynaamkoong

ʔa-∅-ton-taak
3SS-3SO-meet₂-RELINQ
'Tsewmang left Meenrihay and met Taaynaamkoong.'

(93) meenrihay   tsewmaŋ=niʔ   taaynaamkooŋ
     Meenrihay   Tsewmang=ERG   Taaynaamkoong

ʔa-∅-ton-taak
3SS-3SO-meet₂-RELINQ
'Tsewmang left Meenrihay and met Taaynaamkoong.'
*'Tsewmang left Taaynaamkoong and met Meenrihay.'

(94) taaynaamkooŋ   tsewmaŋ=niʔ   meenrihay   khaa
     Taaynaamkoong   Tsewmang=ERG   Meenrihay   DEIC

ʔa-∅-ton-taak
3SS-3SO-meet₂-RELINQ
'Tsewmang left Meenrihay and met Taaynaamkoong.'
*'Tsewmang left Taaynaamkoong and met Meenrihay.'

In the case of instrumental applicative constructions, however, a somewhat different picture emerges. Since in most cases it is clear from animacy considerations which of two objects is the instrumental object, one would expect that either may be left-dislocated. Dislocations of the instrument underlined in (95), as in (96),

(95) tsewmaŋ=niʔ   taaynaamkooŋ   <u>naam</u>
      Tsewmang=ERG   Taaynaamkoong   <u>knife</u>

      ʔa-∅-tshuʔn-naak
      3SS-3SO-stab$_2$-INST
      'Tsewmang stabbed Taaynaamkoong with the knife.'

(96) naam (khaa) tsewmaŋ=niʔ   taaynaamkooŋ
      knife DEIC   Tsewmang=ERG   Taaynaamkoong

      ʔa-∅-tshuʔn-naak
      3SS-3SO-stab$_2$-INST
      'Tsewmang stabbed Taaynaamkoong with the knife.'

are in fact judged to be preferable to dislocations of the non-instrument, as in (97).

(97) ?taaynaamkooŋ   tsewmaŋ=niʔ   naam
      Taaynaamkoong   Tsewmang=ERG   knife

      ʔa-∅-tshuʔn-naak
      3SS-3SO-stab$_2$-INST
      'Tsewmang stabbed Taaynaamkoong with the knife.'

The usual means of allowing the non-applicative object to be dislocated seen up to now is

to associate the applicative object with a discourse deictic; this does not have the usual

effect in a sentence like (98), however, which is considered odd.

(98) ?taaynaamkooŋ   tsewmaŋ=niʔ   naam khaa
      Taaynaamkoong   Tsewmang=ERG   knife DEIC

      ʔa-∅-tshuʔn-naak
      3SS-3SO-stab$_2$-INST
      'Tsewmang stabbed Taaynaamkoong with the knife.'

In a situation where either object could potentially be understood as the instrument,

a dislocated noun will always be interpreted as the instrument, as in the following,

(99) tsaʔuk tsewmaŋ=niʔ   kheeŋ
      book   Tsewmang=ERG   dish

      ʔa-∅-neʔn-naak
      3SS-3SO-pile.on.top.of-INST
      'Tsewmang used the books to pile on top of the dishes.'

(100) kheeŋ   tsewmaŋ=niʔ   tsaʔuk
      dish   Tsewmang=ERG   book

ʔa-Ø-neʔn-naak
3SS-3SO-pile.on.top.of-INST
'Tsewmang used the dishes to pile on top of the books.'

and even as in (101) and (102), where the undislocated object occurs with a discourse

deictic.

(101) tsaʔuk   tsewmaŋ=niʔ   kheeŋ   khaa
      book   Tsewmang=ERG   dish   DEIC

ʔa-Ø-neʔn-naak
3SS-3SO-pile.on.top.of-INST
'Tsewmang used the books to pile on top of the dishes.'

(102) kheeŋ   tsewmaŋ=niʔ   tsaʔuk   khaa
      dish   Tsewmang=ERG   book   DEIC

ʔa-Ø-neʔn-naak
3SS-3SO-pile.on.top.of-INST
'Tsewmang used the dishes to pile on top of the books.'

Thus, there appears to be a strong preference for dislocation of the instrumental object over

dislocation of the base object. Otherwise, this section has shown that there is a preference

with the other applicative constructions to dislocate the applicative object, though in

principle both objects may be dislocated.

1.2.2.4.   Reciprocalization.

Next, the ability of an object to be understood as reflexive or reciprocal with the

subject has often been taken to be an indicator of objecthood. In the discussion of verbal

agreement above, I noted that if a Lai subject is coreferential with its object, special object

agreement is used. When the subject is animate and both objects are animate, there could in

theory be cases in which either of the objects is coreferential with the subject. For instance,

consider the English sentences (103) and (104).

(103) We met each other for the children.

(104) We met the children for each other.

In the first case, the expression 'each other' is the patient, and in the second case, the expression 'each other' is the beneficiary; in both sentences 'each other' is coreferential with 'we'. It turns out that in Lai, if there are two animate objects in an applicative construction, in all types but the instrumental applicative construction, only the applicative object may be understood as reciprocal with the subject.

For instance, while it might be expected that either object of an affected object applicative construction could be coreferential with the subject, only the beneficiary/maleficiary argument may be. So, a sentence like (105),

(105) tsewmaŋ   ?an-?ii-tsho?n-piak
       Tsewmang   3PS-REFL-talk.to$_2$-BEN
       'They talked to Tsewmang for the benefit of each other.'

cannot instead have the meaning 'They talked to each other for the benefit of Tsewmang,' in which the reciprocal marker would refer to the patient.

Identical facts are seen for additional benefactive applicative constructions (106),

(106) tsewmaŋ   ?an-?ii-tsho?n-tse?m
       Tsewmang   3PS-REFL-talk.to$_2$-ADD BEN
       'They talked to Tsewmang for each other, in addition to for themselves.'
       *'They talked to each other for Tsewmang in addition to their own benefit.'

comitative applicative constructions (107),

(107) tsewmaŋ   ?an-?ii-puak-pii
       Tsewmang   3PS-REFL-carry$_2$-COM
       'They carried Tsewmang with each other (i.e. they both worked to carry him).'
       * 'They carried each other with Tsewmang (i.e. Tsewmang worked with each of them in order for them to carry each other in turn).'

malefactive applicative constructions (108),

(108) ?an-vaa-lee   khaa   ?an-?ii-tha?-hno?-hnaa
       3P POSS-husband-PL   DEIC   3PS-REFL-kill$_2$-MAL-PL OBJ
       'They killed their husbands to the detriment of each other.'
       * 'They killed each other to the detriment of their husbands.'

and relinquitive applicative constructions (109).

(109) tsewmaŋ   ?an-?ii-tso?n-taak-vee-vee
       Tsewmang   3PS-REFL-talk.to$_2$-RELINQ-also-also
       'They left each other and talked to Tsewmang.'
       * 'They left Tsewmang and talked to each other.'

I have not managed to find a context in which it is possible for the prioritive applicative object to be understood as reflexive or reciprocal with the subject. Since the semantics of this applicative marker makes it clear that the subject performs the action in advance of the applicative object, this type of situation appears to be logically impossible.

Interestingly, though, the other situation, in which coreference would be between the subject and the base object, does not appear to be possible either. Thus, in order to express something like 'They met each other before Taaynaamkoong and Tsewmang met each other', where we might expect something like *taaynaamkooŋ=lee tsewmaŋ ʔan-ʔii-ton-kaʔn*, the applicative construction does not occur. Instead, (110) would be used to express this.

(110) taaynaamkooŋ=lee   tsewmaŋ   ʔan-ʔii-ton   hlaan=ʔaʔ
Taaynaamkoong=AND   Tsewmang   3PS-REFL-meet$_2$ front=LOC

ʔan-ʔii-toŋ
3PS-REFL-meet$_1$

(110) consists of two clauses with separate reciprocal events. Thus, even though it seems logically impossible for coreference to exist between the subject and applicative object, in prioritive applicative constructions, coreference between the subject and the base object appears to be disallowed as well, which might be taken as a direct indication that the base object or patient does not have access to this object property in this construction.

Instrumental applicative constructions, however, part ways with the other constructions when it comes to the possible interpretations of reciprocal markers associated with them. Thus in (111),

(111) tsewmaŋ   ʔan-ʔii-tleʔr-naak
Tsewmang   3PS-REFL-threaten-INST
'They used Tsewmang to threaten each other.'

the reciprocal refers to the base object of the verb rather than to the applicative object (Tsewmang). This sentence cannot be interpreted to mean 'They used each other to threaten Tsewmang,' which is what we would expect if the applicative object could be coreferential with the subject.

1.2.2.5. Purposive control.

Finally, relationships involving interclausal control are more likely to involve core arguments (such as subject and direct object) than peripheral objects. Thus, they have often been used to diagnose the object status in multiple-object constructions. There is a (subordinate) purposive clause type in Lai in which the subject is preferentially expressed only by pronominal agreement. The subject of the subordinate clause may be coreferential with the object of the main clause, as in (112).

(112) haaw-kaa leeŋ ʔa-zaʔw-khoʔ-naak tsaa diŋ=ʔaʔ
   fence-door outside 3SS-look-able₂-NOMLZR sake PURP=LOC

   hŋaaktshiapaa ka-∅-tsooy
   boy   1SS-3SO-lift
   'I lifted the boy so that he could see over the gate.'

It is of interest to see if there are any restrictions on which object of an applicative verb may be interpreted as coreferential with the subject of such purposive clauses. As it turns out, again only in the case of the instrumental applicative is it possible for the base object to control the subject position of the purposive clause. In all other cases, only the applicative object may do this.

With purposive clauses subordinated to clauses containing an affected object applicative construction, only the applicative object of the main clause may be coreferential with the subject of the subordinate clause. As indicated in the glosses, either object in (113) may be interpreted as coreferential with the subject of the purposive clause.

(113) door=ʔii ʔa-kal-khoʔ-naak   tsaa diŋ=ʔaʔ
   market=LOC 3SS-go-able₂-NOMLZR sake PURP=LOC

   lawthlawpaa tsewmaŋ ka-∅-ton-piak
   farmer   Tsewmang 1SS-3SO-meet₂-BEN
   'I met Tsewmang for the farmerᵢ so that heᵢ could go to the market.'
OR   'I met the farmer for Tsewmangᵢ so that heᵢ could go the the market.'

Note, however, that the object which is the controller of the subject in the purposive clause is always interpreted as the applicative object of the main clause. Thus, (113) can not mean

'I met the farmer₁ for Tsewmang so that he₁ could go to the market' or 'I met Tsewmang₁ for the farmer so that he₁ could go to the market.'

An identical pattern is seen for additional beneficiary applicative constructions (114),

(114)   door=ʔii   ʔa-kal-khoʔ-naak   tsaa   diŋ=ʔaʔ
           market=LOC 3SS-go-able$_2$-NOMLZR   sake   PURP=LOC

           lawthlawpaa tsewmaŋ   ka-Ø-ton-tseʔm
           farmer   Tsewmang   1SS-3SO-meet$_2$-ADD BEN
           'I met Tsewmang for the farmer₁ (in addition to my own benefit) so that he₁ could go to the market.'
           'I met the farmer for Tsewmang₁ (in addition to my own benefit) so that he₁ could go the the market.'
           *'I met Tsewmang₁ for the farmer (in addition to my own benefit) so that he₁ could go to the market.'
           *'I met the farmer₁ for Tsewmang (in addition to my own benefit) so that he₁ could go to the market.'

comitative applicative constructions (115),

(115)   ʔa-Taʔ-law-naak   tsaa   diŋ=ʔaʔ
           3SS-cry$_2$-NEG-NOMLZR   sake   PURP=LOC

           tsewmaŋ=niʔ   hŋaaktshiapaa lawthlawpaa   ʔa-Ø-ton-pii
           Tsewmang=ERG   boy   farmer   3SS-3SO-meet$_2$-COM
           'Tsewmang met the farmer with the boy₁ so that he₁ wouldn't cry.'
OR   'Tsewmang met the boy with the farmer₁ so that he₁ wouldn't cry.'
           *'Tsewmang met the farmer₁ with the boy so that he₁ wouldn't cry'
           *'Tsewmang met the boy₁ with the farmer so that he₁ wouldn't cry'

malefactive applicative constructions (116),

(116)   ʔa-Taʔ-naak   tsaa   diŋ=ʔaʔ   tsewmaŋ=niʔ
           3SS-cry$_2$-NOMLZR   sake   PURP=LOC   Tsewmang=ERG

           taaynaamkooŋ   lawthlawpaa ʔa-Ø-nam-hnoʔ
           Taaynaamkoong   farmer   3SS-3SO-push-MAL
           'Tsewmang pushed the farmer to the detriment of Taaynaamkoong₁ so that he₁ would cry.'
OR   'Tsewmang pushed Taaynaamkoong to the detriment of the farmer₁ so that he₁ would cry.'
           *'Tsewmang pushed Taaynaamkoong₁ to the detriment of the farmer so that he₁ would cry.'
           *'Tsewmang pushed the farmer₁ to the detriment of Taaynaamkoong so that he₁ would cry.'

prioritive applicative constructions (117),

(117) ʔa-Taʔ-naak   tsaa   diŋ=ʔaʔ   tsewmaŋ=niʔ
       3SS-cry₂-NOMLZR   sake   PURP=LOC   Tsewmang=ERG

       hŋaaktshiapaa   lawthlawpaa   ʔa-Ø-ton-kaʔn
       boy   farmer   3SS-3SO-meet₂-PRIOR
       'Tsewmang met the farmer ahead of the boyᵢ so that heᵢ would cry.'
OR   'Tsewmang met the boy ahead of the farmerⱼ so that heⱼ would cry.'
       *'Tsewmang met the farmerⱼ ahead of the boy so that heⱼ would cry.'
       *'Tsewmang met the boyᵢ ahead of the farmer so that heᵢ would cry.'

and relinquitive applicative constructions (118).

(118) door=ʔii   ʔa-kal-khoʔ-naak   tsaa   diŋ=ʔaʔ
       market=LOC   3SS-go-able₂-NOMLZR   sake   PURP=LOC

       lawthlawpaa   tsewmaŋ   ka-Ø-ton-taak
       farmer   Tsewmang   1SS-3SO-meet₂-RELINQ
       'I left Tsewmangᵢ and met the farmer so that heᵢ could go to the market.'
OR   'I left the farmerⱼ and met Tsewmang so that heⱼ could go the the market.'
       *'I left Tsewmang and met the farmerⱼ so that heⱼ could go to the market.'
       *'I left the farmer and met Tsewmangᵢ so that heᵢ could go to the market.'

The facts for purposive clauses linked to main clauses with instrumental applicatives are different. As seen from the possible interpretations of (119), it is the *patient* of threatening which controls the reference of the subject agreement marker in the purposive clause rather than the instrument of threatening.

(119) ʔa-Taʔ-naak   tsaa   diŋ=ʔaʔ   tsewmaŋ=niʔ
       3SS-cry-NOMLZR   sake   PURP=LOC   Tsewmang=ERG

       lawthlawpaa   taaynaamkooŋ   ʔa-Ø-tleʔr-naak
       farmer   Taaynaamkoong   3SS-3SO-threaten-INST
       'Tsewmang used the farmer to threaten Taaynaamkoongᵢ so that heᵢ would cry.'
OR   'Tsewmang used Taaynaamkoong to threaten the farmerⱼ so that heⱼ would cry.'

This sentence could *not* mean either 'Tsewmang used the farmerᵢ to threaten Taaynaamkoong so that heᵢ would cry' or 'Tsewmang used Taaynaamkoongᵢ to threaten the farmer so that heᵢ would cry,' which would be expected if the instrument object could control subject marking in the purposive clause.

1.2.2.6. Criteria which do not distinguish applicative objects.

While the preceding criteria are sufficient to distinguish the two objects in applicative constructions in terms of their morphosyntax, there are also a couple of standard

criteria for objecthood which do not distinguish between them. First of all, order with respect to the verb appears to have no relevance. Second, ability to serve as the head of an object relative clause is typically a property that both of the objects in an applicative construction exhibit in Lai, and so does not serve to distinguish one or the other as more object-like. Since this property does not distinguish between objects, I will not provide a full discussion of the relevant data here. The pattern is illustrated briefly in (120) and (121). (120) shows that a strategy involving the relativizer -*mii* is used to relativize on patient objects.

(120) [lawthlawpaa=niʔ   ʔa-Ø-thloʔ-mii]   law   khaa
       farmer=ERG   3SS-3SO-hoe-REL   field   DEIC

       ka-Ø-hmuʔ
       1SS-3SO-see
       'I saw the field the farmer hoed.'

In (121) we see that both of the objects of a relinquitive applicative may be relativized on using this strategy:

(121) a.   [taaynaamkooŋ   law   ʔa-Ø-thloʔ-taak-mii]
          Taaynaamkoong   field   3SS-3SO-hoe-RELINQ-REL

          lawthlawpaa   khaa   ka-Ø-hmuʔ
          farmer   DEIC   1SS-3SO-see
          'I saw the farmer that Taaynaamkoong left and hoed the field.'

      b.   [taaynaamkooŋ   lawthlawpaa   ʔa-Ø-thloʔ-taak-mii]
          Taaynaamkoong   farmer   3SS-3SO-hoe-RELINQ-REL

          law   khaa   ka-Ø-hmuʔ
          field   DEIC   1SS-3SO-see
          'I saw the field that Taaynaamkoong left the farmer and hoed.'

Only in the case of instrumental applicatives is there any difference. Relativization on an instrumental object involves a demonstrably different construction utilizing the same morphology found in the applicative construction.[8] Finally, Haka Lai has no valence-affecting constructions which refer to objects, such as passive or antipassive, which would allow us to distinguish between multiple objects of applicative verbal complexes.

---

8   For a fuller discussion of relativization in Haka Lai see Peterson 1998a.

1.2.2.7. Summary.

The main observations of the preceding sections are summarized in Table 1.3. For each applicative construction type, the ability of the base and applicative objects to display a particular object property is evaluated (yes, marginal, or no).

Table 1.3. Object properties for objects in applicative constructions.

type:	Property:	object agreement	discourse deictic	left-dislocation	reciprocal coreference	purposive control
affected object	base obj: ben:	marginal yes	marginal yes	marginal yes	no yes	no yes
additional benefactive	base obj: add. ben:	marginal yes	marginal yes	marginal yes	no yes	no yes
comitative	base obj: com:	marginal yes	marginal yes	marginal yes	no yes	no yes
malefactive	base obj: mal:	marginal yes	marginal yes	marginal yes	no yes	no yes
prioritive	base obj: prior:	marginal yes	marginal yes	marginal yes	no ?	no yes
relinquitive	base obj: relinq:	marginal yes	marginal yes	marginal yes	no yes	no yes
instrumental	base obj: inst:	yes marginal	no yes	(marginal) yes	yes no	yes no

It is clear that in these constructions, except in the case of instrumental applicatives, there is a tendency for the applicative object to display the object properties, often in preference to or to the exclusion of the base object.

As will be seen in subsequent chapters, these patterns are consistent with what we know about how applicative constructions pattern in other languages. The first six types of applicative construction have animates, usually entities with high relative topicality, as their prototypical applicative object. Thus, assuming that the phenomena examined here have largely to do with accessing entities with relatively high topicality (e.g. replacing them with an object pronominal, marking them with a discourse deictic, or left-dislocating them to a position which is likely to involve topicalization of them in some sense) it is appropriate that such applicative objects should have access to most of these object properties. The other properties—the ability to be a reflexive anaphor for a subject argument and to control reference of the subject in a subordinate purposive clause—are also properties which animates are likely to display in general. In the cases of benefactive applicative

constructions (as we will see in the following chapter), an animate applicative object almost invariably has extensive, and often exclusive access to object properties.

On the other hand, since instrumental applicatives usually have inanimates as their applicative object, their access to object properties is more limited. In particular, there is probably little need for them to be reciprocal with a subject or for them to control the subject reference of purposive constructions, and hence they do not display these properties. Only the phenomena examined which have purely to do with indicating relatively high topicality of the instrument (left-dislocation and association with a discourse deictic) are consistently exhibited by instrumental applicative objects. This again conforms to what we know of the morphosyntactic status of objects in instrumental applicative constructions from elsewhere.

Chapter 2

Parameters of variation in applicative constructions

2.1. Introduction.

In this chapter, I consider ways in which the morphosyntactic characteristics of applicative constructions vary.[1] Along the way, I will point out tendencies in applicative system variation (e.g. the tendency for beneficiary/recipient applicative constructions to be obligatory for the encoding of a beneficiary/recipient, tendencies having to do with which object exhibits what object properties, and so on) on the basis of available descriptions.

2.2. Semantic role of the applicative object.

The first parameter of variation I will consider is the semantic role of the applicative object. As will be shown in Chapter 5, if a language has a construction which could be characterized as an applicative, it is most common that the semantic role of the applicative object will be that of recipient and/or beneficiary/maleficiary. There are a number of languages, however, in which the role of the applicative object is *not* limited to recipient or beneficiary/maleficiary.

2.2.1. Morphologically distinct applicative construction markers.

In some cases, each applicative construction is marked by a distinct piece of verbal morphology. For instance, in Haka Lai, as discussed in Chapter 1, there is the following battery of applicative constructions:

(1)   a. Affected argument (benefactive or malefactive) applicative object:
        tsewmaŋ=niʔ   door=ʔaʔ   ʔa-ka-kal-piak
        tsewmang=ERG   market=ALL/LOC   3SS-1SO-go-BEN
        'Tsewmang went to the market for me.'

        b. Additional benefactive applicative object:
        thiŋ   ʔa-ka-laak-tseʔm
        wood 3SS-1SO-carry$_2$-ADD BEN
        'He carried wood for me (in addition to carrying wood for himself).'

---

[1]   Some of these properties were noticed in conjunction with attempts to formulate particular synchronic approaches to grammatical relations; these approaches are discussed in some detail in Chapter 6.

c. Comitative applicative object:
ka-law   ʔan-ka-thloʔ-pii
1S POSS-field 3PS-1SO-hoe$_2$-COM
'They hoed my field (together) with me.'

d. Malefactive applicative object:
rul=niʔ   ka-ʔin=ʔaʔ   ʔa-ka-luʔ-hnoʔ
snake=ERG   1S POSS-house=ALL/LOC   3SS-1SO-enter$_2$-MAL
'A snake came into my house on me.'

e. Prioritive applicative object:
booi   ʔa-ka-toon-kaʔn
chief   3SS-1SO-meet$_2$-PRIOR
'He met the chief ahead of/before me.'

f. Relinquitive applicative object:
ʔa-law   ʔa-ka-thloʔ-taak
3S POSS-field 3SS-1SO-work$_2$-RELINQ
'He left me and hoed his field.'

g. Instrument applicative object:
tiilooŋ khaa   tivaa   kan-Ø-tan-naak
boat   TOP   river   1SS-3SO-cross$_2$-INST
'We used the boat to cross the river.'

In all but the last example, the applicative object is a first person singular entity. However, in each sentence, the role of the applicative object is different. In fact, some of the applicative objects in these constructions defy simple characterization in terms of thematic role. For instance, the additional beneficiary applicative includes not only the information that the action is performed for the benefit of some object, but that there is also an unexpressed beneficiary argument coreferential with the subject. The relinquitive applicative specifies that the action involves motion of the subject away from what is essentially a source object.

Consider also the family of applicative constructions in Nomatsiguenga (Arawakan, Peru), which constitutes a similar case:

(2)   Nomatsiguenga (Wise 1971 as cited by Payne 1990:222-223).
       a. Benefactive applicative object:
       pablo i-pë-ne-ri   ariberito   tiapa   singi
       Paul   he-give-ben.app-masc   Albert   chicken   corn
       'Paul gave the chickens corn for Albert.'

b. Allative applicative object:

pablo i-hoka-te-ta-be-ka-ri   ariberito   i-gotsirote
Paul   he-throw-toward.app-ep-frust-rflex-masc   albert   his-knife
'Paul threw his knife toward Albert.'

c. Locative applicative object:

pablo i-kenga-mo-ta-h-i-ri   ariberito
Paul   he-narrate-in.presence.of.app-ep-again-tense-masc   Albert
'Paul narrated it in Albert's presence.'

d. Associative (comitative) applicative object:

Juan i-komota-ka-k-e-ri   pablo otsegoho
John   he-dam.stream-assoc.app-indic-tense-masc   Paul   river.branch
'John dammed the river branch with Paul.'

e. Reason applicative object:

pablo i-kisa-biri-k-e-ri   juan
Paul   he-be.angry-reason.app-indic-tense-masc   John
'Paul was angry on account of John.'

f. Purpose applicative object:

ni-ganta-si-t-ë-ri   hompiki
I-send-purp.app-ep-tense-masc   pills
'I sent him for pills.'

g. Instrumental applicative object:

ora pi-nets-an-t-i-ma-ri   hitatsia   negativo
that you-look.at-inst.app-ep-tense-fut.rflex-masc name   negative
'Look at it (the sun during an eclipse) with that which is called a negative.'

The multiple applicative type of language, though less common than the type which has only a beneficiary/recipient applicative construction, is found in a variety of locations: Salishan (Northwest coast)–recipient, beneficiary, causal, directional, and in some cases, instrumental (Gerdts 1988); Nez Perce (Sahaptian-Klamath, Northwest U.S./Canada)–beneficiary, recipient, directional, allative, instrumental, comitative–at least (Aoki 1969, Rude 1985), Tepehua (Totonac-Tepehua, Mexico)–beneficiary, instrumental, directional, comitative (Watters 1988), Yimas (Sepik Hill, Papua New Guinea)–beneficiary, comitative, allative, and perhaps others (Foley 1991). So, the occurrence of multiple applicative constructions is not simply an isolated phenomenon, and Zone-J Bantu languages, like Kinyarwanda (where they have been investigated most) are far from the most extreme instance of it.

2.2.2. Non-morphologically distinct applicative construction markers.

On the other hand, the morphological indicator of the construction may not change form with the thematic role of the applicative object, as in many Bantu languages. For instance, (3) gives Kichaga (Bantu, Tanzania) sentences with applicative objects bearing a variety of semantic roles. Note, however, that the form of the applicative suffix, *-i*, remains constant.

(3)   Kichaga (Bresnan and Moshi 1990:148-149).
       a. Benefactive/recipient applicative object:
       n-a-i-lyi-i-a   m-ka   k-elya
       foc-1s-pr-eat-app-fv   1-wife 7-food
       'He is eating food for/on his wife.'

       b. Locative applicative object:
       n-a-i-lyi-i-a   m-ri-nyi   k-elya
       foc-1s-pr-eat-app-fv   3-homestead   7-food
       'He is eating food at the homestead.'

       c. Instrumental applicative object:
       n-a-i-lyi-i-a   ma-woko   k-elya
       foc-1s-pr-eat-app-fv   6-hand   7-food
       'He is eating food with his hands.'

       d. Circumstantial applicative object:
       n-a-i-lyi-i-a   njaa   k-elya
       foc-1s-pr-eat-app-fv   9.hunger   7-food
       'He is eating because of hunger.'

A similar case is Tukang Besi (Austronesian, Sulawesi):

(4)   Tukang Besi (Donohue 1995:215-6).
       a. Benefactive/recipient applicative object:
       no-helo'a-ako   te   ina-no
       3R-cook-APPL   CORE   mother-3 POSS
       'They cooked for their mother.'

       b. Instrumental applicative object:
       no-hugu-ako   te   poda-no
       3R-chop-APPL   CORE   knife-3 POSS
       'They chopped with their knives.'

       c. Circumstantial applicative object:
       no-mate-ako   te   buti
       3R-die-APPL   CORE   fall
       'They died in a fall.'

    d. Purpose applicative object:
```
no-lemba-ako           te      karia'a
3R-carry-APPL          CORE    festival
```
    'They carried (something) for the festival.'

In addition, however, Tukang Besi has other applicatives, like the comitative, allative, and locative applicatives in (5),

(5)   Comitative applicative object:
```
no-kede-ngkene         te      ompu-no
3R-sit-COM APP         CORE    grandparents-3 POSS
```
    'They sat with their grandparents.'

    Allative applicative object:
```
No-wil(a)-isi          te      ama-su
3R-go-ALL APP          CORE    father-1S POSS
```
    'They visited my father.'

    Locative applicative object:
```
no-kede-mi             te      kadera
3R-sit-LOC APP         CORE    chair
```
    'They sat on the chairs.'

marked with morphology which differs from the more general applicative marker -*ako* seen in (4). So, it is not the case that a language has either the one formal marker type or the multiple formal marker type of applicative; the two types can cooccur in a single language. One possible perspective on these systems is that these are multiple applicative systems which simply have one applicative as the default type. A language like Kichaga, on such an analysis, would just have a default applicative marker.[2]

It might be asked in such cases what the motivation is for designating applicative constructions marked with identical morphological pieces as independent constructions. The answer is that in many cases the constructions are distinguished by the morphosyntactic characteristics of the applicative and base objects, even though there is no morphological indication of the differences between the constructions. These kinds of

---

2   In fact, in the case of Bantu languages, it is interesting to note that the current applicative marker was probably not the only historical applicative marker. Instrumental applicatives were probably originally marked by the etymological causative marker (a stage still attested in parts of Bantu). When this use of the causative marker was lost in some languages, what is today recognized as the applicative assumed this function. I examine the motivations for these developments in Peterson 1999.

syntactic differences are an aspect of the variational range of applicative constructions to be discussed in section four.

2.3. Optionality/obligatoriness of the construction.

Next, languages vary in terms of whether or not use of the applicative construction is obligatory.

2.3.1. Optional applicative constructions.

In Haka Lai, for instance, there are certain applicative constructions which have an alternative oblique instantiation for the applicative object, as in the cases in (6-8), where the (a) examples give applicative versions, and the (b) examples give more or less equivalent versions in which the semantically more peripheral object appears in an oblique instantiation.

(6) Comitative applicative:
    a.   ka-law   ?an-ka-thlo?-pii
          1S POSS-field   3PS-1SO-hoe$_2$-COM
          'They hoed my field (together) with me.'

    b.   kay-ma?=hee   ka-law   ?an-thlaw
          1S-PRON=COM   1S POSS-field   3PS-hoe$_1$
          'They hoed my field together with me.'

(7) Prioritive applicative:
    a.   ?a-ka-kal-ka?n
          3SS-1SO-go-PRIOR
          'He went ahead of me.'

    b.   kay-ma?   hlaan=?a?   ?a-kal
          1S-PRON   before/front=ALL/LOC   3SS-go
          'He went ahead of me.'

(8) Instrumental applicative:
    a.   tiiloŋ khaa   tivaa   kan-tan-naak
          boat   TOP   river   1SS-cross-INST
          'We used the boat to cross the river.'

    b.   tiiloŋ=?in   tivaa   (khaa) kan-tan
          boat=INST   river   TOP   1PS-cross
          'We used the boat to cross the river.'

The other applicative constructions in Haka Lai, on the other hand, do not have clear paraphrases in which the applicative object is expressed as an oblique.

2.3.2. Obligatory applicative constructions.

To illustrate the opposing state of affairs, in Tzotzil (Mayan, Guatemala) it is simply not possible to express a recipient argument without using the applicative construction. Thus, the (a) example in (9) is acceptable, but no conceivable non-applicative variant (three of which are given in 9b) is.

(9)   Tzotzil (Aissen 1983:280)
a.   mi   mu   š-a-čon-b-on   l-a-čitome
        ?   NEG   ASP-E2-sell-APP-A1   the-your-pig
        'Won't you sell me your pigs?'

but

b.   *mi   mu   š-a-čon-∅   ?a-čitom   li   vo?one
        ?   NEG   ASP-E2-sell-A3   your-pig   the   I (287)

        *mi   mu   š-a-čon-∅   ?a-čitom   ta   vo?on
        ?   NEG   ASP-E2-sell-A3   your-pig   to   I (287)

        *mi   mu   š-a-čon-∅   ?a-čitom   k-u?un
        ?   NEG   ASP-E2-sell-A3   your-pig   my-U?UN³ (287)

2.3.3. Non-obligatory beneficiary/recipient applicative constructions.

By far the most common obligatory construction is the beneficiary/recipient type applicative. There are a few exceptions, however. Consider Indonesian, where the following two sentences are reportedly considered to be identical:

(10)   Indonesian (Chung 1976:41)
a.   Saja   mem-bawa-kan   Ali   surat   itu
        I   trans-bring-ben app   Ali   letter the
        'I brought Ali the letter.'

b.   Saja   mem-bawa   surat   itu   kepada Ali
        I   trans-bring   letter the   to   Ali
        'I brought the letter to Ali.'

The first sentence uses a beneficiary/recipient applicative construction, and the second does not. There must be some difference between the use of these two constructions, but whatever it is eludes not only theoretically-oriented linguists like Chung, but also more

---

³   The element *u?un* is a possessed relational noun which would hypothetically yield a possible oblique instantiation of the first singular recipient argument.

descriptively-concerned writers of reference grammars on Indonesian, who, while noting some stylistic differences between the two constructions, maintain the view that there is essentially no semantic difference between the two possibilities (Macdonald and Soenjono 1967:232)

A partial exception to the generalization that beneficiary/recipient applicative constructions are obligatory is seen in Tzotzil. Although (9) shows that for clauses containing a *recipient*, an applicative construction must be used, specifically beneficiary objects in Tzotzil are only optionally coded via the applicative construction, and may instead have an oblique instantiation in which the beneficiary is expressed as the possessor of a relational noun, as seen in (11).

(11)   ʔi-∅-s-kom¢an   hun   kampana   y-uʔun   hč'ultottik
       ASP-A3-E3-leave   a   bell   his-UʔUN   Our Holy Father

       San-torenso
       San Lorenzo
       'They left a bell for Our Holy Father St. Lawrence.' (Laughlin 1977:132, cited by
       Aissen 1983:295)

On the other hand, in Chichewa recipient applicative constructions are optional, but benefactive applicative constructions are obligatory (Sam Mchombo, p.c.)

Usually the obligatory/optional line is drawn on the basis of a more significant semantic role distinction. In Bantu languages, for example, while it is usually the case that beneficiaries/recipients must occur in an applicative construction, use of an applicative construction is not required for locatives or instruments (though see 2.3.5. below).

2.3.4.   The role of animacy.

In Halkomelem (Gerdts 1988), whether an applicative construction is used or not depends primarily on the animacy of the potentially applicative object: if the object in question is animate, the applicative construction must be used. Thus, since beneficiaries are always animate, beneficiaries are found only in applicative constructions. As seen in (12), failure to use the applicative construction (12a) results in unacceptability.

(12)   Halkomelem (Gerdts 1988:142)

a.   *ni   q'ʷə́l-t-əs   kʷθə   səplíl   ʔə   łə   sténiʔ
         aux   bake-tr-3erg   det   bread   obl   det   woman
         'He baked the bread for the woman.'

b.   ni   q'ʷə́l-əłc-t-əs   łə   sténiʔ   ʔə   kʷθə   səplíl
         aux   bake-advB.app-tr-3erg   det   woman   obl   det   bread
         'He baked the bread for the woman.'

Similar facts hold for recipient applicatives (1988:142). Causals (circumstantials) are either animate or not, and if they are animate, they appear preferentially in applicative constructions, as in (13b), where the causal is animate.

(13)   a.   ʔni   cən   c'əq'   ʔə   kʷθə   sqʷəméyʔ
                  aus   1sub   astonished   obl   det   dog (139)

         but

         b.   ni   cən   c'əq'-míʔ-t   kʷθə   sqʷəméyʔ
                  aux   1sub   astonished-advC.app-tr   det   dog
                  'I was astonished at the dog.' (139)

Where the causal is not animate, an applicative construction is not used, as in (14a).

(14)   a.   ni   cən   c'əq'   ʔə   kʷθə   sx̌t'ék'ʷ-s
                  aux   1sub   astonished   obl   det   carving-3pos
                  'I was astonished at his carving.' (138)

         but

         b.   *ni   cən   c'əq'-méʔ-t   kʷθə   sx̌t'ék'ʷ-s
                  aux   1sub   astonished-advC.app-tr   det   carving-3pos (138)

Allative applicatives are optionally used with animate objects, seen in (15),

(15)   a.   ni   nemʔ   ʔə-x̌'   John
                  aux   go   obl-det   John
                  'He went up to John.' (141)

         or

         b.   ni   nəʔə́mʔ-n-əs-əs   kʷθə   John
                  aux   go-advD.app-tr-3erg   det   John
                  'He went up to John.' (141)

but not with inanimate objects, as shown by the unacceptability of (16b).

(16) a. ni   nem? ?ə   kʷθə   stá?lu?
          aux   go   obl   det   river
          'He went to the river.' (141)

but

      b. *ni   nə?ə́m?-n-əs-əs   kʷθə   stá?lu?
          aux   go-advD.app-tr-3erg det   river (141)

Instrumentals are never animate, and hence never appear in an applicative construction (Gerdts 1988:143).

An issue of some significance is whether we are justified in calling something which is obligatory an applicative construction, by (usual) definition a construction which is supposed to provide an alternative to oblique realization of a semantically peripheral participant. The fact that all of the constructions under consideration are associated with overt verbal morphology indicates that even if many such applicative constructions do not currently constitute an alternative to some other coding of grammatical relations, they probably did in the past; otherwise (unless they can be shown to have developed by analogy), the verb would not have to have been marked to signal this departure from the normal state of affairs. Where applicative constructions are obligatory, presumably what in the past was a marked alternative has been reanalyzed as the basic, and in most cases, the only way to code grammatical relations in clauses containing, for instance, both beneficiary/recipients and patients. This is a type of diachronic development which we will see in detail in Chapter 4.

2.3.5. The role of semantic effects.

An additional aspect of obligatoriness, which has received little systematic treatment in the synchronic literature on applicatives, is the semantic function of applicative constructions. In some languages, the primary role of applicative constructions seems not to be so much of a discourse-functional nature, but instead is of a semantic one. For instance, note the meaning difference between the sentences in (17a) and (b) from Haya (Hyman and Duranti 1982:234).

(17)   a.   n-ka-gw'   ómú-nju
                1-tense-fall   house
                'I fell into the house.'

       b.   n-ka-we-el'   ómú-nju
                1-tense-fall-app house
                'I fell in the house.'

In this language, the use of the applicative construction indicates that the object represents a static locative entity, while the absence of it indicates that the object is an allative entity (at least with this predicate). For the verbal base there is essentially a default interpretation of the semantic role of a locative entity associated with it (in this case an allative); the function of the applicative (in its locative sense) is to override the default locative notion associated with the verb by a static locative semantic specification. Given the fundamental effect that use of the applicative has on semantic interpretation in such cases, it is not clear that use of the applicative can always be considered to be optional for such languages.

2.4. Treatment of the base and applicative objects.

A third parameter which applicative constructions differ in terms of is the treatment of their objects. This is the parameter of variation which has generated the largest amount of work in syntax, represented by a large body of work in Relational Grammar (e.g. Chung 1976, Gary and Keenan 1977, and Aissen 1983), extensive reanalysis and expansion of this work by Baker (1988 and 1996), and reaction to Baker's work by Alsina and Mchombo (1989, 1991). As pointed out by Donohue 1996, it is always the case that in an applicative construction the applicative object displays (at least some of) the characteristics that the object of a monotransitive verb displays. These characterisitics of applicative contructions are the subject of 2.4.1. In 2.4.2. and 2.4.3., however, I discuss cases in which the applicative does not acquire properties which it would be expected to display in the applicative construction, and cases in which the base object retains some of the properties which it would be expected to fail to display in an applicative construction. Finally, in 2.4.4., I note that differences may exist between applicative constructions in the treatment of their objects, even if there is no formal difference in their marking.

2.4.1. Object properties acquired by the applicative object.

In this section, I examine ways in which applicative objects display properties of monotransitive direct objects. In Haka Lai, for instance, there are two ways in which the applicative objects in applicative constructions are treated in the same way as objects of monotransitive verbs. First, objects of monotransitive verbs typically control object agreement, as in (18).

(18) na-ka-hmuʔ
      2SS-1SO-see2
      'You saw me.'

Second, the object of a monotransitive verb often occurs with an accompanying demonstrative/high topicality marker (discourse deictic), as in (19).

(19) ʔin   khaa   ʔa-Ø-khaaŋ
      house DEIC   3SS-3SO-burn
      'He burned the house.'

With the exception of the instrumental applicative construction, object agreement in Haka Lai's applicative constructions is controlled by the applicative object, and not by the base object. For instance, in the comitative applicative in (20), the object agreement is with the comitative object, and not with the patient object:

(20) ka-law   ʔan-ka-thloʔ-pii
      1S POSS-field 3PS-1SO-hoe2-COM
      'They hoed my field (together) with me.'

If the agreement in (20) had been with the patient, the object marker would have been third singular. We have seen in the previous chapter that the agreement in these cases is not simply a matter of the relative animacy of the objects, but that the applicative marker itself imposes restrictions on which object the agreement must refer to.

Similarly, there is a preferential association of markers of high topicality with the applicative object, even in cases where animacy is not a factor. So, in (21) and (22) we see that speakers restrict the discourse deictic *khaa* (and other such markers) to occurrence in conjunction with the applicative object in applicative constructions:

(21)   tiiloŋ   khaa   tivaa   kan-∅-tan-naak
       boat   DEIC   river   1SS-3SO-cross$_2$-INST
       'We used the boat to cross the river.'

(22)   *tivaa   khaa   tiloŋ   kan-∅-tan-naak
       river   DEIC   boat   3SS-3SO-cross$_2$-INST
       'We used the boat to cross the river.'

In the Bantu language Chichewa, a beneficiary/recipient applicative construction leads a beneficiary/recipient object to exhibit the object properties of the patient object of a monotransitive verb. The object of a monotransitive verb is capable of being the subject of a passive version of its verb and it may be replaced by pronominal marking on the verb. Thus, in the beneficiary/recipient applicative construction, the beneficiary/recipient object displays these properties, as seen in (23):

(23)   Chichewa (Alsina and Mchombo 1993:23)
       a. Passivization
       atsikana   a-na-gul-ir-idwa   mphatso
       2.girls   2.subj-past-buy-app-pass   9.gift
       'The girls were bought a gift.'

       b. Pronominal object marking
       chitsiru   chi-na-wa-gul-ira   mphatso   (atsikana)
       7.fool   7.subj-past-9.obj-buy-app   9.gift   2.girls
       'The fool bought a gift for them (the girls).' (22)

In (23a), the beneficiary appears as the subject of a passive verb, and in (23b) it is represented by pronominal object marking. In Chichewa, patient arguments in beneficiary/recipient applicative constructions do not exhibit these object properties.

2.4.2.   Object properties not acquired by the applicative object.

It is not always the case that an applicative object has the full complement of characteristics associated with the object of a monotransitive verb, however. For example, while Haka Lai instrumental applicative objects display preferential association of discourse deictics with the instrumental object, and they may occur without the instrumental case clitic, they never control preverbal object agreement. As seen in (24), preverbal object agreement is reserved for the base object, if the latter is an argument which usually receives non-zero agreement:

(24) ka-naam   khaa tsewmaŋ=niʔ   ʔa-ń-tshuʔn-naak
   1S POSS-knife   TOP Tsewmang=ERG 3SS-2SO-stab$_2$-INST
   'Tsewmang stabbed you with my knife.'

Thus, in (24), preverbal object agreement is with the second person singular patient object

rather than with the third person singular instrument argument, even though the verb bears

the instrument applicative marker. (The instrument object *can* control post-verbal plural

object marking, however, on one reading.)

While beneficiary/recipient applicative objects in Chichewa generally behave like the

single objects of monotransitives, as seen above, there is at least one respect in which they

do not. The patient of the monotransitive verb in (25a)

(25) Chichewa (Mchombo and Firmino 1995:14)
   a. anyani a-na-b-a   maungu
      2.baboons 2SM-PST-steal-FV 6.pumpkins
      'The baboons stole some pumpkins.'

   b. awa ndi maungu amene anyani
      6.these be 6.pumpkins 6.RP 2.baboons

      a-na-b-a
      2SM-PST-steal-FV
      'These are the pumpkins that the baboons stole.'

may be extracted in the relative clause construction seen in (25b). However, this property

of monotransitive patient objects is *not* acquired by the beneficiary/recipient object in

Chichewa applicative constructions, as seen in (26a) and (b).

(26) Chichewa (Mchombo and Firmino 1995:14)
   a. anyani a-na-phik-ir-a   mbuzi   chitumbuwa
      2.baboons 2SM-PST-cook-APPL-FV 10.goats 7.pancake
      'The baboons cooked (for) the goats a pancake.'

   b. *izi ndi mbuzi zi-mene anyani a-na-phik-ir-a
      10.these be 10.goats 10SM-RP 2.baboons 2SM-PST-cook-APPL-FV

      chitumbuwa
      7.pancake
      'These are the goats that the baboons cooked the pancake for.'

While Kalkatungu (Pama-Nyungan, Australia) beneficiary/recipient applicative

objects have many properties of direct objects, one feature of objecthood is notably absent,

as described by Böhm 1986. Kalkatungu has an applicative construction and an alternation

in the coding of the objects of trivalent verbs (much like English Dative Shift) by which a beneficiary/recipient argument (usually appearing in the allative case) is marked as an absolutive argument. In the case of the allative coding alternative, a patient object is referenced by verbal agreement morphology, and in the alternative coding, it is the beneficiary/recipient object (not the patient object) which is referenced by agreement.

Because Kalkatungu is a syntactically ergative language, in order for the transitive agent of a subordinate purposive clause to be deleted under coreference with the (absolutive) patient of a main clause, the agent of the purposive clause must be made absolutive by antipassivization of the purposive clause verb. However, if the object in the main clause (coreferential with the subject of the purposive clause) is the applicative object in the applicative construction or the recipient of a ditransitive, as seen in (27), antipassivization of the verb in the purposive clause is not required for deletion of the purposive clause subject under coreference with the main clause absolutive argument to occur:

(27)   Kalkatungu (Böhm 1986:96)
        ati   caa   ŋa-ṯu   aɲa   juru
        meat.abs   this.abs   1sg-erg   give.past   man.abs

        a-i   ṇuwa   ŋurku
        comp-nom(=erg)3sg   see   for nothing
        'I gave the man$_i$ the meat just $\emptyset_i$ to look at.'

In (27), the beneficiary/recipient 'man' of the upstairs clause is coreferential with the agent argument of the downstairs clause, and there is no required modification of the verb of the purposive clause in order for the ergative argument to be omitted. So, it is clear that in this construction type, the applicative object does not have the full complement of expected object properties. In other words, the applicative object is absolutive for some purposes, but does not behave like a prototypical absolutive in controlling cross-clausal deletion under coreference.

2.4.3. Retention of object properties by base objects.

Next, while the applicative object necessarily has at least some of the properties of monotransitive objects, it is not always the case that a base object, if there is one, relinquishes all of the properties associated with monotransitive objects when it appears in the applicative construction. Thus, in Haka Lai, while the applicative object typically controls object agreement, the base object has limited control of postverbal plural object marking, as in (28).

(28) law   ?a-ka-thlo?-taak-hnaa
      field 3SS-1SO-hoe-SOURCE-PL OBJ
      'He left me and hoed the fields.'

Here, although the preverbal object marking refers to the source applicative object (first person singular), the postverbal plural object marking refers to the plurality of the base object (and cannot be interpreted as referring to the applicative object, which would have to have a preverbal indication of plurality if it were instead first person plural).

Consider also the examples from Tepehuan (Uto-Aztecan, Mexico) in (29):

(29)   Tepehuan (Willet:1981:68)
      a.   xiv-añ   ja-'ui'-ca-'   gu-tatcarui'
           now-1sS   3pDO-go to (pl)-applic trnsf-fut   art-chickens
           'I'll take the chickens away right now.'

      b.   xiv-añ   jum-'ui'-dy-ica-'   gu-tatcarui'
           now-1sS   2sDO-go to (pl)-applic trnsf-fut   art-chickens
           'I'll bring the chickens to you (sg) right now.' (68)

      c.   xiv-añ   jam-bɨ-idy-ica-'   gu-tacárui'
           now-1sS   2pDO-go to-applic trnsf-fut   art-chicken
           'I'll bring the chicken to you (pl) right now.' (67)

Tepehuan beneficiary applicative verbs agree in terms of person and number with patients of monotransitives and beneficiary/recipients of applicative verbs, as seen in (29a) versus (29b). A comparison of the (b) and (c) sentences shows that regardless of the number of the patient, the verb's object pronoun is based on the person and number of the semantic beneficiary/recipient. However, for some verbs, including this one, there is suppletion of

the verb stem according to whether the patient is singular (-*bi*-) or plural (-'*ui*'-); this suppletion occurs with both bivalent and trivalent verbs.

Otherwise, in a language in which the verb may bear multiple agreement markers for objects such as Yimas or Kinyarwanda (Bantu, Uganda), the verb may agree with both beneficiary/recipient and patient objects:

(30)   Kinyarwanda (Gary and Keenan 1977:92)
        yohani   y-a-yi-mw-oher-ej-e
        John   he-past-it-her-send (app)-R-asp
        'Johan sent it to her.'

As pointed out by Dryer 1983 for Kinyarwanda, though, there is usually a distinction between the marking of the two objects in such languages. In Kinyarwanda, for example, the object marker which occurs closest to the verb root is invariably that corresponding to the beneficiary/recipient.

Taking the relative clause construction seen in Chichewa above, the base object in beneficiary applicative constructions, unlike the applicative object, *may* be extracted, although most of its other object properties are lost in this construction:

(31)   Chichewa   (Mchombo and Firmino 1995:14)
        ichi   ndi   chitumbuwa   chimene
        7.this be   7.pancake   7SM-RP

        anyani   a-na-phip-ir-a   mbuzi
        2.baboons   2SM-PST-cook-APPL-FV   10.goats
        'This is the pancake that the baboons cooked for the goats.'

In Kalkatungu, while the base object loses the ability to control verbal object agreement in the applicative construction, it still has the behavior of the object of a monotransitive for purposes of the interaction of cross-clausal coreference and antipassivization:

(32)   Kalkatungu (Böhm 1986:97)
        kuntu cipa-ji   kucukucu   kijca   ŋulurmi-ɲcamaji-ɳa
        not   this-erg   pup.abs   bitch.abs   keep-app-past

        a-i   pitmpi-ji
        comp-nom 3sg   suck-antipass
        'He didn't keep the bitch a pupᵢ ∅ᵢ to drink the milk.'

In contrast to the previous Kalkatungu example (27), it is the patient of the upstairs (applicative) clause which is coreferential with the agent of the downstairs clause in (32). In this case, the verb of the purposive clause must be antipassivized so that the interpretation of the agent of the purposive clause is coreferential with that of the patient of the main clause.

Examples of the Chichewa and Kalkatungu variety, involving cross-clausal syntactic constructions, are only rarely described. It is more frequent that while primary object agreement in an applicative construction is with the applicative object, there may be some additional agreement with the base object, as in the Lai, Tepehua, and Kinyarwanda examples above.

2.4.4. Variation according to applicative object type.

The remainder of this section reviews the observation that if a language has multiple applicative constructions, the properties of the object or objects of such constructions may differ. Baker (1988b) and Alsina and Mchombo (1990 and 1993) have provided abundant illustrations of this phenomenon for Chichewa. Although marked by identical morphology, the Chichewa beneficiary/recipient applicative construction allows the beneficiary/recipient to be replaced by pronominal marking on the verb, and to be the subject of a passivized version of the applicative verb; beneficiary/recipients may not, however, be extracted. These aspects of the construction were seen above in (23) and (26). In instrumental applicative constructions, on the other hand, the instrument may be replaced by pronominal marking on the verb, as seen in (33) cited by Alsina and Mchombo (1993:22),

(33) anyani   a-ku-ú-phwány-ir-á   dengu   (mwala)
      2.baboons   2 s-pr-3 o-break-app-fv   5.basket   (3.stone)
      'The baboons are breaking the basket with it (the stone).'

and it may be a passive subject, as in (34) (1993:23),

(34) mwala   u-ku-phwány-ír-idw-á   dengu   ndí   anyani
      3.stone   3 s-pr-break-app-pass-fv   5.basket   by   2.baboons
      The stone is being used (by the baboons) to break the basket.'

but unlike the beneficiary/recipient applicative object, it may also be extracted:

(35) uwu   ndi   mwalá   úméné ányani   á-ku-phwány-ír-a
      3.this be   3.stone   3.rel 2.baboons   2 s-pr-break-app-fv

      dengu
      5.basket
      'This is the stone that the baboons are breaking the basket with.'

In locative applicative constructions, as in instrumental applicative constructions, the locative may be extracted as in (36),

(36) apa   ndi   pa-mchenga   paméné   álenje
      16.this   be   16-3.sand   16-rel   2.hunters

      á-ná-lúk-ír-a   mikeka
      2 s-pst-weave-app-fv   4.mats
      'This is the beach the hunters wove mats on.'

it may be a passive subject (37), or be represented by pronominal marking on the verb (38).

(37) pa-mchenga   pa-ku-lúk-ír-idw-á   míkeka
      16-3.sand   16 s-pr-weave-app-pass-fv   4.mats
      'The beach is being woven mats on.'

(38) alenje   a-ku-pá-lúk-ir-á   míkeka   (pa-mchenga)
      2.hunters   2 s-pr-16 o-weave-app-fv   4.mats   (16-3.sand)
      'The hunters are weaving mats on it (the beach).'

One further difference is that in these cases the base object largely retains its ability to display these properties in instrumental and locative applicative constructions (except that passivization of the base object in instrumental applicative contructions is not possible). In the Chichewa beneficiary/recipient applicative construction, these properties are almost all absent for base objects.

Outside of Bantu, little work has been done in assessing the object properties of objects in applicative constructions other than beneficiary/recipient applicative constructions.

One exception is the work of Donohue 1995 for Tukang Besi, which is one of the most exhaustive synchronic studies of an applicative system to date. Here, applicative objects fairly uniformly display the object properties of potential for representation by an

object marker, relativization, question formation, passivization, and reciprocalization (if pragmatically feasible). Base objects, for the most part, do not. There are a couple of surprises, like the inability of comitative applicative objects of transitive base verbs to be passivized, and there is limited relativization on base objects (albeit using an alternative relativization strategy).

A second exception is Haka Lai (Peterson 1998a), where there is little in the way of differences between several applicative construction types. Only instrumental applicatives differ from the usual pattern in being unable to control primary object agreement and in having an absolute restriction on the occurrence of discourse deictics with the applicative object.

Taking into consideration the most complete discussions of applicative systems available (including Chung 1976, Aissen 1983, Alsina and Mchombo 1991, Ngonyani 1995, Donohue 1995 and 1997, Peterson 1998a), it is possible to make some preliminary generalizations about how object properties tend to be distributed in applicative constructions of different types. It is usual that in the case of a beneficiary/recipient-type applicative construction, the beneficiary object will display object properties (though there may be some tendency for them not to gain access to extraction constructions), and except in a few instances (as noted by Donohue 1997), the base object will not display object properties. Other applicative types tend to have applicative objects which do not display all object properties, and which may have base objects which also display object properties.

It seems likely that these tendencies ultimately have to do with the relative animacy of the applicative objects in question, but it is clear that such tendencies may be violated (e.g. in the case of Tukang Besi comitative applicative objects which will not appear as passive subjects or Bantu beneficiary applicative objects which may not be relativized on). Such tendencies will presumably only be statistical, subject to language- or family-specific factors in the motivation for and historical development of applicatives, and we

unfortunately lack the empirical foundations required to distinguish statisticially significant trends at this point.

2.5. Transitivity restrictions.

Another parameter along which applicative constructions may vary is the transitivity of verb base they may be formed on. There have been claims, for instance, that for given languages it is impossible to form applicatives on intransitive bases (e.g. Baker 1988 for Chichewa), or that it is impossible to form applicatives on ditransitive bases (e.g. Machobane 1989 for Sesotho). Ultimately, there may be a functional explanation for why some languages have constraints of the former sort. Thus, in some languages (e.g. Bantu languages like Kinyarwanda), the morphosyntactic entity created by use of the applicative marker is a supertransitive verb, with two objects; on the other hand, in a language like Chichewa, the applicativized verb is still simply a monotransitive, although the object properties associated with a typical monotransitive are somewhat dispersed between two objects and the object which bears most of the properties is a different one from the one which bore them in the case of the base verb. Thus, in a language like Chichewa, the applicative is more of a rearranging type of construction (as characterized in Comrie 1985), as opposed to the non-rearranging type of construction it is in Kinyarwanda. This being the case, it makes less functional sense to use an applicative construction with an intransitive in Chichewa, whereas in Kinyarwanda, the initial transitivity of the verbal base is irrelevant.

2.5.1. Minimum transitivity.

The restriction of applicative formation to transitive verb bases is seen in the examples in (39) from Tzotzil:

(39) Tzotzil (Aissen 1983:295)
   a.   ?a li   petule   ?i-∅-tal   y-u?un   li   maruče
        the   Petul   ASP-A3-come   her-U?UN   the   Maruč
        'Petul came for/on account of Maruč.'

b.　　*ʔa li　petule　ʔi-∅-s-tal-be　　　　　li　　maruče
　　　　the　Petul　ASP-A3-E3-come-BEN.APP　　the　　Maruč
　　　　'Petul came on account of/for Maruč.'

In (39a), the beneficiary of an intransitive verb may be expressed obliquely by means of a possessed relational noun, but (39b) demonstrates that when the base verb is intransitive, the applicative construction may not be used. Thus, there are some languages in which the only verb type which may be used in an applicative construction is a transitive one.

More recently, it has been noted that for some languages it is not simply a matter of the base verb's transitivity, but rather, it is a matter of whether the base verb is unaccusative or not which makes a difference.[4] In Sesotho, for instance, it is possible to applicativize an intransitive verb, as in (40), where the locative argument is oblique and does not make the verb base transitive.

(40)　Sesotho (Machobane 1989:25)
　　　banana　　　ba-∅-el-a　　　　　nkhono　　　selibeng
　　　girls　　　　agr-go-app-FV　　　grandmother　well-loc
　　　'The girls are going to the well for my grandmother.'

However, with unaccusative bases, the applicative construction is systematically unacceptable, as in 41.[5]

(41)　Sesotho (Machobane 1989:59)
　　　*lintja　li-hol-el-a　　　　　nkhono
　　　dogs　　agr-grow-app-FV　　grandmother
　　　'The dogs are growing up for my grandmother.'

It remains to be seen whether cases in which the formation of applicatives was claimed to be impossible with intransitive bases (e.g. Tzotzil, Indonesian) may be better characterized

---

[4]　　Unaccusatives are intransitive predicates in which the syntactic subject is not an active initiator of the action, such as 'fall'. These are contrasted with unergative predicates, in which the subject is an active initiator of the action, as in the case of a verb like 'run'.

[5]　　Presumably a verb's unaccusativity corresponds in at least some sense to the involuntary status of the subject (versus the relatively more voluntary status of unergative subjects). There must be some independent criterion for determining the status of a given verbal base as unaccusative or unergative, however, and while her analysis makes good sense, Machobane 1989 does not provide such criteria, a fact which potentially renders the analysis circular. Thus, perhaps the real problem with forming applicative verbs on certain intransitive bases may have more to do with the involuntary nature of the action rather than with some independently demonstrable unaccusative character of a given verb base. As far as I know, limitations of this sort have not been addressed from the perspective of the volutary/involuntary nature of the activity for any language.

in terms of a restriction on the formation of applicatives from unaccusative bases (though it seems unlikely).

There are nonetheless languages, like Haka Lai, which appear to be able to form applicatives on intransitives with no trouble at all, given an appropriate context:

(42)   Applicatives formed on intransitives in Haka Lai:

   a. Affected argument applicative
   ʔa-ka-Than-piak
   3SS-1SO-grow.up$_2$-BEN
   'He grew up for me.'

   b. Additional benefactive applicative
   ʔa-ka-Than-tseʔm
   3SS-1SO-grow.up$_2$-ADD BEN
   'He grew up for me (in addition to growing up for himself)'

   c. Comitative applicative
   ʔa-ka-Than-pii
   3SS-1SO-grow.up$_2$-COM
   'He grew up together with me.'

   d. Malefactive applicative
   ʔa-ka-Than-hnoʔ
   3SS-1SO-grow.up$_2$-MAL
   'He grew up on me.'

   e. Prioritive applicative
   ʔa-ka-Than-kaʔn
   3SS-1SO-grow.up$_2$-PRIOR
   'He grew up before me.'

   f. Relinquitive applicative
   ʔa-ka-Than-taak
   3SS-1SO-grow.up$_2$-SOURCE
   'He grew up, leaving me behind.'

   g. Instrumental applicative
   tsoohnuuk   ʔaa-Than-naak
   milk   3SS REFL-grow.up$_2$-INST
   'He grew up by means of milk.'

Aside from idiomatic interpretations of some combinations, subject to pragmatic feasibility, I have noticed no instances in which an intransitive may not occur in an applicative construction in Haka Lai.

2.5.2. Maximum transitivity.

A different kind of restriction which is sometimes noted is an inability to use an applicative construction with trivalent bases. Such restrictions are explicitly noted for Yimas (Foley 1997:372), Alamblak (1984:232), and Sesotho (Machobane 1989:111). The Sesotho examples in (43) demonstrate this type of restriction.

(43)   Sesotho (Machobane 1989:109)
    a.   ntate   o-f-a   bana   lijo
        father   agr-give-FV   children   food
        'My father gives food to the children.'

    b.   *ntata   o-f-el-a   morena   bana   lijo
        father   agr-give-app-FV   chief   children   food
        'My father gives food to the children for the chief.' (111)

(43b), in which the benefactive applicative construction would involve a beneficiary argument not expressed (an adjunct) in (43a), is not possible. Such restrictions seem to involve simply an upper limit on the number of arguments a verb may be associated with.

2.6.   Summary.

In this chapter I have presented the various ways in which applicative constructions' morphosyntactic characteristics vary.

First, applicative constructions usually only pertain to a single type of thematically peripheral object: the beneficiary/recipient. However, languages may have other applicative constructions, marked with the same or distinct morphology, which pertain to other semantically peripheral participants; instruments, spatial roles, circumstantials, and comitatives are among the most common of these.

Next, applicative constructions differ in terms of whether or not they have a paraphrase in which the applicative object is given an oblique instantiation.

The treatment of objects in applicative constructions is one of the areas with the greatest variation. Applicative objects always display *some* of the properties associated with the single objects of montransitive verbs. However, applicative constructions differ in terms of the degree to which the full complement of such properties is assumed by the applicative object and the degree to which the base object still displays these properties.

This aspect varies both across languages, and between different types of applicative constructions within a single language.

Finally, there may be restrictions related to the transitivity of the verbal base from which applicative constructions may be formed. Some languages disallow the formation of applicatives from intransitives (or perhaps more accurately, from unaccusatives); languages also may have an upper limit on the number of objects a verb may have, and thus disallow formation of applicatives from ditransitive verbal bases.

Chapter 3

The discourse function of applicative constructions

3.1. Introduction.

Essentially two types of functional explanation have been suggested for the existence of applicative constructions. These are more morphosyntactically-based and more discourse-functional explanations. The more morphosyntactically-grounded type of explanation is based on the observation that by using an applicative construction, peripheral arguments may become accessible to constructions which normally only direct objects would have access to, such as passivization and relativization. This sort of motivation for applicative constructions is found in the work of Givón 1984 and Croft 1991. The second, discourse-based, type of explanation, promoted by Givón (1983) and his student, Rude (1985, 1986), claims that the essential function of applicative constructions is to indicate that the entity the construction refers to has a greater discourse salience or topic continuity than would otherwise be expected of it.

The goal of this chapter is to assess the validity of these explanations using narrative texts from languages with applicative constructions. First, we will look at two alternative methodologies for assessing the relative topicality of narrative participants (that of Givón 1983 and Rude 1986, on the one hand, and that developed in Thompson 1990, on the other). Then, on the basis of these two methodologies, I will present analyses of the discourse function of applicative constructions in Haka Lai and Wolof narrative texts. The second section will also pay close attention to the role that applicative constructions play in allowing peripheral arguments to appear in constructions which they would otherwise not have access to, such as topicalization or relativization constructions. The results suggest that in narrative discourse, applicative constructions have a functional load of this morphosyntactic sort only if the construction's applicative object usually is inanimate; in fact, for such constructions the only indicator of high topicality which the applicative object

tends to exhibit is a pronominal instantiation. For applicative constructions which have prototypically animate objects, on the other hand, there is no evidence at all for such a functional load in the languages examined.

In all fairness, it must be recognized that constructions such as relativization, passivization, and topicalization themselves have a discourse function, and this discourse function is one which corresponds largely to that which we will see for most applicative constructions in general: to indicate a high relative topicality status for a particular semantically peripheral participant. So, insofar as the results presented below indicate that applicative constructions are not used in narrative to make peripheral objects accessible to these constructions, but usually do make applicative objects accessible to attenuated expression (e.g. by verbal pronominal morphology), the study shows that the primary motivation or purpose behind the use of applicative constructions is the indication of high topicality status, and any more clearly morphosyntactic function correlates with indication of an argument's relatively high topicality.

3.2. Approaches to the assessment of relative topicality.

Over the last fifteen years or so, several alternative approaches to the characterization of relative topicality of entities in discourse have been proposed. However, two approaches stand out from the rest in suggesting methodologies for quantification of this discourse parameter. In this section, I will consider first the approach suggested by Givón 1983 for the assessment of what he refers to as topic continuity of entities, paying particular attention to what this methodology has shown with respect to the relative topic continuity of object arguments in applicative constructions as represented in the work of Rude 1985 and 1986. Next, I will consider Thompson's 1990 approach to what she terms topicworthiness, in particular as given in her study of the relative topicworthiness of the two objects found in English dative-shift constructions.

3.2.1. The topic continuity approach.

Perhaps the most widely applied approach to the discourse-functional status of particular morphosyntactic constructions has been that developed by Givón and his students. In Givón's approach, the two most commonly used means for assessing the relative topic continuity of entities include a measurement called referential distance, and a measurement called topic persistence. All of the referential entities which occur in a discourse are evaluated in terms of these measurements, and the average ratings for participants with a particular morphological and syntactic instantiation are compared. The basic hypothesis is that those entities which have a higher topic continuity status, as evaluated in terms of these characteristics, will also have the earmarks of what we otherwise would expect to be a highly topical entity, e.g. pronominal or zero anaphorized form, occurrence as subject of the clause, and so forth.

What referential distance measures is the number of clauses intervening between a given mention of a referent and the last time that referent was explicitly present in the mind of the hearer. Referential distance is computed by counting the number of clauses intervening between the current mention of a particular referent and the preceding mention of that referent. If a particular instance of mention of a referent is the first such instance, referential distance is set arbitrarily high at twenty clauses. For instance, consider the biclausal sentence in (1) from the beginning of a Haka Lai text.

(1) 1   hlaan-liaw-pii=ʔaʔ   hin   tar-paa   pakhat   ʔa-rak-ʔum=ʔii
         once upon a time   DEIC   old-man   one   3SS-PAST-be$_i$=CONN

     2   faa   pa-ŋaa   ʔa-∅-naʔy-hnaa.
         son   CLASS-five   3SS-3O-have$_2$-PL OBJ

'Once upon a time, there was an old man, and he had five sons.'

In the first clause, there is one participant, the old man, and there is both a full NP and a verbal pronominal subject marker instantiation of this argument. Since this is the first mention of this referent in the text, the old man referent in this clause receives a referential

distance rating of twenty. In the second clause, there are two participants, the old man (instantiated by a verbal pronominal subject marker) and his five sons, instantiated by a full NP and by the absence of a verbal pronominal object marker. The old man referent in this clause receives a referential distance rating of one, since it is necessary to backtrack only one clause to the most recent referential mention of this entity. The sons, on the other hand, are mentioned for the first time in this clause, so they receive a referential distance rating of twenty. Thus, the smaller the referential distance rating, the more recently accessible a particular referent was, and presumably the more easily recoverable it is.

Topic persistence is a measurement of how important a particular entity is to the discourse following any given mention of it. The measurement consists simply of determining from any given mention of a referent how many following clauses also contain mentions of the same referent, usually up to some maximum limit, such as ten. For instance, for at least a portion of the text mentioned above, the old man continues to be a prominent figure. Following his mention in the first two clauses of the text, the old man is mentioned in the following three clauses, and the sons are mentioned in the following five clauses before a clause occurs in which they are not referred to. Thus, in the first clause, the old man receives a topic persistence rating of four, in the second clause three, in the third clause two, in the fourth clause, one, and in the fifth clause, zero. While for any given referent there is a gradual decrease in the topic persistence, the expectation, which generally has been borne out, is that entities with higher average topic persistence ratings will tend to be placed in grammatical relations which we otherwise expect to have high relative topicality, such as subject.

Rude 1986 made use of this methodology in the only study to consider the discourse function of applicative constructions to date. Comparing the topic continuity characteristics of objects in Nez Perce applicative constructions to what he regarded as the corresponding non-applicative realizations of the same thematic argument types, he found that various types of oblique arguments instantiated as direct objects in applicative

constructions have a lower referential distance and a higher topic persistence than do their corresponding non-applicative variants (147-148).

For instance, in intransitive clauses, Rude found that while an allative object realized in the allative case had an average referential distance over seventeen and an average topic persistence of one, when it was realized in an allative applicative construction, its average referential distance was more on the order of four, and its topic persistence was over three. Similar results were shown for the benefactive and associative applicative constructions in Nez Perce, although these were based on too few instances to be statistically reliable.

If we assume that the measurements of referential distance and topic persistence are indicative of the relative topic continuity of participants, applicative objects have a higher relative topic continuity than corresponding oblique objects. This finding thus suggests that applicative constructions exist in order to indicate that what would otherwise be realized as an oblique argument has a higher relative topic continuity status than would normally be expected for an obiquely instantiated participant.

3.2.2. The topicworthiness approach.

As far as I know, the information flow model of the structuring of discourse, as most carefully described in Chafe 1994, does not have any hard and fast methodology for measuring topicality. The most relevant contribution of the theory, however, that of the activation state of a referent, is taken up by Thompson 1990 in an investigation of what she calls the topicworthiness properties of the objects associated with ditransitives which are capable of exhibiting the dative shift construction in English.

Topicworthiness, for Thompson, is due to a cluster of properties, for the most part assessible in yes/no terms, including animate/non-animate[1], pronominal/non-pronominal, specific/non-specific (the latter only includes elements which refer to a class of entities or those which are referentless), identifiable/non-identifiable (to the addressee), proper/non-

---

[1]   In addition to humans, for the present study I regard animals which can speak as human. Animals which do not speak are treated as non-animates.

proper, long/short (in terms of phonetic content). Only specific entities are evaluated for the properties identifiable/non-identifiable and proper/non-proper. In most cases, it proves simple to evaluate entities in a narrative for their status with respect to these properties. A bit trickier is what Thompson refers to as status, a metric which attempts to directly incorporate Chafe's notion of activation state. Again, only specific entities are evaluated for this property. Elements are judged to be active 'If the referent is presumed to be in the addressee's consciousness' (245), semi-active 'If it is inferable from previous discourse or its previous mention was rather distant' (246), and inactive if neither of the preceding two conditions hold. The assumption is that entities which are otherwise expected to have a higher relative topicality status will tend to be animate, pronominal, specific, identifiable, short, and active.

In fact, Thompson's findings for narrative text indicate that dative-shifted recipient arguments overwhelmingly exhibit topicworthiness properties, and that non-shifted recipient arguments do not as overwhelmingly exhibit them (241).

3.3. The approach taken in this study.

This study makes use of both the topic continuity and the information flow approaches to assess the discourse function of applicative constructions of different types in two languages: Haka Lai and Wolof (West Atlantic, Senegal and Gambia). In what follows, I first discuss the overall procedure for text analysis and give an overview of the argument types subjected to comparison. In the following sections, for each language, I discuss the nature of the text material and methodological complications posed either by the genre or by the grammar of the language itself. Each following section then contains a discussion of the results of the survey for the individual language and provides an assessment of the discourse function of applicative constructions in that language.

3.3.1. Overall procedure.

For the two languages discussed below, objects of all types were evaluated in terms of the properties discussed in section 3.2.: the topic continuity properties of referential

distance and topic persistence, and the topicworthiness properties animate/non-animate, pronominal/non-pronominal, specific/non-specific, identifiable/non-identifiable, proper/ non-proper, status, and long/short. A full exemplification of how these properties were evaluated and how they were entered into a spreadsheet for purposes of calculation is given for an entire Haka Lai text as Appendix 1.

Three types of comparisons were then undertaken for different types of thematic entities. First, patient and recipient objects were compared with applicative objects; it was expected that the values for referential distance and topic persistence for these would be roughly the same, and that about the same percentage of each would display the topicworthiness properties. Second, applicative objects were compared with syntactic obliques; here, the expectation was that obliques would average far higher in referential distance, far lower in topic persistence, and a far smaller percentage of them would display topicworthiness properties. Finally, if it was fairly clear that a direct comparison could be made between an applicative object and a non-applicative oblique instantiation for an argument of the same thematic type, the applicative and non-applicative instantiations of this object type were considered with respect to each other; in light of the findings of Rude 1986, it was expected that applicative objects of this sort would have lower average referential distance, higher average topic persistence, and that a larger percentage of them would exhibit topicworthiness properties.

3.3.2. General complications in application of the methodologies.

There are a number of general complications which arise in attempts to apply the methodologies discussed above, and this section will point out these difficulties and discuss the way they were dealt with in the present study.

3.3.2.1. A problem with the topic continuity approach.

A number of analytical problems are presented for the topic continuity approach which, although they probably are relevant for a large number of languages, will only be discussed in conjunction with the languages that they were relevant for in the present

investigation. However, there is one fairly widespread analytical problem which will be considered prior to the presentation of individual languages: the treatment of quoted material and non-third person participants.

Most applications of the topic continuity methodology simply do not count the referential distance and topic persistence measurements for non-third person participants or participants in quoted material to figure the average measurements (e.g. Cooreman 1987, Rude 1986). In some cases they consider references to a particular participant internal to quoted material in figuring the referential distance or topic persistence of a speech-external participant (Rude 1986). Payne 1992 appears to use a similar technique; he justifies not counting the topic continuity characteristics of speech-internal participants by saying that 'their topicality pertains more to the quoted discourse than to the discourse in which the quote appears' (55). Usually chunks of speech are not counted as part of the portion of the narrative over which topic continuity is being measured.

It is not clear, however, that ignoring quoted material is always warranted, and this is certainly the case in languages like Haka Lai, where much of narrative is usually reported conversation between participants. Certainly the reference that participants in the narrative make to themselves and fellow participants must contribute something to their maintenance within the consciousness of the listener, even if part of what is going on in quoted material is maintenance of topic continuity internal to the embedded discourse itself. By not counting references to participants which occur in speech, it is possible that the assessment of topic continuity which one arrives at is somewhat distorted.

I have made provisions for counting or discounting speech (and thus non-third person participants) for this study. The spreadsheet which data is entered into allows the removal of elements occurring in speech, even though their presence has been taken into consideration in figuring the referential distance and topic persistence of speech-external participants. In what follows, my primary results will be those which include

measurements for participants in quoted material, but for Haka Lai I will also discuss the effects of omitting measurements from quoted material.

3.3.2.2. A problem with the topicworthiness approach.

The primary problem with the topicworthiness approach to assessing relative topicality of participants as described in Thompson 1990 is that no proposal is made for distinguishing between participants of active and semi-active status. Thompson herself must have applied some criterion in distinguishing the two, since she refers to instances of active vs. semi-active participants (249); however, she does not make this criterion explicit. This is unfortunate since one of the innovative aspects of the approach is the inclusion of activation status as a property worthy of consideration in judging relative topicality. An explicit means of distinguishing semi-active and active participants is thus a desirable addition to the methodology.

In order to make this distinction explicit, I make use of a discourse unit distinguished in Chafe 1987 as the 'paragraph' (42). The boundaries of paragraphs are fairly easily distinguishable, corresponding to what Chafe refers to as 'a significant change in scene, time, character configuration, event structure, and the like' (42). It seems reasonable to assume that internal to a paragraph in a narrative, the participants are active in the consciousness of a listener. However, when the narrative moves to a new paragraph, the active participants of the preceding paragraph may or may not play a significant part in the new paragraph. If they have not been mentioned by the point in the paragraph they are being evaluated at, I will assume that they are only semi-active. From that point on, however, they will be considered to be fully active.

Following Thompson, I will distinguish between three activation status levels. Inactive participants are first mentions of a participant within the narrative. Active participants are participants which have already been mentioned internal to a given paragraph; if the first mention of a participant internal to a paragraph occurs immediately following the transition from a paragraph in which that participant was also active, a first

mention of a participant internal to a paragraph will also be considered to be active. Semi-active participants are those which have already been mentioned internal to the whole narrative, but which are not located at the beginning of a paragraph immediately following a paragraph in which they were active participants.

The difference between inactive participants, on the one hand, and semi-active and active participants, on the other, should be clear. Participants are inactive only for their first mention in the narrative; semi-active or active participants have already been mentioned at least once in the narrative. Let us consider a sequence of clauses from the Haka Lai narrative, 'Bear and Rabbit', which will illustrate the difference between active and semi-active status. Prior to the following sequence, Rabbit has tied Bear up inside a large wooden trough and kicked him down a hill to a spot near a village, and a group of bachelors from the village have come out to investigate what has been reported to them as a bear tied up inside a trough. Bear, on their arrival, has begged them to release him from the trough:

(2)

1 ʔee   khaʔ   kan-ʔin-tshuaʔ-kaw-kon-laay-taa   tiaʔ
   INTERJ   INTERJ   1PS-2SO-let.out-AFFIRM-CONTR-FUT-just   QUOT

2 hrii khaa ʔan-Ø-phoʔy-piak   ʔan-Ø-phoʔy-piak=ʔii
   rope DEIC 3PS-3SO-loosen-BEN   3PS-3SO-loosen-BEN=CONN

3 kuaŋ tsuu ʔan-Ø-ʔon-piak=ʔii
   basin DEIC 3PS-3SO-open-BEN=CONN

4 ʔan-Ø-tshuaʔ-ter=ʔee   tii   sii
   3PS-3SO-let.out-CAUS=EVAL   say   be

   'Okay, we'll let you out,' they said, and they loosened and loosened the rope for him and opened the basin for him and let him out, it's said.

5 maʔkhan   ʔan-Ø-tshuaʔ-ter=ʔii
   then   3PS-3SO-let.out-CAUS=CONN

6 vompii tsuu ʔa-thin   ʔa-huŋ-tuk   ʔan-tii=ʔii
   bear   DEIC 3S POSS-liver 3SS-come-very 3PS-say=CONN

7   maʔkhan   hiitii[ʔatuu]   hrimhrim   tsuu
          then   DEIC [now]   really   DEIC

8   ka-∅-duʔ-hrimhrim-tii-laay-law
          1SS-3SO-like-really-do-FUT-NEG

9   ʔatuu   hrimhrim   tsuu   ka-∅-thaʔ-hrimhrim-tsaŋ-laay
          now   really   DEIC   1SS-3SO-kill-really-PERF-FUT

10   ka-∅-hmuʔ-hrimhrim=ʔaʔ   tsun   tii   khaa   sii   ʔan-tii
         1SS-3SO-see-really=LOC   DEIC   say   DEIC   be   3PS-say

Then, they let him out, and the bear became very angry, they say, and he said, 'Now I really am not going to take this any more. Now I'm really going to kill him if I see him,' it's said, they say.

11   maʔkhan   vompii=niʔ   tsun   pheŋtee   kool=ʔaʔ   tsun
         then   bear=ERG   DEIC   rabbit   look.for=LOC   DEIC

12   ʔaa-thoʔ-hoy   ʔan-tii
         3SS REFL-begin-EVAL   3PS-say

Then the bear set out to look for the rabbit again.

13   maʔkhan   ʔa-law=ʔii   ʔa-thlaam   tshuŋ=ʔii   ʔaar
         then   3S POSS-field=LOC   3S POSS-hut   inside=LOC   chicken

14   ʔa-rak-∅-thaʔ-liaw-tee   khaa   ʔa-hmuʔ   ʔan-tii
         3SS-3SO-past-kill-PROG-right   DEIC   3SS-see   3PS-say

15   pheŋtee=niʔ   ʔaar   ʔa-rak-∅-thaʔ-liaw-pii   khaa
         rabbit=ERG   chicken   3SS-3SO-past-kill-PROG-very   DEIC

Then, he saw him right while he was killing a chicken inside his hut at his field, the rabbit was just in the middle of killing a chicken.

In lines 5-10, the main participants are the bachelors and the trapped bear. Since they have both been a part of the paragraph up to this point, they are considered to be active participants. Beginning with line 11, there is a transition into a new paragraph: the bachelors are no longer mentioned, and Rabbit is reintroduced into the narrative. The first mention of Rabbit is considered to be an instance of a semi-active participant. Following this mention of Rabbit, however, mentions of him internal to the ensuing paragraph are considered to be active. Bear, on the other hand, first mentioned in this paragraph in line

10 as well, does not ever have a semi-active status since he was an active participant at the end of the immediately preceding paragraph.

3.3.3. Haka Lai.

The study conducted here made use of four large Haka Lai texts (containing a total of approximately 1000 clauses) to determine the discourse functional nature of applicative constructions. The texts were broken into clauses, and each participant in a clause was given an entry in a spreadsheet. For objects and obliques, assessments of topic continuity and topicworthiness were conducted in accordance with the principles outlined above. While the data on which canonical (patient and recipient) objects and obliques were assessed was limited to just four texts, applicative constructions were assessed from all available text material (a total of about eight texts of varying length). This was necessary in order to provide a large number of applicative constructions. As it was, only slightly over 100 applicative constructions of various types were attested in the entire text corpus.

3.3.3.1. Complications specific to Haka Lai.

There are some aspects of Lai grammatical structure which were of concern in assessing the various characteristics of participants. Here I will briefly mention these and discuss how they were treated in the investigation.

First, spatial relations in Lai are often expressed via a set of possessed relational nouns. For instance, consider the structure seen in (3).

(3)   ʔin   tshuŋ=ʔaʔ
        house inside=LOC
        'inside the house'

In the spreadsheet, these structures are encoded as a possesssor and an obliquely marked relational word. The specificity and identifiability of the relational word might be subject to debate, but in coding such expressions I have found no cases in which they should not be treated as both specific and identifiable. I assume that listeners have real-world knowledge which tells them that, for instance, houses have insides, so as long as a relational word is associated with a clearly specific and identifiable possessor, the relational word is also

coded as specific and identifiable. It might seem a bit odd to encode the relational word itself, rather than the possessor in these instances, but in this corpus it is almost never the case that coding one or the other makes any difference. Entities which occur as possessors in this construction typically are inanimate, non-pronominal, non-proper, and they have a low degree of topic continuity, just like the relational nouns they formally possess.

A second issue is the location of pronominal arguments of verbs of speaking. Since Lai is an OV language whose pronominal arguments are realized as verbal morphology, directly quoted speech always intervenes between the preceding narrative and a given clause's mention of subject and object of the associated verb of speaking. If, as I suggested earlier, quoted material should also count as intervening material between mentions of referents, referential distance and topic persistence would be increased and decreased respectively if we count intervening speech clauses. Consider the lines of text given in (4), where Rabbit is speaking to Bear.

(4)

1	ma?khan				
	then				

2	?aa	ka-puu	?a-tshin	?in-tshin	tua?-niŋ-loo
	INTERJ	1S POSS-uncle	3S POSS-lid	2SO-cover	do-let-HORT

3	tia?	khan	?a-Ø-tii	?an-tii
	QUOT	DEIC	3SS-3SO-say	3PS-say

4	?ee	kha?	tshin-tua?	tshin-tua?
	okay	INTERJ	cover-do	cover-do

5	tia?	khan	?a-von-Ø-tii=?ii
	QUOT	DEIC	3SS-DIREC-3SO-say=CONN

'Then he (the rabbit) said to him, "Ah, my uncle, let me try to cover you with its lid," they say. "'Okay, cover! Cover!" he (the bear) said to him (the rabbit), and ...'

Bear has continuous mention in each clause, up until the speech in line four. Thus, the referential distance of the following third singular subject marking in line five would be two rather than one. Similarly, the topic persistence of the (zero) third singular recipient

marking on the verb at the end of line three, which serves as mention for the bear, is zero, rather than at least one. The reason for these breaks in topic continuity is the fact that explicit identification of who utters the quote in line four only occurs in line five.

For the present investigation I have essentially ignored this problem for the following reason. Following Payne 1992 (56), it would seem that any narrative-internal act of speaking necessarily implies a speaker, and in the case of Lai, sometimes also a listener, who are usually understood from the preceding discourse and the content of their speech, even if their mention for a given stretch of quoted material actually comes after the quoted material. Thus, in (4), while the actual mention of the bear comes at the very end of the sentence, that referent is already known, in a sense, by virtue of the listeners' understanding of the preceding narrative and the content of the quoted material itself. Thus, while this issue might appear to present a problem, in actuality it does not.

3.3.3.2. Results.

The results of the survey show what was hypothesized about the function of applicatives to be accurate. In the sections which follow, I will first consider the results of a comparison of the topic continuity and topicworthiness assessments of applicative objects and canonical objects, on the one hand, and of applicative objects and obliques on the other. Then, we will consider the frequency with which the text study indicates that applicative constructions occur in conjunction with constructions such as relativization and topicalization.

3.3.3.2.1. Applicative objects vs. canonical objects.

A comparison of the objects appearing in applicative constructions with canonical objects shows applicative objects to display markedly lower referential distance averages, and somewhat higher topic persistence averages. Similarly, a larger percentage of applicative objects display topicworthiness properties in a number of instances.

Compare the figures for canonical objects and applicative objects for referential distance and topic persistence shown in Table 3.1.[2]

Table 3.1. Referential distance and topic persistence for applicative vs. canonical objects.

	average referential distance	average topic persistence
applicative objects (n=104)	1.8	4
canonical objects (n=604)	6.3	3

The lower average referential distance for applicative objects is generally taken to indicate a higher topic continuity for such objects as compared to that of the canonical objects, which have a much higher average referential distance. The topic persistence figures are less telling, but nonetheless indicate a higher persistence for applicative objects.

The statistical significance of these differences was assessed using chi-square tests comparing the number of applicative objects and canonical objects whose referential distance and topic persistence fell above and below the mean for all objects. In both instances, the difference was found to be highly significant ($p < .005$).[3]

If we break down the average referential distance and topic persistence figures for canonical objects into figures for patient objects and recipients, however, and then compare these separate figures to those found for applicative objects, we get a more refined picture of the relative status of objects. Compare the figures in Tables 3.2 and 3.3.

Table 3.2. Referential distance and topic persistence for applicative vs. patient objects.

	average referential distance	average topic persistence
applicative objects (n=104)	1.8	4
patient objects (n=427)	7.7	2.1

---

[2] Tables concerning referential distance and topic persistence contain figures expressed in terms of number of clauses rounded to the nearest tenth. Figures in tables concerning topicworthiness properties represent percentages of an object type which displays the properties in question.

[3] In cases where statistical significance of differences is discussed in the text, I place a box around the relevant figures in corresponding tables.

Table 3.3. Referential distance and topic persistence for applicative vs. recipient objects.

	average referential distance	average topic persistence
applicative objects (n=104)	1.8	4
recipient objects (n=177)	2.4	5.8

As should be clear from these comparisons, the presence of the recipient objects in the class of canonical objects in Table 3.1 elevates the topic persistence figures for canonical objects. Since recipient objects are typically animate objects of verbs of speaking (in almost all of the relevant cases), it is not surprising that they inflate the topicality status of canonical objects in this manner. Such objects are typically participants which are primary characters appearing in at least a single paragraph of a narrative, and thus have a rather high relative topic continuity. When these are removed from the assessment of objects' behavior, as shown in Table 3.2, the differences between patient objects and applicative objects are somewhat clearer.

Using the same means for assessing significance discussed earlier, the differences in referential distance and topic persistence between applicative objects and patient objects are still highly statisitically significant (p < .005). However, there is no significant difference between the referential distance and topic persistence discrepancies between applicative objects and recipient objects.

Next, if we consider the average referential distance and topic persistence of different types of applicative constructions, some differences emerge, though it should be admitted from the outset that the number of instances that these generalizations are based on is often small, so that the trends exhibited in the data may be spurious. Consider the differences between the different applicative construction types given in Table 3.4.

Table 3.4. **Referential distance and topic persistence according to applicative object type.[4]**

applicative object type	average referential distance	average topic persistence
source (n=16)	2.5	1.7
allative/malefactive (n=13)	2.6	3.1
benefactive/malefactive (n=48)	1.4	6.7
comitative (n=25)	1.5	1.9

The differences in referential distance, while suggestive, are probably not statistically significant. The higher average topic persistence for benefactive/malefactive applicative objects, however, is striking, and probably accounts by itself for the higher average topic persistence of applicative objects as a whole. The average topic persistence of other applicative object types is otherwise virtually identical to that of patient objects, as seen before in Table 3.2. Thus, as an interim summary, in all but the benefactive/malefactive applicative constructions, applicative objects have an average referential distance approximating that of recipient objects, but a topic persistence approximating that of patient objects. Benefactive/malefactive applicative objects are virtually indistinguishable from recipient objects.

Moving on to a consideration of Thompson's topicworthiness properties, Table 3.5 gives the average number of applicative versus canonical objects displaying the properties of animacy, pronominality, specificity, identifiability, properness, activeness[5], and length.[6]

---

4 'Source' refers to what in Chapter 1 was described as the relinquitive applicative (marked by *-taak*), 'allative/malefactive' refers to the malefactive applicative (marked by *-hno?*), 'benefactive/malefactive' refers to the affected object applicative (marked by *-piak*), and 'comitative' is self-explanatory.

5 It will be noted that only an active/inactive distinction is made here. In fact, for the Lai texts in question, there are under ten instances of participants with semi-active status, so it is not possible to say anything reliable about their patterning. The Wolof text corpus (discussed below) likewise provides too few instances of semi-active participants to be of any interest.

6 There is an iherent arbitrariness in the determination of whether something is long or short. For this language, I counted things that were either monosyllabic or which had a zero instantiation as short. This amounts essentially to the distinction between pronominal and non-pronominal for Lai, as a comparison of the tables which follow will show.

Table 3.5. **Topicworthiness properties for applicative vs. canonical objects.**

	animate	pronom.	specific	identif.	proper	active	long
app (n=104)	93	87	98	99 (102)	75 (102)	99 (102)	11
canon. (n=604)	55	51	94	84 (566)	47 (566)	78 (566)	49

As Table 3.5 indicates, for many of these properties, compared to canonical objects, there are far and away more cases in which applicative objects exhibit topicworthiness. Only in the case of specificity and identifiability are the figures anywhere near close to each other, though the figures for proper and active also converge somewhat.

However, as was the case with the Givónian topic continuity measurements seen above, a different picture emerges if we break down the category of canonical object into two subtypes, patients and recipients. In this case, the picture stands in greater contrast to the results in Table 3.5 than was seen for topic continuity (Tables 3.2 and 3.3) above. Consider Tables 3.6 and 3.7.

Table 3.6. **Topicworthiness properties for applicative vs. patient objects.**

	animate	pronom.	specific	identif.	proper	active	long
app. (n=104)	93	87	98	99 (102)	75 (102)	99 (102)	11
patient (n=427)	38	33	91	86 (388)	33 (388)	71 (388)	66

Table 3.7. **Topicworthiness properties for applicative vs. recipient objects.**

	animate	pronom.	specific	identif.	proper	active	long
app (n=104)	93	87	98	99 (102)	75 (102)	99 (102)	11
recipient (n=177)	98	92	100	98 (177)	77 (177)	96 (177)	8

As is shown here, there is almost no difference between the topicworthiness properties of applicative objects and recipient objects. On the other hand, the differences between patient objects and applicative objects are even greater than those seen for applicative objects vs. canonical objects. Once again, it is evident that applicative objects are more similar to recipient objects in terms of these properties than they are to patient objects.

As was the case in considering average referential distance and topic persistence for different applicative object types, there are differences in the percentages of applicative objects exhibiting these topicworthiness properties when they are broken down into different types, as seen in Table 3.8. Again, some of these percentages are less reliable due to the small number of instances they are based on.

Table 3.8. Topicworthiness properties according to applicative object type.

	animate	pronom.	specific	identif.	proper	active	long
source (n=16)	88	81	100	94	56	94	19
all./mal. (n=13)	92	69	100	100	69	100	23
ben./mal. (n=48)	100	100	100	100	85	100	0
comit. (n=25)	68	72	92	100 (23)	74 (23)	100 (23)	20

It is clear that the large number of benefactive/malefactive applicative objects in the total inflates the figures for applicative objects as a whole. In the case of the topicworthiness properties, however, this influence is far less pronounced than it was in the case of relative topic continuity measurements, as discussed above.

Testing for significance in the differences in terms of Thompson's topicworthiness properties between applicative objects and canonical objects yields the following significant and near significant differences:

Table 3.9. Topicworthiness properties according to applicative type vs. patient and recipient objects.

Table 3.9.1. Benefactive/malefactive applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
ben./mal. (n=48)	100	100	100	100	85	100	0
patient (n=427)	38	33	91	86 (388)	33 (388)	71 (388)	66

Table 3.9.2. Benefactive/malefactive applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
ben./mal. (n=48)	100	100	100	100	85	100	0
recipient (n=177)	98	92	100	98	77	96	8

Table 3.9.3. Allative/malefactive applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
all./mal. (n=13)	92	69	100	100	69	100	23
patient (n=427)	38	33	91	86 (388)	33 (388)	71 (388)	66

Table 3.9.4. Allative/malefactive applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
all./mal. (n=13)	92	69	100	100	69	100	23
recipient (n=177)	98	92	100	98	77	96	8

Table 3.9.5. Source applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
source (n=16)	88	81	100	94	56	94	19
patient (n=427)	38	33	91	86 (388)	33 (388)	71 (388)	66

Table 3.9.6. Source applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
source. (n=16)	88	81	100	94	56	94	19
recipient (n=177)	98	92	100	98	77	96	8

Table 3.9.7. Comitative applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
comit. (n=25)	68	72	92	100 (23)	74 (23)	100 (23)	20
patient (n=427)	38	33	91	86 (388)	33 (388)	71 (388)	66

Table 3.9.8. Comitative applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
comit. (n=25)	68	72	92	100 (23)	74 (23)	100 (23)	20
recipient (n=177)	98	92	100	98 (177)	77 (177)	96 (177)	8

Differences that are significant for individual applicative object types appear to largely reflect the differences that are significant for the entire set of applicative objects given in Tables 3.6 and 3.7. These differences may be summed up simply by saying that the greater tendency for applicative objects to display the characteristics of animacy, pronominality, and properness as opposed to patient objects is statistically significant. The difference in the tendency for recipient objects to be animate and the tendency for

applicative objects to be animate is also significant. Otherwise, differences between recipients and applicative objects are almost always insignificant. The only exception is in the case of comitative applicative objects (Table 3.9.8), which are not animate or pronominal as often as recipient objects are. We will see below that comitative applicatives in Wolof also have a status which distinguishes them from other applicatives, although there are so few instances of comitative applicative constructions in the Wolof text corpus that it is impossible to say anything definitive about this issue.

3.3.3.2.2. Applicative objects vs. obliques.

Next, moving to a comparison of applicative objects and obliques, applicative objects, as expected, exhibit a far lower average referential distance, a far higher average topic persistence, and a far larger percentage of them exhibit topicworthiness properties than do obliques. Chi-square testing comparable to that discussed in the previous sections shows all of the differences between obliques and applicative objects reported in this section to be highly statistically significant.

First, consider the average referential distance and topic persistence comparisons between those for applicative objects and those for obliques as a class given in Table 3.10.

Table 3.10. **Referential distance and topic persistence for applicative objects vs. obliques.**

	average referential distance	average topic persistence
applicative objects (n=104)	1.8	4
obliques (n=203)	14.7	0.1

Clearly, there is a discourse status difference between applicative objects and obliques. The high average referential distance and low average topic persistence for obliques indicates these participants have almost no topic continuity. Average referential distance and topic persistence for various kinds of obliques differs only negligibly, as seen in Table 3.11.

Table 3.11. Referential distance and topic persistence according to oblique type.

	average referential distance	average topic persistence
static locative (n=95)	16.2	0
instrumental (n=23)	14	0.1
allative (n=22)	11.8	0.1
comitative (n=9)	12.8	0

There are similar differences between applicative objects and obliques when we consider the percentage of each which exhibit topicworthiness properties, seen in Table 3.12.

Table 3.12. Topicworthiness properties for applicative vs. oblique objects.

	animate	pronom.	specific	identif.	proper	active	long
app. (n=104)	93	87	98	99 (102)	75 (102)	99 (102)	11
oblique (n=199)	4	10	88 (175)	81 (175)	8 (175)	33 (175)	99

With the exception of specificity and identifiability, which are roughly comparable for obliques and applicative objects (as they are for all of the morphosyntactic entities under consideration here), a far smaller percentage of obliques exhibits topicworthiness properties. This especially clear in the case of animacy, pronominality and length: obliques are almost never animate or pronominal, and they are almost always long, whereas applicative objects are usually animate and pronominal, and hence short.

No surprising differences in the behavior of different obliques arise when we consider the percentage of major oblique types exhibiting Thompson's topicworthiness properties. See Table 3.13.

Table 3.13. Topicworthiness properties according to oblique type.

	animate	pronom.	specific	identif.	proper	active	long
static loc. (n=94)	0	0	98	77 (92)	2 (98)	26 (92)	99
inst. (n=23)	0	0	87	70 (20)	0 (20)	30 (20)	100
allative (n=22)	0	0	95	95 (21)	0 (21)	48 (21)	100
comit. (n=9)	55	1	77	100 (7)	43 (7)	57 (7)	100

The only noteworthy trend is for comitative obliques to be animate and proper, which presumably just reflects the tendency for comitatives to be human beings, a tendency not shared by other oblique types.

Finally, it will be recalled from Chapter 1 that comitatives may be instantiated either in the comitative applicative construction, as in (5), or in an oblique phrase, as in (6).

(5)   lawthlawpaa=ni?   hŋaaktsiapaa   ʔa-Ø-kal-pii
        farmer=ERG   boy   3SS-3SO-go-COM
        'The farmer left with the boy.'

(6)   lawthlawpaa   hŋaaktsiapaa=hee   ʔa-kal
        farmer   boy=COM   3SS-go
        'The farmer left with the boy.'

It is possible to consider the differences between oblique and applicative marking of comitative objects. Tables 3.14 shows that applicative comitatives have significantly lower referential distances and significantly higher topic persistences. Table 3.15 shows that applicative comitatives have a higher percentage of topicworthiness properties than oblique comitatives in only a couple of instances, however: in terms of pronominality (and the covarying long/short) and status.

Table 3.14. Referential distance and topic persistance for applicative vs. oblique instantiations of comitatives.

	average referential distance	average topic persistence
app. comit. (n=25)	1.5	1.9
obl. comit. (n=9)	12.8	0

Table 3.15. **Topicworthiness properties for applicative vs. oblique instantiations of comitatives.**

	animate	pronom.	specific	identif.	proper	active	long
app comit (n=25)	68	72	92	100 (23)	74 (23)	100 (23)	20
obl comit (n=9)	55	10	77	100 (7)	43 (7)	57 (7)	100

3.3.3.2.3. Effects of omission of quoted material.

The omission of quoted material from the calculations of the preceding sections results in little appreciable difference. Here, I compare results only for applicative objects and canonical objects, but the results for obliques are likewise virtually indistinguishable.[7] Tables 3.16-21 give the results of applying the same procedures to non-quoted material only.

If the following tables are compared with the corresponding tables in 3.3.3.2.1., the only noteworthy difference is that the topicworthiness properties are in most cases from a few to several percentage points lower in Tables 3.16-21. The explanation for this may simply be that since speech contains many references to first and second person (which are both presumably highly topical, if only on the level of narrative-internal discourse), inclusion of speech yields an impression of higher relative topicality overall.

Otherwise, the same sorts of discrepancies between object types are clearly visible, and they are of a magnitude comparable to the discrepancies seen earlier. Thus, very similar results are achieved, whether or not quoted material is considered.

Table 3.16. Referential distance and topic persistence for applicative vs. canonical objects (quoted material omitted).

	Average referential distance	Average topic persistence
applicative objects (n=33)	2	4
canonical objects (n=380)	6	3

Table 3.17. Referential distance and topic persistence for applicative vs. patient objects (quoted material omitted).

	Average referential distance	Average topic persistence
applicative objects (n=33)	2	4
patient objects (n=229)	8	2

---

[7]   It is clear that most of the differences in these tables are highly significant.

Table 3.18. Referential distance and topic persistence for applicative vs. recipient objects (quoted material omitted).

	Average referential distance	Average topic persistence
applicative objects (n=33)	2	4
recipient objects (n=151)	3	5

Table 3.19. Topicworthiness properties for applicative vs. canonical objects (quoted material omitted).

	animate	pronom.	specific	identif.	proper	active	long
applic. (n=33)	88	91	94	97 (30)	77 (30)	97 (30)	6
canon. (n=380)	52	51	96	85 (363)	48 (363)	77 (363)	41

Table 3.20. Topicworthiness properties for applicative vs. patient objects (quoted material omitted).

	animate	pronom.	specific	identif.	proper	active	long
applic. (n=33)	88	91	94	97 (30)	77 (30)	97 (30)	6
patient (n=229)	26	28	93	82 (212)	25 (212)	63 (212)	60

Table 3.21. Topicworthiness properties for applicative vs. recipient objects (quoted material omitted).

	animate	pronom.	specific	identif.	proper	active	long
applic. (n=33)	88	91	94	97 (30)	77 (30)	97 (30)	6
recpient (n=151)	95	89	100	99	79	95	10

3.3.3.2.4. Cooccurrence with other constructions.

In the case of Lai, there is little to say with regard to the cooccurrence of applicative constructions and other constructions which are sometimes thought to motivate the existence of applicative constructions. Lai has no passive construction, so applicative objects are never made into subjects. As discussed at the end of Chapter 1, applicative objects are accessible to the main relativization strategy in Lai. In the narratives which form the corpus for the present investigation, however, although relativization does occur, no instance of relativization on an applicative object is attested.

We also saw in Chapter 1 that there is a left-dislocation construction which applicative objects may participate in. There is only one clear instance of a combination of

this construction with an applicative construction in the text corpus. A few other instances of non-pronominalized applicative objects may also provide instances of this left dislocation construction, but since there are no NP subjects in these cases (to the left of which the applicative object would be dislocated), it is impossible to tell whether or not they do provide instances of it, strictly speaking.

The only clear morphosyntactic correlate of applicative constructions in Lai is object pronominalization, as we have seen in the consideration of topicworthiness properties above.

3.3.3.2.5.   Summary.

The preceding section has shown the results of application of the methodologies developed by Givón and Thompson for measuring relative topicality of participants to a large Haka Lai text corpus. On the basis of this investigation, Haka Lai applicative objects exhibit topic continuity and topicworthiness properties to a degree approximating that of recipient objects and surpassing that of patient objects; they are far more topical than obliques. At the same time, the investigation has revealed no instances of use of applicative constructions in Haka Lai along with relativization constructions, and at most only a few cases of their use in conjunction with the Lai left-dislocation construction. The investigation thus indicates that in narrative discourse, the primary discourse function of these constructions is to indicate the presence of a highly topical object with a particular thematic role, and not to make such objects accessible to constructions which have stringent acccessibility restrictions.

3.3.4.   Wolof.

Wolof has two applicative construction markers which have a relatively high text frequency for applicatives. One of these is usually described as marking benefactive applicative constructions, as it does in 7.

(7)   jënd-al   naa   ko   aw   fas
       buy-BEN   1SS.NEUT.FOC   3SO   DET   horse
       'I bought a horse for him.' (Church 1981:286)

Text attestations of it also involve comitative semantics, however, as in 8.

(8)   yow   laa   mën   and-al
        2S.PRON   1SS.PRED.FOC   able   accompany-COM
        'It's with you that I can go.' (Kesteloot 1983:67)

The other construction is a generalized applicative whose applicative objects are usually described as either static locatives or instrumentals, as seen in 9a and b.

(9)   a.   foofa laa   ko   gis-e
                 there 1SS.PRED FOC   3SO   see-LOC
                 'It's there that I saw him.' (Church 1981:325)

        b.   paaka la   ko   jam-e
                 knife 3SS.PRED.FOC   3SO   stab-INST
                 'It's with a knife that he stabbed him.' (Church 1981:323)

In texts, however, the most common use of this marker is one in which it refers to a manner proform, as in 10,

(10)   du-ma   ko   def-e   noonu
        FUT.NEG.AUX-1S   3SO   do-MANNER   thus
        'I'm not going to do it that way.' (Church 1981:331)

or in which the manner proform is the target of a relativization (see 11, where the construction is actually headless).

(11)   du-ñu   ko   jàngloo
        FUT.NEG.AUX-3P   3SO   read

        [ni   mu   wara   jàng-e]
        REL.PRON   3SS   ought read-MANNER
        'They're not going to read it as one should read.' (Church 1981:332)

Wolof is also interesting in terms of the constructions it has which would potentially interact with its applicative constructions. Besides relativization, it has a topicalization construction, involving left dislocation of an NP and a pronominal copy of it within the clause, and what has sometimes been described as a cleft construction (e.g. by Schwartz 1975, illustrated in 9 above) which may cooccur with applicative constructions. Except perhaps in the case of topicalization, to my knowledge, none of these constructions strictly requires that an applicative construction be used in order to make a semantically peripheral entity accessible to it, however.

The texts used for the bulk of the study include: *Ñetti xuuge yi* 'Three hunchbacks', *Taalibe bi ag jabaru sëriñ bi* 'The student and the wife of the marabout', *Ndaw si fi nekkoon te né du sey ag boroomub légët* 'The young woman who didn't want to mary a man with a scar', *Cosaanu Ndombo* 'The story of Ndombo', *Lu-tax am jegééni Ngor ñu dul am jëkkër* 'Why some women of Ngor never get married', *Sey bu wóórul* 'The uncertain marriage' (all from Kesteloot 1983), and *Musibam Mbàbba Kumba* 'The disaster of Mbabba Kumba' (from Cisse 1994), amounting to several hundred clauses. These were augmented with an amount of text material about twice this size in order to find a sufficient number of applicative constructions to yield worthwhile results, primarily with other texts in Kesteloot 1983.

3.3.4.1. Complications specific to Wolof.

There some Wolof-specific characteristics which should be commented on prior to a consideration of the results of the survey. First, while in Haka Lai instantiations of participants as long or short corresponded directly to whether or not they were instantiated by a full NP or simply by a pronominal, this is not the case in Wolof. In Wolof, there are four possibilities for the instantiation of objects, each of which was coded differently. First, there is a set of specialized pronominal object clitics, and if just one of these occurred, an instantiation was coded as pronominal and short. Secondly, obliques use a different set of pronominals (the independent pronominals), unmarked for case and with more substantial phonetic content than the pronominal clitics; if such a pronominal occured, it was coded as pronominal and long. Next, a full NP might occur. Such instantiations were coded as non-pronominal and long. Finally, there is occasionally a zero instantiation of objects. These instantiations were given an altogether separate coding (zero), but they were so few in number that they do not affect the overall results in any substantial way.

A further complication posed by the Wolof text survey has to do with the assessment of referential distance and topic persistence for one type of applicative object. As noted above, the generalized applicative construction frequently makes reference to a

manner adverbial proform. It is not clear that such a grammatical entity is referential in the normal sense of the word. In any event, while it is generally possible to provide some kind of an assessment for the ability of listeners to distinguish the manner in which an action is performed and so forth (as is done in assessing these elements for topicworthiness properties), it is unclear in which clause the manner in which an action began to be performed in is first mentioned. Thus, I did not attempt to assess such entities for referential distance and topic persistence.

3.3.4.2. Results.

The results reported on in this section may be summarized as follows. For prototypically animate applicative objects, the survey shows results highly similar to those seen in the Haka Lai section above: such objects are essentially equivalent to recipient objects in terms of topicality status. However, with the exception of a few of the properties considered, the overall topicality status of applicative objects which are not prototypically animate is not significantly higher than that found for other object types, including obliques. In addition, the use of applicative constructions referring to an inanimate is frequently, though not categorically, associated with other construction types, such as relativization and clefting.

3.3.4.2.1. Applicative objects vs. canonical objects.

As seen in Table 3.22, in terms of referential distance and topic persistence, there is virtually no difference between applicative objects as a group and canonical objects, here defined in the same manner as for Haka Lai above.

Table 3.22. Referential distance and topic persistence for applicative vs. canonical objects.

	average referential distance	average topic persistence
applicative objects (n=71)	7.1	1.6
canonical objects (n=331)	7.6	1.5

Breaking non-applicative objects into two groups, as we did for Haka Lai, however, we can see that applicative objects lie somewhere in between patient objects (Table 3.23) and recipient objects (Table 3.24) in terms of these measurements. In fact, only the the

differences between applicative objects and recipient objects are statistically significant (again, statisitically significant differences are shown in boxes). That is, taken as a group, applicative objects are indistinguishable from patient objects, and they share with patients a lower topic continuity status than recipient objects have.

Table 3.23. Referential distance and topic persistence for applicative vs. patient objects.

	average referential distance	average topic persistence
applicative objects (n=71)	7.1	1.6
patient objects (n=261)	8.9	1

Table 3.24. Referential distance and topic persistence for applicative vs. recipient objects.

	average referential distance	average topic persistence
applicative objects (n=71)	7.1	1.6
recipient objects (n=70)	3.2	3.2

As might be expected, there are substantial differences when applicative objects are divided either according to the applicative marker involved (Table 3.25) or the thematic status of the applicative object (Table 3.26).

Table 3.25. Referential distance and topic persistence according to applicative marker.

applicative object type	average referential distance	average topic persistence
benefactive/comitative (n=21)	2.7	2.9
generalized (n=25)	10.6	0.6

Table 3.26. Referential distance and topic persistence according to applicative object type.

applicative object type	average referential distance	average topic persistence
benefactive (n=16)	1.1	3.5
comitative (n=5)	9.5	0.3
instrumental (n=13)	8.5	0.6
locative (n=9)	12.2	0.7

Considering the Table 3.25, it would appear that applicative constructions which prototypically have an animate applicative object have a lower referential distance, and at least a somewhat higher topic persistence. This conclusion is not entirely borne out by Table 3.26, however, in that comitative objects pattern more closely with instrumentals and locatives, although they are animate more than half the time. In what follows I will not

consider comitative objects in detail, however, since there are so few of them, and results based on them are unlikely to be reliable.

When specific applicative object types are considered vis-à-vis patient and recipient objects, some clear differences emerge between them. Thus, while the greater topic continuity displayed by benefactive applicative objects when compared with patient objects is statistically significant (seen in Table 3.27), the differences between benefactive applicative objects and recipient objects are not (Table 3.28).

Table 3.27. **Referential distance and topic persistence for benefactive applicative vs. patient objects.**

	average referential distance	average topic persistence
ben. app. objects (n=16)	1.1	3.5
patient objects (n=316)	8.9	1

Table 3.28. **Referential distance and topic persistence for benefactive applicative vs. recipient objects.**

	average referential distance	average topic persistence
ben. app. objects (n=16)	1.1	3.5
recipient objects (n=70)	3.2	3.2

That is, benefactive applicative objects are highly similar to recipients in terms of these properties. These results are comparable to what we saw for benefactive applicative constructions in Haka Lai in the previous section.

Turning to a comparison of other types of applicative objects (instrumentals and locatives) and patient and recipient objects, however, the only significant differences are the ones between recipients and applicative objects. The tendency is for these types of applicative object to have a lower degree of topic continuity than recipient objects (see Tables 3.30 and 3.32). They are not distinguishable from patients, as shown in Tables 3.29 and 3.31.

Table 3.29. **Referential distance and topic persistence for benefactive applicative vs. patient objects.**

	average referential distance	average topic persistence
inst. app. objects (n=13)	8.5	0.6
patient objects (n=316)	8.9	1

Table 3.30. Referential distance and topic persistence for benefactive applicative vs. recipient objects.

	average referential distance	average topic persistence
inst. app. objects (n=13)	1.1	3.5
recipient objects (n=70)	3.2	3.2

Table 3.31. Referential distance and topic persistence for benefactive applicative vs. patient objects.

	average referential distance	average topic persistence
loc. app. objects (n=16)	12.2	0.7
patient objects (n=316)	8.9	1

Table 3.32. Referential distance and topic persistence for benefactive applicative vs. recipient objects.

	average referential distance	average topic persistence
loc. app. objects (n=16)	1.1	3.5
recipient objects (n=70)	3.2	3.2

A consideration of the topicworthiness status of applicative objects and canonical objects reveals similar patterns. With the exceptions of animacy and pronominality, applicative objects and canonical objects do not differ appreciably, as seen in Table 3.33.

Table 3.33. Topicworthiness properties for applicative vs. canonical objects.

	animate	pronom.	specific	identif.	proper	active	long
app (n=71)	31	84	92	86 (65)	40 (65)	69 (65)	38
canon. (n=331)	62	50	93	83 (309)	41 (309)	72 (309)	53

Tables 3.34 and 3.35 indicate that the main contributors to the differences in these areas are patients, on the one hand, of which a far lower percentage are pronominal, and recipients, on the other, of which a far higher percentage are animate. Table 3.35 also shows that compared with applicatives as a group, the greater tendency for recipients to display most object properties is significant.

Table 3.34. Topicworthiness properties for applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
app (n=71)	31	84	92	86 (65)	40 (65)	69 (65)	38
patient (n=261)	52	41	92	78 (239)	31 (239)	65 (239)	61

Table 3.35. Topicworthiness properties for applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
app (n=71)	31	84	92	86 (65)	40 (65)	69 (65)	38
recipient (n=70)	100	80	100	97	73	94	17

Next, when different applicative types are considered, there are substantial differences both in terms of the applicative marker (as seen in Table 3.36) and in terms of the thematic status of the applicative object (Table 3.37).

Table 3.36. Topicworthiness properties according to applicative marker.

	animate	pronom.	specific	identif.	proper	active	long
ben/com (n=21)	86	95	95	95 (20)	85 (20)	95 (20)	9
general. (n=50)	31	83	92	86 (46)	40 (46)	69 (46)	38

Table 3.37. Topicworthiness properties according to applicative object type.

	animate	pronom.	specific	identif.	proper	active	long
benef. (n=16)	94	100	100	100	94	100	0
comit. (n=5)	60	80	80	75 (4)	50 (4)	75 (4)	40
instrum. (n=14)	21	57	100	71	36	64	57
locative (n=11)	9	64	90	70 (10)	30 (10)	40 (10)	45
manner (n=23)	0	86	81	77 (17)	0 (17)	45 (17)	50

A tabular comparison of different applicative types and patient objects is given in the subtables of Table 3.38.

Table 3.38. Topicworthiness properties according to applicative object type vs. patient objects.

Table 3.38.1. Benefactive applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
benef. (n=16)	94	100	100	100	94	100	0
patient (n=261)	52	41	92	78 (239)	31 (239)	65 (239)	61

94

Table 3.38.2. Instrumental applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
instrum. (n=14)	21	57	100	71	36	64	57
patient (n=261)	52	41	92	78 (239)	31 (239)	65 (239)	61

Table 3.38.3. Locative applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
locative (n=11)	9	64	90	70 (10)	30 (10)	40 (10)	45
patient (n=261)	52	41	92	78 (239)	31 (239)	65 (239)	61

Table 3.38.4. Manner applicative vs. patient objects.

	animate	pronom.	specific	identif.	proper	active	long
manner (n=23)	0	86	81	77 (17)	0 (17)	45 (17)	50
patient (n=261)	52	41	92	78 (239)	31 (239)	65 (239)	61

Table 3.38.5. Benefactive/comitative applicative marker and patient objects.

	animate	pronom.	specific	identif.	proper	active	long
ben/com (n=21)	86	95	95	95 (20)	85 (20)	95 (20)	9
patient (n=261)	52	41	92	78 (239)	31 (239)	65 (239)	61

Table 3.38.6. Generalized applicative marker and patient objects.

	animate	pronom.	specific	identif.	proper	active	long
general. (n=50)	31	83	92	86 (46)	40 (46)	69 (46)	38
patient (n=261)	52	41	92	78 (239)	31 (239)	65 (239)	61

As can be seen from these comparisons, only in the cases of benefactive applicative objects and constructions marked by the benefactive/comitative applicative marker are there many significant differences between the percentage of applicative and patient objects displaying topicworthiness properties. The differences we do see for the other categories of objects are mostly easily explained: instrumentals and locatives tend to be inanimate, and manners are by definition inanimate and not proper. These tendencies are also reflected in the comparison of patient objects and objects in the generalized applicative construction.

A similar comparison between applicative objects and recipient objects in seen in the subtables of Table 3.39.

Table 3.39. Topicworthiness properties according to applicative object type vs. recipient objects.

Table 3.39.1. Benefactive applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
benef. (n=16)	94	100	100	100	94	100	0
recipient (n=70)	100	80	100	97	73	94	17

Table 3.39.2. Instrumental applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
instrum. (n=14)	21	57	100	71	36	64	57
recipient (n=70)	100	80	100	97	73	94	17

Table 3.39.3. Locative applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
locative (n=11)	9	64	90	70 (10)	30 (10)	40 (10)	45
recipient (n=70)	100	80	100	97	73	94	17

Table 3.39.4. Manner applicative vs. recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
manner (n=23)	0	86	81	77 (17)	0 (17)	45 (17)	50
recipient (n=70)	100	80	100	97	73	94	17

Table 3.39.5. Benefactive/comitative applicative marker and recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
ben/com (n=21)	86	95	95	95 (20)	85 (20)	95 (20)	9
recipient (n=70)	100	80	100	97	73	94	17

Table 3.39.6. Generalized applicative marker and recipient objects.

	animate	pronom.	specific	identif.	proper	active	long
general. (n=50)	31	83	92	86 (46)	40 (46)	69 (46)	38
recipient (n=70)	100	80	100	97	73	94	17

Here the picture differs somewhat. Recipient objects display some topicworthiness properties to a lesser degree than benefactive applicative objects (Table 3.39.1); except in terms of animacy, though, when the benefactive/comitative applicative construction's objects are compared to recipient objects, there is little difference (Table 3.39.5). On the other hand, there are numerous differences between all other applicative object types considered and recipient objects. The only properties for which they do not consistently differ are pronominality and specificity. These differences are likewise reflected in the comparison of generalized applicative construction objects and recipient objects in Table 3.39.6.

3.3.4.2.2. Applicative objects vs. obliques.

Moving on to differences which the survey reveals between applicative objects and oblique objects, there are further interesting deviations from the results obtained for Haka Lai. The differences between applicative objects as a whole and obliques in terms of average referential distance and topic persistence ratings are both significant, as seen in Table 3.40.

Table 3.40. Referential distance and topic persistence for applicative vs. oblique objects.

	average referential distance	average topic persistence
applicative objects (n=45)	7.1	1.6
oblique objects (n=133)	14	0.4

However, when different applicative types are considered alongside obliques in general, it turns out that only for some of these is the difference between applicative objects and obliques significant. Thus, while differences between benefactive applicative objects and obliques are significant for both referential distance and topic persistence (Subtable

3.41.1), for other applicative object types, only the referential distance ratings of instrumental applicative objects differs significantly from that of obliques (Subtables 3.41.2 and 3.41.3).

Table 3.41. Referential distance and topic persistence according to applicative type vs. oblique objects.

Table 3.41.1. Benefactive applicative vs. oblique objects.

	average referential distance	average topic persistence
benefactive objects (n=16)	1.1	3.5
oblique objects (n=133)	14	0.4

Table 3.41.2. Instrumental applicative vs. oblique objects.

	average referential distance	average topic persistence
instrumental objects (n=13)	8.5	0.6
oblique objects (n=133)	14	0.4

Table 3.41.3. Locative applicative vs. oblique objects.

	average referential distance	average topic persistence
locative objects (n=9)	12.2	0.7
oblique objects (n=133)	14	0.4

In the same way, while applicative objects display many topicworthiness properties more frequently than obliques when considered as a whole (see Table 3.42), the subtables in Table 3.43 indicate that there are clear differences in the distribution of this significance accross different types of applicative objects.

Table 3.42. Topicworthiness properties for applicative vs. oblique objects.

	animate	pronom.	specific	identif.	proper	active	long
applic. (n=71)	31	84	92	86 (65)	40 (65)	69 (65)	38
oblique (n=137)	24	12	95	77 (130)	17 (130)	40 (130)	95

Table 3.43. Topicworthiness properties according to applicative type vs. oblique objects.

Table 3.43.1. Benefactive applicative vs. oblique objects.

	animate	pronom.	specific	identif.	proper	active	long
benef. (n=16)	94	100	100	100	94	100	0
oblique (n=137)	24	12	95	77 (130)	17 (130)	40 (130)	95

Table 3.43.2. Instrumental applicative vs. oblique objects.

	animate	pronom.	specific	identif.	proper	active	long
instrum. (n=14)	21	57	100	71	36	64	57
oblique (n=137)	24	12	95	77 (130)	17 (130)	40 (130)	95

Table 3.43.3. Locative applicative vs. oblique objects.

	animate	pronom.	specific	identif.	proper	active	long
locative (n=11)	9	64	90	70 (10)	30 (10)	40 (10)	45
oblique (n=137)	24	12	95	77 (130)	17 (130)	40 (130)	95

In fact, for instrumental and locative applicative objects, the only statistically significant differences compared with obliques have to do with the instantiation of the entities, and have nothing to do with their inherent semantic characteristics.

A final comparison may be made between the oblique and applicative object instantiations of instrumentals and locatives. Again, there is no significance to differences in average referential distance and topic persistence, shown in Tables 3.44 and 3.45. The difference in referential distance in the case of instrumentals is quite striking, however, and a larger sample might show it to be significant.

Table 3.44. Referential distance and topic persistence for applicative vs. oblique instantiations of locatives.

	average referential distance	average topic persistence
applicative locative (n=9)	12.2	0.7
oblique locative (n=54)	15.8	0.2

Table 3.45. Referential distance and topic persistence for applicative vs. oblique instantiations of instrumentals.

	average referential distance	average topic persistence
applicative instrum. (n=13)	8.5	0.6
oblique instrum. (n=9)	17.1	0

There is also little difference in terms of topicworthiness properties between oblique and applicative object instantiations of locatives other than those already noted above between this applicative object type and obliques in general. This is shown in Table 3.46.

Table 3.46. **Topicworthiness properties for oblique vs. applicative instantiations of locatives.**

	animate	pronom.	specific	identif.	proper	active	long
app. loc. (n=11)	9	64	90	70 (10)	30 (10)	40 (10)	45
obl. loc. (n=54)	10	18	98	83 (53)	33 (53)	56 (53)	98

Instrumental applicative objects differ slightly, however, in also showing a greater tendency to be proper and active when compared to oblique instrumental objects (Table 3.47).

Table 3.47. **Topicworthiness properties for oblique vs. applicative instantiations of instrumentals.**

	animate	pronom.	specific	identif.	proper	active	long
app. inst. (n=14)	21	57	100	71	36	64	57
obl. inst. (n=9)	0	0	100	44	0	11	100

Other than this last observation, however, it is clearly the case that for instrumental and locative applicative objects, besides their higher tendency to be instantiated as pronominals, there is little indication that they have a higher topic continuity status or that they more consistently display topicworthiness properties compared to oblique instrumentals and locatives.

3.3.4.2.3. Cooccurrence with other constructions.

Wolof also exhibits some differences in terms of the tendency for applicative constructions to cooccur with other construction types. In the text corpus, benefactive applicative constructions never cooccured with relativization, clefting, or topicalization of the benefactive.

For instrumental applicatives, out of fourteen instances of the construction, two involved relativization on the instrumental, two involved clefting of the instrumental, and two involved topicalization of the instrumental. While none of these constructions occurred in a substantial number of examples, taken together they amount to almost half of the

instances of instrumental applicative constructions in the sample. By comparison, there were no instances of oblique instrumentals participating in any of these constructions.

Similarly, out of eleven instances of the locative applicative construction, three also involved relativization on the locative, and two involved clefting of it. Three out of fifty-four oblique locatives were clefted. The other constructions were not attested in conjunction with oblique locatives at all.

Next, out of twenty-two manner applicative constructions, six also involved clefting of the manner adverbial, and one relativized on it.

Finally, it should be noted that although they were few in number (five), comitative applicative objects, in a construction marked formally by the same morphology as that used for benefactive applicative constructions, showed a clear tendency either to be clefted or relativized on. Although they were not discussed in detail above due to their small number, it may be recalled that their referential distance and topic persistence figures more closely approximated those of locative, instrumental, and manner adverbials than those of benefactive applicatives

3.3.5. Summary.

In summary, then, the comparison of applicative discourse function in Haka Lai and Wolof has yielded some interesting observations. In the case of the first language, all evaluable applicative constructions involve an object which is of a discourse status surpassing that of patient objects and closely approximating that of recipients. It is of note, however, that the Haka Lai applicative objects in question are predominantly animate. In Wolof, while benefactive applicative constructions are much like the applicatives seen in Haka Lai, other applicative constructions do not usually involve an applicative object with a particularly high degree of discourse continuity or with a particular tendency to display topicworthiness properties aside from a pronominal instantiation. These constructions allow a preferred means of expressing an object in either relativization, clefting, or topicalization constructions, or simply allow a pronominal expression of the argument in

question, and it is likely that these goals motivate their use. It appears on the basis of these languages (and this would also hold for the findings of Rude 1986 and Thompson 1990, whose results pertain primarily to animates) that the dividing line between these two functions is the status of the prototype applicative object in a given construction as either animate or inanimate. Testing this hypothesis will require further detailed text studies of this sort.

Chapter 4

The evolution of applicative constructions.

4.1 Introduction.

There have only been a few short studies concerning diachronic aspects of applicative constructions. The goal of this chapter is to provide an account of the life cycle of applicative constructions with exemplification from a variety of language families.

Most previous studies of applicative diachrony deal with the source of the morphology which marks the constructions (Craig and Hale 1988, Garrett 1990, Rude 1991). While there are potential exceptions, as will be shown below, the answer to the question of where the morphology marking applicative constructions comes from is relatively simple: there are adpositional and verbal sources. We will see that the motivations for this sort of development are discourse ones: applicative constructions appear to develop when the applicative object is high in topicality, especially when it is so topical that it is dislocated to a position reserved for highly topical entities or subject to zero-anaphora. Thus the historical development of applicative constructions appears to be consonant with what we have seen regarding the discourse status they signal for their objects. Section 4.2. discusses this aspect of applicative diachrony.

A murkier area is what happens to applicative constructions after they have arisen. We will see in section 4.3. that while probably all applicative constructions have some discourse relevance, this aspect of an applicative construction may from the outset be more or less pronounced in a given language. In the case of applicatives which do not originally exhibit a particularly pronounced discourse function, this aspect of their character may be expanded (discussed in 4.4).

What happens to applicative constructions when they stop being synchronic applicatives is another issue. Section 4.5 shows that the morphology associated with the discourse-functional applicative type may develop into markers of topicalization

constructions or markers of oblique relativization. The latter may then give rise to productive nominalization strategies. As I will discuss below, it is not always clear, however, that such strategies are direct developments from applicative constructions, and they might instead simply be instances of independent grammaticalization of the morphology used to mark applicative constructions in nominalizations or relativization constructions.

Finally, combinations of markers of applicative constructions and verbs may also become lexicalized. 4.6. illustrates this type of development.

Figure 4.1 summarizes the diachronic developments which I examine in this chapter. Each of the arrows in the figure represents a continuum of grammaticalization, and it is rarely the case that a particular attested stage of a language has only one endpoint of the arrow. As is usual in grammaticalization, there may be multiple stages of development attested simultaneously at any given synchronic point (Hopper 1991). Figure 4.1 involves a number of stages, each of which has a number of complications associated with it, and each section below will deal with a particular segment of the potential for development.

Figure 4.1. The evolution of applicative constructions.
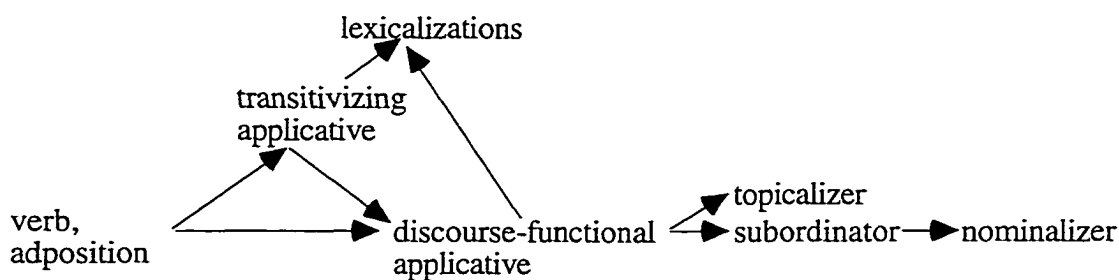
4.2. Source morphology.

In this section, I describe in detail the grammaticalization of adpositions and verbs as markers of applicative constructions. As can be seen in Figure 4.2, which represents this stage of applicative constructions' evolution in somewhat greater detail than in Figure

4.1, there are some possible cases in which the development of applicatives is not directly from an adposition or verb.

Figure 4.2. Source morphology.

verb

adposition ——▶ applicative

?

noun
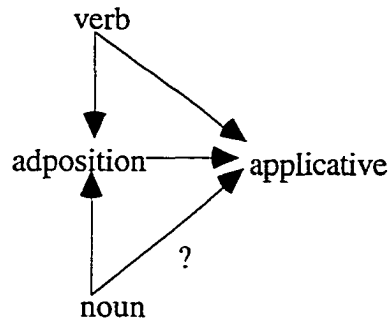
Note that this development accounts straightforwardly for the most salient feature of applicative constructions, that the applicative object has some or all of the characteristics of a more central or core object. Seen from a diachronic perspective, the applicative object was the object of either a transitive verb or an adposition which governed it as an object. This syntactic status is simply an aspect of its origin which is not lost when the applicative object's governing verb or adposition grammaticalizes as an applicative marker.

4.2.1. Adpositional sources.

The most extensive investigation of adpositional sources for applicative constructions is Craig and Hale 1988. These authors suggest that what they call relational preverbs, a variety of applicative, are adpositional in origin. According to Craig and Hale, relational preverbs are first productively cliticized under special discourse conditions. For example, in Rama (Chibchan, Nicaragua), if the object of a postposition is given information, it may be subject to zero-anaphora, and its stranded postposition cliticizes to the verb, as in (1b), the second line of a text following (1a).

(1)   Rama (Craig and Hale 1988:322)
  a.   nainguku   kiskis nsu-kuaakar-i,
       so   tongs   we-have-ASP
       'That's why we have the tongs,

  b.   suli-kaas   Ø   yu-nsu-auk-kama
       animal-meat   pv/with-we-roast-SUB
       'for us to roast meat with it...

In the first line, 'tongs' is introduced, and in the second line it is omitted, but the postposition it would have occurred with in the second line (*yu-<u*) cliticizes to the following verb. In Craig and Hale's text example the tongs continue to be subject to zero-anaphora for several more lines, and each instance of zero-anaphora involves procliticization of the stranded postposition.

Zero-anaphora eventually becomes unnecessary as a precondition for use of the most commonly cliticized preverbs. Craig and Hale do not motivate this latter development, but there are at least two possible ways to do so. First, the removal of zero-anaphora as a precondition may be motivated simply by a reanalysis of the stranded adpositional element as a piece of verbal derivational morphology, or in other words, as a true applicative marker.

Secondly, and perhaps a more likely cause for this sort of reanalysis, in some languages which appear to be undergoing this type of development, zero-anaphora is not the only condition under which stranding of the adposition may occur. If the noun phrase associated with the adposition is dislocated to some topicalization position, or is put in the position of an extracted relative clause head, for instance, the same type of adposition stranding results. For instance, consider the Bemba data in (2).

(2)   nàà-mweene   ingaanda   iyo   umunaandi   àà-keele-mo
       I-saw   house   that   friend-my   he-lived-in
       'I saw the house that my friend lived in.' (Givón 1975:85)

In (2), relativization is accomplished by dislocation of the relative clause head and the use of a relative pronoun. Since the element relativized on is a locative, the prepositional element which expressed the locative relation is cliticized to the end of the relative clause verb. In cases like this, where the noun phrase associated with the applicative morphology is not absent, the relative clause verb form might simply be assumed to be an alternative main clause form, and thus be generalized to yield instances in which the applicative object is not subject to zero-anaphora.

Once such a reanalysis has occurred, the postposition's former object may be treated as a core argument of the verb rather than as an oblique. Since attachment of that nominal's adposition to the verb has deprived it of one of the more usual indicators of obliqueness, it is reasonable that it no longer be treated as an oblique.

It should be noted that adpositions typically have verbal or nominal sources, and in the case of the latter, it is not clear that there must always be a discrete adpositional stage for the development of an applicative constructions to occur. Craig and Hale (343) mention Walbiri, with benefactive, ablative, and comitative applicative constructions from apparently nominal sources as a possible case of this sort of development. Another possibility is that the adpositional use of an element in a noun-adposition-applicative marker grammaticalization chain could fall into disuse, leaving only the nominal and the applicative marker and simply creating the appearance that there has been a direct nominal > applicative marker development. In most cases of applicative marker grammaticalization that I am familiar with, only adpositional and applicative marker stages are attested.

In the remainder of this section I present some further cases of grammaticalization of applicative markers from adpositional sources.

4.2.1.1. Kinyarwanda.

There are applicative markers in some Bantu languages, as in the Bemba case cited above, which are of transparently adpositional provenance. These adpositional applicatives are of interest because they are examples of adpositional applicatives in languages which do not have basic OV order (which is the case for most languages discussed by Craig and Hale), and hence they provide instances of a comparable development in VO languages. For example, consider the following examples from Kinyarwanda:

(3)　Kinyarwanda (Kimenyi 1980:94)
　　a.　umwaalimu　y-oohere-je　igitabo　　kw'iishuuri
　　　　teacher　　he-send-asp　book　　　to school
　　　　'The teacher sent the book to school.'

　　b.　umwaalimu　y-oohere-je-ho　ishuuri　　igitabo
　　　　teacher　　he-send-asp-app　school　　book
　　　　'The teacher sent the book to school.'

(4) a. umwaana   y-a-taa-ye   igitabo   mu   maazi
         child   he-past-throw-asp   book   in   water
         'The child has thrown the book into the water.' (89)

     b. umwaana   y-a-taa-ye-mo   amaazi   igitabo
         child   he-past-throw-asp-app   water   book
         'The child has thrown the book into the water.' (89)

In all of these sentences there is an allative participant. For each pair of sentences, the first sentence shows a preposition marking the allative object which in the second sentence is cliticized to the end of the verb. The phonetic similarity between the cliticized 'postverbs' and the prepositions of the (a) sentences is obvious, especially in the second case. In the (b) sentences, the allative object has all of the expected characteristics of a direct object in Kinyarwanda; hence, the sentences with the cliticized preposition are instances of applicative constructions.

4.2.1.2. Nadëb

The most thorough study of applicative constructions with clearly adpositional sources to date for any single language is Weir 1986. Weir carefully examines the distribution of several postpositions in Nadëb which are at various stages of grammaticalization as markers of applicative constructions.

For example, the postposition *yó* 'on top of', seen in example (5)

(5) kalapéé   a-sooh   bxaah   yó
     child   formative-be=sitting   tree   on top of
     'The child is sitting on the tree.' (299)

may be incorporated with or without phonetic alteration of the postposition, as in the two examples in (6).

(6) a. bxaah kalapéé   yó   sooh (299)

     b. bxaah kalapéé   ya-sooh
         'The child is sitting on the tree.' (300)

In both instances, it is clear that the locative argument is a direct object, given its sentence-initial position in this OSV language.

A different postposition, *hã*, glossed as 'dative', is preferentially incorporated as applicative morphology, though the postpositional and the phonetically unmodified variants are still possible for some speakers, as seen in (7).

(7) a. salãap   a-dŮʉ́ng   kalapéé   hã
         measles   formative-fall.unitary child   dative

     b. kalapéé   salãap   hã   dŮʉ́ng

     c. kalapéé   salãap   ha-dŮʉ́ng
         'The child caught measles (Measles fell on the child).'(301)

Weir suggests that this sort of postposition represents an intermediate stage of development into preverbs. More advanced stages of preverb development involve lexicalization of the preverb with the verb root and an increased specialization in the use of the applicative construction, which will be discussed in later sections.

4.2.1.3. Oceanic.

In Oceanic, Durie 1988 suggests, there are a number of languages in which prepositions have arisen from serialized verbs. For instance, Durie claims that in Mokilese, the suffix *-ki*, seen at the end of the verb in (8a),

(8) a. ngoah insengeh-ki kijinlikkoano nah   pehno
         1s   write-with   letter   his   pen
         'I wrote the letter with his pen.' (Durie 1988:8)

     b. jerimweim   koalikko   pokihdi   jerimweim   siksikko
         boy   big   hit   boy   little

         ki   suhkoahpas
         with   stick
         'The big boy hit the little boy with a stick.' (Durie 1988:8)

comes from a serialized verb, and that sentences like (8b), in which the *ki* element appears as a preposition, are a later development.

In other languages, though, what is clearly historically related phonetic material has developed into what may be an applicative, as in the case of the postverbal affix *-ki* seen in Ponapean (9), which Rehg 1981 describes as an 'instrumental suffix' (224).

(9)   i   pahn duhpi-ki   seriet   lihmwet
       I   will   bathe-with   child.this   sponge.this
       'I will bathe this child with this sponge.' (Rehg 1981:225)

In Ponapean, there is no evidence for a prepositional use of the suffix as there is for Mokilese.

In Niuean, Seiter 1979 describes the behavior of the presumably cognate preposition *aki*, which he says may cliticize to the verb under zero-anaphora of the instrument object. These conditions are quite similar to those shown by Craig and Hale 1988 to be important in the development of the relational preverb applicative type. Seiter's description of this phenomenon is the most evidence we have that this verb/preposition/affix acts as an applicative anywhere in Oceanic, but it is still unclear that the affixal use unambiguously marks an applicative construction in any strict sense.

It not entirely clear, therefore, what the route of development in these cases is. On the one hand, applicative-like uses of this suffix might have arisen from a preposition which in turn resulted from a serialized verb, as Durie claims as the origin for the preposition in Mokilese. On the other hand, applicative markers may themselves arise from serialized verbs (as we will see below), so it might not be necessary in other cases (e.g. Ponapean) to posit an intermediate prepositional stage. More definitive historical explanation will require careful work on the synchronic syntax of this morphology in Oceanic.

4.2.2. Verbal sources.

As mentioned in the preceding section, Durie 1988 notes that there is a tendency for serialized verbs to develop either into prepositions, by categorial dissimilation from the verb, or to become a verbal affix of one sort or another (3). While Durie is primarily concerned with the change from verb to preposition, in this section, we will be interested in cases of the change from verb to affix, especially where the resulting affix ends up marking an applicative construction.

4.2.2.1. Sahaptian-Klamath

Rude 1991 is the only study devoted to the verbal origin of applicative morphology, concentrating on several such constructions in Sahaptian-Klamath. Nez Perce and Sahaptin make up one branch of this small family, and the second branch is represented by Klamath.

The Nez Perce beneficiary/recipient applicative construction is marked by the suffix *a'n*, seen in (10).

(10)   Nez Perce (Rude 1991:186)
        wálc   páa-ny-a'n-ya   'áayato-na
        knife   3subj.3obj-make-app-past   woman-obj
        'He made the woman a knife.'

This suffix is apparently cognate with a Sahaptin benefactive applicative suffix *-ni*. In both of these languages, there are independent verbs which, according to Rude, are the source for these suffixes: *'eni* and *ni*, both of which mean 'to give'. Klamath has a non-cognate benefactive applicative suffix, but it is nonetheless also from a verb meaning 'to give'.

Comitative applicatives in Nez Perce are marked by the verbal suffix seen in example (11).

(11)   láwtiwaa-na   pée-tuqi-twe-c-e
        friend-obj   3subj.3obj.-smoke-com.app-prog-sg.nom
        'He is smoking with a friend.' (192)

Nez Perce has no attested independent verb for this suffix, but Rude claims it is found fossilized in forms like *tiwíikin* 'to accompany, follow', Sahaptin *twánan* 'to follow', and in its Klamath cognate *dola*, which is used as a comitative postposition.

Rude notes that in Nez Perce, syntactic juxtaposition of verbs as in (12) is often used to indicate simultaneity of the events that they encode.

(12)   wáaqo'   'éetxew-c-e   ciklíin-'ipéecwi-s-e
        now   be sad-prog-sg.nom   go home-want-prog-sg.nom
        'Now I am sad wanting to go home.' (195)

It is this type of juxtaposition construction which he offers as a source from which these and other verb-based applicative markers could have developed (1991:195).

4.2.2.2. Yimas.

The Papuan language Yimas (Lower Sepik, Papua New Guinea), described by Foley 1991, has a number of applicative elements which have either a verbal or an adverbial origin. Like Nez Perce, Yimas has a benefactive applicative construction marked by a suffix grammaticalized from the verb 'to give', -ŋa:

(13) Yimas (Foley 1991:309)
yara   ya-kka-kra-ŋa-r-akn
tree V PL   V PL T-1 SG A-cut-app-PERF-3 SG D
'I cut trees for him.'

The prefix taŋkway- in some cases is adverbial in nature, meaning something like 'carefully', as in (14),

(14) Yimas (Foley 1991:339)
ya-n-taŋkway-wampaki-pra-k
V PL O-3SG A-VIS-throw-toward-IRR
'He threw those down carefully.' (watching their fall)

but it is a kind of directional applicative in other uses. See (15),

(15) na-n-taŋkway-wampaki-kia-k-nakn
V SG T-3SG A-VIS-throw-NIGHT-IRR-3SG D
'He threw it at him.' (looking at him) (314)

in which it is implied that the action of throwing is directed towards a participant which normally would not be included in the valence of the verb. Comparing the verb forms in (14) (which contains just two pronominal markers) and (15) (which contains three), it is clear that addition of the prefix in the latter case entails an increase in the valence of the verb. Note also that the applicative version of the prefix retains some of its adverbial semantics.

4.2.2.3. Haka Lai.

Of several applicative markers in Haka Lai, some clearly have a verbal origin. For instance, the affected object (benefactive/malefactive) applicative marker -piak, seen in 16,

(16) tsewmaŋ=niʔ   door-ʔaʔ   ʔa-ka-kal-piak
tsewmang=ERG   market-ALL/LOC   3SS-1SO-go-BEN
'Tsewmang went to the market for me.'

closely resembles the verb 'to give' seen in (17), reflecting a grammaticalization path already well established for that verb.

(17) tsewmaŋ=niʔ   ʔaar-saa   ʔa-ka-peek
      tsewmang=ERG   chicken-meat   3SS-1SO-give
      'Tsewmang gave me chicken meat.'

No other Haka Lai applicative constructions have this clear a source for their markers, but it we look at related languages we can identify related elements for some of them. For instance, the relinquitive applicative, seen in (18),

(18) tsewmaŋ=niʔ   door=ʔaʔ   ʔa-ka-kal-taak
      tsewmang=ERG   market=ALL/LOC   3SS-1SO-go-RELINQ
      'Tsewmang went to the market, leaving me behind.'

may be related to the Laizo (Falam Chin) verb root *tâan* 'to leave behind; divorce (a husband)' (Osburne 1975:133). The final consonant is problematic however. Likewise, the malefactive applicative marker, seen in (19),

(19) tsewmaŋ=niʔ   door=ʔaʔ   ʔa-ka-kal-hnoʔ
      tsewmang=ERG   market=ALL/LOC   3SS-1SO-go-MAL
      'Tsewmang went to the market on me.'

is possibly related to the Laizo verbal root *hnok~hnoʔ* 'be tangled' (Osburne 1975:136). Below I will also consider the origin of the Haka Lai instrumental applicative marker.

4.2.2.4. Chickasaw.

Haspelmath 1995 points out a discussion by Munro 1983 of the development of the instrumental applicative in Chickasaw. In Chickasaw, a same-subject converbial form of the verb *ishi* 'get, take' (seen in this use in 20) has undergone phonological reduction, attaching to the main verb, and the resulting structure is essentially that of an applicative construction (seen in 21).

(20) tali'   ish-li-t   isso-li-tok
      rock   take-1SG.ACT-CONV   hit-1SG.ACT-PAST
      'Taking a rock, I hit him.'

(21) tali'   isht-isso-li-tok
      rock   APPL.INSTR-hit-1SG.ACT-PAST
      'I hit him with a rock.'

This example is somewhat different from those seen above in that involves grammaticalization of a fully subordinate verb form, but the end result is the same.

4.3.   Direct development of discourse-functional applicatives.

In the cases examined by Craig and Hale, and also presumably in the Bantu case, it is clear that the development of applicative constructions is originally tied to the indication of a special discourse status for what would otherwise be marked as an oblique object.

Figure 4.3.   Direct development of discourse-functional applicatives.

```
verb,        _____►  discourse-functional
adposition                 applicative
```
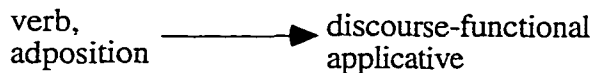
Recall the Rama text example in (1) showing how the development from postposition to cliticized preverb is intimately connected with indication of the object of the postposition as old, topicalized information. This is just the sort of pragmatic status for such objects that we expect to be associated with the use of a discourse-functional applicative construction.

In the Nadëb examples, similarly, there is no clearer reason for the development of the applicative constructions Weir describes other than to allow relativization on oblique objects. Assuming that relativization is related to topicalization in that it allows speakers to more carefully distinguish a particular referent, it is evident that the applicative construction in Nadëb also has a discourse function. Since the constructions which have arisen in most of the languages considered by Craig and Hale and in the language studied by Weir appear to be relatively recent developments, it is unlikely that these constructions ever lacked a clear discourse function.

In fact, as long as an applicative construction allows treatment of what is expectedly a morphosyntactically peripheral entity as a morposyntactically more central entity, it is does not seem possible that an applicative construction would have no potential discourse function. Thus, as long as an applicative allows either pronominalization of an otherwise obliquely instantiated (and non-pronominalizable) object, or allows speakers to topicalize, relativize on, or passivize such an object (the hallmarks of constructions involving

advancement to object), it will have some potential for attributing topic characteristics to such objects, often at the expense of indicating such a status for another object.

4.4. From transitivizing to discourse-functional applicative.

There are instances, however, in which we can see a development from lesser to greater relevance of discourse function in an applicative, as indicated in Figure 4.4.[1]

Figure 4.4. From transitivizing to discourse-functional applicative.

transitivizing
applicative

discourse-functional
applicative
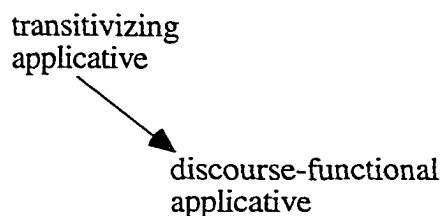
I have suggested in the preceding section that as long as what is dubbed an applicative construction involves some indication of a more central morphosyntactic status for such objects, it will have a potential discourse function.

As far as discourse function is concerned, an applicative construction may indicate a change in the morphosyntactic or discourse status of a relatively oblique entity, but it might not indicate a simultaneous change in the status (i.e. 'demotion') of a (semantically) less-peripheral object. For systems in which both objects display the morphosyntactic or discourse properties of core objects the applicative suffix has an essentially transitivizing role: it makes intransitives transitive, and it makes transitives supertransitive, as it were, having two more or less equivalent objects instead of only one.

We have seen in the previous section that it might be the case that an applicative construction from the very beginning has an object 'rearranging' function (Comrie 1985). Another possibility which I would claim is attested is the development of the 'rearranging' system out of the 'transitivizing' system. This type of development is a change which can be cast in terms of Dryer's 1986 typological distinction between 'direct object' and 'primary object' languages.

---

[1]   Portions of this section appeared in Peterson 1996b.

Dryer distinguishes two language types based on their treatment of the objects of bivalent and trivalent verbs. First, there are languages, such as French, in which the patient of a bivalent verb and the patient of a trivalent verb are treated in the same way, and the beneficiary/recipient of a trivalent verb is singled out for special treatment of some sort. Consider the French sentences in (22).

(22) a. Jean   a   jeté   le   livre
          John   has   thrown   the   book
          'John threw the book.'

      b. Jean   a   donné   le   livre   à   Marie
          John   has   given   the   book   to   Marie
          'John gave the book to Mary.'

Note that the patient, 'the book,' in both of these sentences is coded in the same way—as a bare noun phrase—and the recipient in (22b) is coded as a prepositional phrase. There is no alternative to sentence (22b) in French which would correspond to an English Dative-shift construction. This identical treatment of patients of both bivalent and trivalent verbs, and special treatment of the recipient for trivalent verbs (prepositional marking), is diagnostic of what Dryer calls a 'direct object' language, schematized in Figure 4.5.

Figure 4.5. Direct object language.

bivalent   [patient]
trivalent [patient] beneficiary / recipient
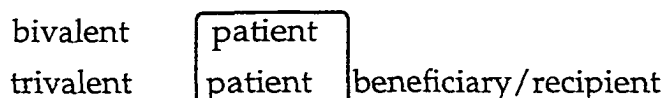
On the other hand, there are languages like Haka Lai, in which it is the patient of bivalent verbs and the beneficiary/recipient of trivalent verbs which pattern similarly. In the latter type of language the patient, and not the beneficiary/recipient, of trivalent verbs is given a special treatment. Consider the sentences in (23) from Haka Lai.

(23) a. vok   na-∅-hmuʔ
          pig   2SS-3SO-see
          'You saw the pig.'

      b. na-ka-hmuʔ
          2SS-1SO-see
          'You saw me.'

c.   vok   na-ka-peek
      pig   2SS-1SO-see
      'You gave me the pig.'

(23a) and (23b) illustrate the difference between third and first person object marking for

patients. In (23c), it should be clear that agreement in the case of a trivalent verb is not

with the third person patient argument, but rather, with the first person recipient argument.

Thus, in Haka Lai, the verb agrees with the patient of bivalent verbs, and the recipient of

trivalent verbs; those arguments pattern together in terms of verbal agreement. The patient

argument of the trivalent verb, on the contrary, is given a distinct treatment in that no verbal

agreement refers to it. Haka Lai has what Dryer refers to as a 'primary object' system.

Dryer gives the schematic characterization of primary object systems seen in Figure 4.6.

Figure 4.6. Primary object language

bivalent | patient
trivalent   patient | beneficiary/recipient
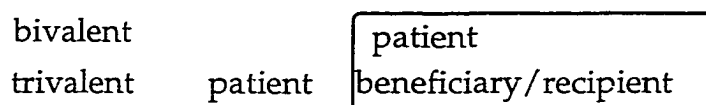
The relevance of this typological distinction, as noted, is that developments from

systems in which applicatives are strictly transitivizing to systems in which applicatives

serve more of an object-rearranging function may be neatly characterized as shifts from

less-primary object-like to more-primary object-like. Developments of this sort are well-

motivated in terms of the discourse function of applicative constructions.

Beneficiary/recipients are typically animate and as Dryer points out, more topical. (We saw

additional evidence for these claims in Chapter 3.) Therefore, it is not unreasonable that the

indicators of high topicality—in particular the discourse-related benefits that go along with

objecthood, such as verbal pronominal marking—be preferentially associated with animates,

and hence, with beneficiary/recipients. Once this association is accomplished, it is easy for

essentially transitivizing applicative morphology to be reinterpreted as a rearranging

applicative, by which it is indicated that peripheral arguments have higher topicality or have

the potential for being characterized as such by some more explicit topicalization construction.

4.4.1. Bantu.

The language family for which the most detailed information concerning applicative constructions is available is a family which displays the development from a less primary object-like system to a more primary object-like system. The discussion will have to be limited to beneficiary applicatives, though the account can presumably be extended to other cases in which the applicative object is prototypically animate. Again relying on a schematic characterization of the shift, this section will suggest that the distribution of object properties in Eastern Bantu benefactive applicative constructions is due to a development of a system like the one illustrated by Figure 4.7 to one like the system illustrated in Figure 4.8.

Figure 4.7.   Symmetrical languages.

| bivalent | patient |
| trivalent | patient   beneficiary/recipient |

Figure 4.8.   Asymmetrical languages.

| bivalent | | patient |
| trivalent | patient | beneficiary/recipient |

It should be noted that the system illustrated in Figure 4.8 is identical to the one seen in Figure 4.6 (i.e. it is a primary object system).

There are a number of properties which specialists in Bantu syntax use to characterize objects, but I will consider just two of these here. First, to illustrate the usual object properties with some simple bivalent verbs, it can be seen in (24)

```
(24)    Haya (Duranti and Byarushengo 1977:47)
        ebitooke      bi-ka-cumb-w              omukazi
        bananas       3p subj-tense-cook-pass   woman
        'The bananas were cooked by the woman.'
```

that the patient argument of a bivalent verb may appear as the subject of a passive verb.

Objects of bivalent verbs may also be represented by pronominal object marking on the verb, as in (25).

(25) ŋ-kaa-gi-gula
      1s subj-tense-3s obj-bought
      'I bought it.' (a guitar, from previous discourse) (47)

The ability to appear as the subject of a passive verb and to be represented by pronominal object marking on the verb are properties which Bantu objects typically display. It has long been noted in the synchronic syntactic literature that there is a split between Bantu languages in terms of how they treat the patient and beneficiary/recipient objects associated with trivalent verbs (which may either be basically trivalent, or trivalent as a result of applicativization).

First, there are so-called 'symmetrical' languages, in which both objects of trivalent verbs are treated in the same way in which the patient objects of bivalent verbs are. Such languages include Kinyarwanda (Gary and Keenan 1977, Kimenyi 1980), Haya (Duranti and Byarushengo 1977), Mashi (Gary 1977), Luyia (Gary 1977), Kimeru (Hodges 1977), and Chaga (Bresnan and Moshi 1990), and have the following treatment of objects, exemplified by Kinyarwanda.

In Kinyarwanda, either object of a basic trivalent verb or a verb in the recipient applicative construction may appear as the subject of a passivized version of that verb. (26a) shows passivization of the patient and (26b) shows passivization of the recipient of an applicative verb:

(26) Kinyarwanda (Gary and Keenan 1977:93)
      a. ibaruwa   y-oherer-ej-w-e   maria
          letter   it-send (app)-asp-pass-asp   Mary
          'The letter was sent to Mary.'

      b. maria   y-oherer-ej-w-e   ibaruwa
          Mary   she-send (app)-asp-pass-asp   letter
          'Mary was sent a letter.' (93)

With respect to this object property, then, Kinyarwanda thus has a 'symmetrical' treatment of the objects in such constructions. Next, as seen in (27), either object in such constructions may be represented by pronominal object marking on the verb.

(27) a.   yohani   y-a-mw-oherer-eje   ibaruwa
          John   he-past-her-send (app)-asp   letter
          'John sent her the letter.' (92)

      b.   yohani   y-a-y-oherer-eje   maria
          John   he-past-it-send (app)-asp   Mary
          'John sent it to Mary.' (92)

Thus, for pronominal object marking, Kinyarwanda has a symmetrical treatment of the objects in beneficiary applicative constructions. Other constructions in Kinyarwanda, such as relativization, also demonstrate a highly similar patterning for beneficiary/recipients and patients.

Other symmetrical languages pattern in the same way with respect to most of these properties, as indicated in Table 1.

Table 4.1. Object properties in symmetrical languages.
(B=beneficiary/recipient object; P=patient object)

Language:	Chaga		Mashi		Luyia		Kimeru		Haya	
Object type:	B	P	B	P	B	P	B	P	B	P
passivization	+	+	+	+	+	+	+	+	+	+
object marker	+	+	+	+	+	+	+	+	+	+

There is another type of language, called an 'asymmetrical' language, in which the objects of basic trivalent verbs and the trivalent verbs occurring in beneficiary applicative constructions are not morphosyntactically equivalent. In this sort of language, which is essentially Dryer's primary object language, the beneficiary/recipient object is treated in the same manner as the patient of a bivalent verb, while the patient of a trivalent verb is not treated in this fashion. Languages which fall into this category include Chichewa, Chimwi:ni (Kisseberth and Abasheikh 1977), Ndendeule (Ngonyani 1995), and Swahili (Baker 1990). Consider the following from Chichewa. First, while the beneficiary/recipient argument of a trivalent beneficiary applicative verb may appear as the

subject of a passive version of a verb (28a), the patient argument of such verbs may not

(28b):

(28) Chichewa (Alsina and Mchombo 1993:23)
    a.   atsikana   a-na-gulir-idwa   mphatso
        2.girls   2.subj-past-buy for-pass 9.gift
        'The girls were bought a gift.'

    b.   *mphatso   i-na-gulir-idwa   atsikana
        9.gift   9.subj-past-buy for-pass 2.girls (23)

Next, only the beneficiary/recipient object may be represented by pronominal object marking on the verb (29a); the patient may not be represented by means of such marking (29b):

(29) a.   chitsiru   chi-na-wa-gulira   mphatso (atsikana)
        7.fool   7.subj-past-2.obj-buy for 9.gift   2.girls
        'The fool bought a gift for them (the girls).' (22)

    b.   *chitsiru   chi-na-i-gulira   atsikana (mphatso)
        7.fool   7.subj-past-9.obj-buy for   2.girls 9.gift (22)

In other constructions, like the reciprocal construction, seen in (30), only a beneficiary may be reciprocal with the subject of the sentence:

(30)   anyani   a-na-gúl-ír-an-a   uchema
        2.baboons   2SM-PST-buy-APPL-RECIP-FV   14.palm wine
        'The baboons bought one another some palm wine.'

Table 4.2 shows how the objects in some other asymmetrical languages pattern with respect to these properties.

Table 4.2. Object properties in asymmetrical languages.
(B=beneficiary/recipient object; P=patient object)

Language:	Ndendeule		Chimwi:ni	
Object type:	B	P	B	P
passivization	+	-	+	-
object marker	+	-	+	-

A third type of language, which is usually ignored in synchronic discussions of the treatment of objects in Bantu, is a language type which like the symmetrical languages treats both objects of trivalent verbs in the same manner, but only if animacy considerations do not dictate that the objects be given an asymmetrical treatment. In one type of language,

for instance, Kikuyu (Masunaga 1983) or Gitonga (Mchombo and Firmino 1995), there is a symmetrical treatment of objects if they differ in terms of animacy. On the other hand, if the objects are equal in animacy, they receive an asymmetrical treatment. In the following examples, where there is an animacy differential between the objects, either the beneficiary/recipient or the patient may be on the one hand the subject of a passive verb (31a-b), and on the other (32a-b), represented by pronominal object marking:

(31)   Gitonga (Mchombo and Firmino 1995:18)

a. yimbwa   yi-na-tul-el-w-a   lidimba   khu   Nidzi
   9.dog   9SM-FUT-open-APP-PASS-FV   5.door   by   Nidzi
   'The dog will be opened the door (for) by Nidzi.'

b. lidimba   li-na-tul-el-w-a   yimbwa   khu   Nidzi
   5.door   5SM-FUT-open-APP-PASS-FV   9.dog   by   Nidzi
   'The door will be opened for the dog by Nidzi.'

(32)   a. uye   a-li-tul-el-e   yimbwa
       IIISG/PP   IIISGSM-5OM-open-APP-FV   9.dog
       'He opened it for the dog.' (20)

b. uye   a-na-yi-tul-el-a   lidimba
      IIISG/PP   IIISGSM-FUT-9.OM-open-APP-FV   5.door
      'He will open the door for it.' (19)

However, if there is not an animacy differential between the objects, the object which displays object properties will automatically be interpreted as a beneficiary/recipient. In (33), for instance, since 'woman' is the subject of a passive verb, it is displaying object properties, and may only be interpreted as the beneficiary/recipient of the action due to the equal animacy of the other (object) argument:

(33)   nyamayi   a-na-vbet-el-w-a   gyanana   gyaye
     1.woman   1SM-FUT-seek-APP-PASS-FV   7.child   7.her (poss)
     'The woman's child will be sought for the woman.' (17)
     * 'The woman will be sought for the child.'

Similarly, in (34), the object marking is obligatorily interpreted as referring to the beneficiary/recipient:

(34)   uye   a-na-mu-vbet-el-a   gyanana   gyaye
     IIISG/PP   IIISGSM-FUT-1OM-seek-APP-FV   7.child   7.her (poss)
     'He will seek her child for her.' (19)
     * 'He will seek her for the child.'

Languages like Gitonga present a transitional stage in which the function of the applicative in a restricted context (that in which there is no animacy difference between the two objects to aid in disambiguation of their thematic roles) is shifting from that of a simple transitivizing construction to one in which it forces a more core treatment of a particular argument, the beneficiary/recipient.

There are other types of Bantu languages in which animate arguments, and hence beneficiary/recipients, in the prototypical case, are associated preferentially with the object properties under discussion. For example, definite animate arguments in Kirimi must be accompanied by an agreement marker on the verb, as demonstrated by the sentence in (35).

(35)   Kirimi (Hualde 1989a:180)
       n-a-va-et-e-aa   anca   mUhUmba
       1s subj-P1-3p obj-bring-appl-tense   girls   boy
       'I brought a boy for the girls.'

In the usual case, animates have a higher topicality and hence are more likely to be definite. They are also more likely to occupy the beneficiary/recipient role. These factors work together in Kirimi to ensure that object properties will be associated with the beneficiary/recipient, and not with the patient.

So, the three types of Bantu languages make it fairly clear that the applicative in Bantu originally had a strictly transitivizing function: it made intransitive verbs transitive and transitive verbs 'supertransitive', in that they had two direct objects. Languages like Gitonga, Sesotho, and Kirimi represent an intermediate stage where the number of objects exhibiting object properties is reduced by means of animacy restrictions to just one–the beneficiary/recipient argument. In asymmetrical languages like Chichewa this drift from the original use of the applicative has been taken a step further, and due to a reinterpretation of animacy restrictions as restrictions on the thematic role of arguments which may display object properties, the transition from an essentially transitivizing applicative to a rearranging applicative has been brought to completion.

Note that it might appear possible to explain the existence of these different types in terms of a development in the opposite direction (i.e. the asymmetrical languages represent

the first stage of the development, they develop symmetrical treatment of objects except under certain animacy conditions, and relax those animacy conditions to yield fully symmetrical languages). However, such a directionality does not have the discourse-functional motivation that the directionality proposed here has. There seems to be no reason to introduce a special treatment of animate objects if animate arguments are already treated preferentially by virtue of their inclusion in the set of beneficiary/recipient objects (as would have to be the case with the alternative directionality), whereas there does seem to be reason to introduce animacy restrictions if animate arguments are accorded no preferential status to begin with.[2]

A more substantive argument for this direction of development may be seen in the geographical distribution of object agreement as opposed to pronominal object marking. For instance, consider the object marking seen in (36) for Chimwi:ni.

(36)   wake   wa-mw-osheze   mwa:na
        women   sp-op-washed   child
        'The women washed the child.' (Kisseberth and Abasheikh 1977:182)

According to Kisseberth and Abasheikh (1977:182), the object marker is required with animate objects; thus, this object marking is true agreement rather than simply an anaphoric pronominal element. Morolong and Hyman 1977 further observe that languages with object agreement are typically asymmetrical (206). There do not appear to be cases of object agreement in symmetrical languages, however. It would be surprising then, assuming the opposite direction of development, if there were no symmetrical languages in which there was vestigial obligatory agreement with an animate argument. This is an expected gap, however, if the line of development I have proposed here is correct.

---

[2]   It is obviously not the case, however, that all morphosyntactic change involving object relations gives beneficiary/recipients a more monotransitive object-like status. Dative shift in English, for instance, is a case in which the alternation arises from a construction which already did give a more monotransitive object-like treatment to its beneficiary/recipient argument. The alternative in which the beneficiary/recipient is treated as an oblique (e.g. *Bob gave the book to Jim.*) is a historically secondary development (Visser 1963:624). Thus this argument is not airtight.

4.4.2. Sahaptian.

A development somewhat different from that seen in the Bantu languages is found in Sahaptin (described briefly by Rude 1992). In Sahaptin, what was previously an allative directional -na/-nan apparently evolved into a dative suffix. Subsequent to this development, the dative object associated with trivalent verbs has supplanted the direct object in terms of control of object properties (it controls verb agreement, for instance). Now the dative suffix is in the process of being extended to the single object of monotransitive verbs as a general indicator of primary object, in Dryer's terms. Thus, developments of primary object systems may come from either a deprivation of object properties from the patient object of ditransitives (as I propose was the case in Bantu) or via the extension of a more dative treatment to the patient object of monotransitives.

4.5. Developments beyond the discourse-functional applicative.

An applicative marker does not always continue to be the indicator of a distinct applicative construction, and what applicatives tend to turn into historically is the subject of this section. What we see is that, presumably because one of the things they may do is allow peripheral objects to occur in relativization and topicalization constructions, markers of applicative constructions themselves appear to be reinterpretable as markers of such constructions. However, I will also suggest that due to the nature of grammaticalization, it is likely that instances of what has been claimed to be relativizer/nominalizer > applicative marker or applicative marker > relativizer/nominalizer development are potentially just instances of independent grammaticalization of the same morphology as markers of two discrete constructions.

Figure 4.9. Developments beyond the discourse-functional applicative.[3]

```
                              ▼ topicalizer
                          ╱
discourse-functional ◄──────► subordinator ──────► nominalizer
applicative
```

---
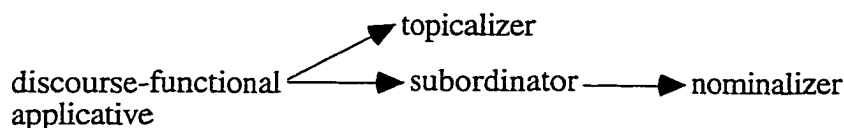
[3]   Portions of this section are based on Peterson 1997.

4.5.1. Bantu.

There are some scattered cases of applicatives in Bantu which have developed into something besides their widely attested applicative use.

First, Trithart's 1976 description of valence-affecting constructions in one dialect of Chichewa includes an instrumental applicative which 'occurs only in conjunction with an advancement of Instrumental to Subject' (1976:56-57). For example, while the expectedly acceptable instrumental applicative constructions[4] in (37a-b) are unacceptable,

(37)   Chichewa (Trithart 1976:58)
        a.   *Joni   a-ma-lemb-ets-a   peni
                John   he-habit-write-inst app-indic   pen
                'John writes with a pen.'

        b.   *Joni   a-ma-lemb-ets-a   peni   dzina   lake
                John   he-habit-write-inst app-indic   pen   name   his
                'John wrote his name with a pen.'

the following passivized instrumental applicative constructions are acceptable:

(38)   a.   khasu   li-ma-lim-its-idw-a   ndi   Joni
                hoe   it-habit-farm-inst app-pass-indic   by   John
                'The hoe is farmed with by John.' (57)

        b.   khasu   li-ma-lim-its-idw-a   chi-manga   ndi   Joni
                hoe   it-habit-farm-inst app-pass-indic   corn   by   John
                'The hoe is farmed corn with by John.' (58)

Thus, in this dialect of Chichewa, it appears that the instrumental applicative marker has become reanalyzed as a part of a kind of complex instrument topicalizer by means of which instruments are made into subjects.

An example of a similar development in Bantu is perhaps present in Mashi. Gary telegraphically notes that 'Instrument OOs [oblique objects] cannot be promoted to DO [direct object]...though they can be promoted directly to Su [subject]' (1977:90). She cites the following pieces of evidence (untranslated, so the translations are an educated guess at what the sentences mean based on the interlinear glosses):

---

4   Readers familiar with the reconstructions for Proto-Bantu may object that the morphology which is here labeled an instrumental applicative is that which is reconstructed as the marker of a causative construction. If a causative construction has an inanimate as its causee, however, there is little to distinguish it from an instrumental applicative construction. Such a use of the Proto-Bantu causative morphology is widespread in Bantu.

(41) éé   mi-sóóm   doo
      father by means of-asp.shoot with blowgun   the one
      'the one with which my father shoots' (304)

This meaning is also maintained in cleft constructions, which involve a kind of concord between a postpositional phrase and the applicative verb. In (42), the structure is the following: the first two words are the complement and the subject is the bracketed headless relative clause formed by the last two words:

(42) sxóów   me   [éé   mi-sóóm]
      blowgun   by means of   [father rel/by means of-asp.shoot with blowgun]
      'It's with a blowgun that my father shoots.' (304)

A further development is seen with the prefix *ba-* (from postpositional *bʉ*, glossed 'ablative'). This prefix is only found in relative clauses like the one in (43),

(43) éé   ba-gʉ́   doo
      father ablative-be in hammock   the one
      'the one in which my father is' (305)

or like the headless one in the cleft construction in (44).

(44) tób   bʉ   [éé   ba-gʉ́]
      house   ablative   [father rel/ablative-be in hammock]
      'It's in the house that my father is.' (306)

According to Weir, a simple relation-changing use of *ba-* is rare, whereas it is frequently used in this subordinating function. The prefix *mi-*, on the other hand, has both uses attested with about equal frequency.

Weir notes that one of the primary functions of Nadëb applicatives is to 'change the grammatical relations within the sentence, in order to allow the relativization of the advanced constituent' (1986:308), which implies that without these applicative constructions relativization on these arguments would not be possible. It is clear, however, that there has been a reanalysis of the function of the prefixes in the latter two cases, such that the applicative morphology is no longer just that. Instead, it is the marker of the relative clause, one of the constructions which applicativization would have made it possible for peripheral arguments to appear in.

4.5.3. Kalkatungu.

For Kalkatungu, Blake 1977 notes, an instrumental applicative occurs almost exclusively in dependent purposive clauses in which the instrument is subject to zero-anaphora under coreference with a participant in the main clause, as seen in (45).

(45) Kalkatungu (Blake 1977:50)
　　　ŋa-ṭu　ɲini　kunk　aɲa　ṭuku-u　　　a-ni　　　ḷai-manṭi
　　　I-erg　you　stick　gave　dog-dat　　comp-you　hit-inst app
　　　'I gave you a stick to hit the dog with.'

It can be inferred that the instrumental applicative seen in (45) once had a more extensive main clause use, like instrumental applicatives seen elsewhere, but due to the frequency of its use in the formation of purposive clauses sharing an argument with the main clause (which is highly similar to a relative clause), it is on the way to reinterpretation as solely marking the purposive clause construction.

4.5.4. Mayan.

A family tree for Mayan, including the languages to be dicussed in this section, is given in Figure 4.10.

Figure 4.10.　Mayan (based on Dayley 1983).
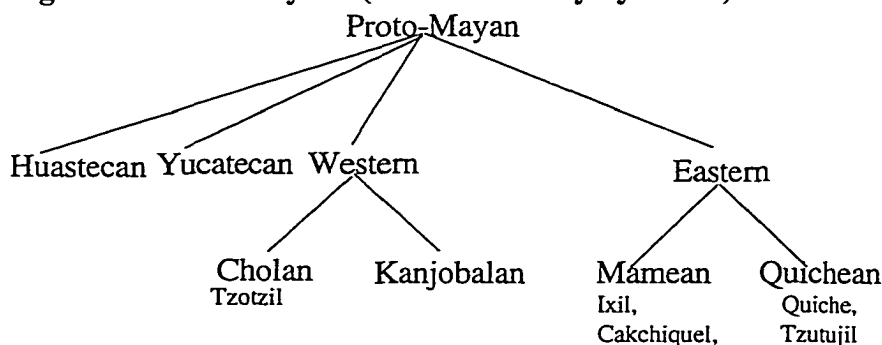
Some examples of a recipient applicative construction in Tzotzil, which is a Western Mayan language, have already been given in Chapter 2, but in this section I will consider a different kind of applicative marked with cognate morphology in the Eastern branch of the family. In the part of Mayan to be discussed, it is likely that the recipient applicative use of this morphology found in Western Mayan languages like Tzotzil previously existed. Dayley notes that in Tzutujil, for instance, non-productive uses of this morphology have

semantics 'reminiscent of the dative or referential voice found in Western Mayan languages' (1985:124). The productive use of the applicative morphology here, however, is not to mark recipient applicative constructions, but to mark instrumental applicative constructions. It is not the apparent development from a recipient applicative to the instrumental applicatives found in Eastern Mayan which is of interest, however, but rather the development of the construction within the portion of the family which has these instrumental applicatives.

The characteristics of these instrumental applicative constructions are best described in Craig 1978 and Norman 1978. I will lay out the facts here in some detail so that the nature of the construction's evolution will be clear. There are two types of applicative construction, depending on the language considered. In the first type, the applicative is a rearranging type which deprives the base object of object properties. In a language like Quiché, for example, the patient of a bivalent verb normally appears in the absolutive, it controls verbal agreement, it may be made the subject of a passivized verb, and it may be extracted in various constructions (preposed focus, questions, and relative clauses). Example (46) demonstrates the usual absolutive case for such patients,

```
(46    Quiché (Norman 1978:459)
       x-Ø-u-rami-j              lee    chee7  lee    achih
       asp-3sA-3sE-cut-suffix    the    tree   the    man
       'The man cut the tree.'
```

while example (47) demonstrates that absolutive verbal agreement is controlled by the patient object.

```
(47)   x-at-in-sok-oh
       asp-2sA-1sE-wound-phrase final suffix
       'I wounded you.' (460)
```

Next, (48) shows the passivizability of patient objects.

```
(48)   x-Ø-rami-x            lee    chee7  r-umal    lee    achih
       asp-3sA-cut-passive   the    tree   3sE-by    the    man
       'The tree was cut by the man.' (460)
```

Preposing the patient object to the verb results in direct object focus, as in (49),

(49) chee7 x-∅-u-rami-j   lee   achih
      tree   asp-3sA-3sE-cut-suffix   the   man
      'The man cut *a tree*.' (460)

patient objects may be questioned, as in (50),

(50) jas   x-∅-u-rami-j   lee   achih?
      what   asp-3sA-3sE-cut-suffix   the   man
      'What did the man cut?' (460)

and relativization on patient objects is accomplished by means of a deletion strategy as

shown in (51).

(51) x-∅-w-il   lee   chee7 [x-∅-u-rami-j   lee   achih]
      asp-3sA-1sE-see   the   tree   [asp-3sA-3sE-cut-suffix   the   man]
      'I saw the tree that the man cut.' (460)

The patient object of the relative clause in (51) is deleted, the only indication of it being a

verbal agreement marker, which in (51) is -∅-. Instruments do not pattern as direct objects

in any of these respects, and usually are marked in oblique phrases consisting of possessed

relational nouns.

In the instrumental applicative construction, patient objects do not have the above

properties; instruments do:

(52) a. Absolutive marking and control of object marking
      ch'iich'   x-∅-in-sok-b'e-j   aw-eech
      machete   asp-3sA-1sE-wound-inst app-suffix   2sE-genitive
      'I used a machete to wound you.' (462)

      b. Assumption of subject position in passive
      ch'iich'   x-∅-sok-b'e-x   aw-eech
      machete   asp-3sA-wound-inst app-pass   2sE-gen
      'A machete was used to wound you.' (462)

      c. Focus
      ch'iich'   x-∅-u-rami-b'e-j   lee   achih
      machete   asp-3sA-3sE-cut-inst app-suffix   the   man
      'The man used a *machete* to cut the tree.' (462)

      d. Question
      jas   x-∅-u-rami-b'e-j   lee achih   r-ee   lee   chee7?
      what   asp-3sA-3sE-cut-inst app-suffix the man   3sE-gen   the   tree
      'What did the man use to cut the tree?' (463)

      e. Relativization
      x-∅-inw-elaq'a-j   lee   ch'iich'   [x-∅-u-rami-b'e-j
      asp-3sA-1sE-steal-suffix   the   machete   asp-3sA-3sE-cut-inst app-suffix

lee   achih   r-ee   lee   chee7]
the   man   3sE-gen   the   tree
'I stole the machete that the man used to cut the tree.' (463)

Now, although it is clear that it is the instrument which exhibits direct object properties in these cases, there is something else which is noteworthy about all of these examples involving the instrumental applicative. It turns out that instruments in the instrumental applicative construction are obligatorily extracted–focused, questioned, or relativized on (note that the instrument is always preposed to the clause it is licensed in). In addition, in this dialect of Quiché, use of the instrumental applicative morphology is the only means by which instruments may be questioned or relativized on.

Mamean languages, like Ixil, similarly associate the instrumental applicative suffix *-b'e* with extraction of an instrument (i.e. it must be used in order for an instrument to occur in focus and question constructions, and for it to be relativized on). Use of this suffix does not, however, involve the reevaluation of grammatical functions vis-à-vis the base object that it does in Quichean languages. The different status of the construction in these languages is shown by the following sentences in which the instrument is in preverbal focus position, as in Quiché, but in both cases the patient is instantiated by a bare noun rather than by an oblique phrase, and in the second case, object agreement is with the patient and not the instrument:

(53)   Ixil (Norman 1978:464)
       machit   n-in-tzok'-b'e-∅   tze7
       machete   asp-1sE-cut-instr app-3sA   tree
       'I cut the tree with a *machete*.'

(54)   Cakchiquel (Norman 1978:465)
       r-ik'in   jun   machät   x-i-ru-sok-b'e-j   ri   achin
       3sE-with   a   machete asp-1sA-3sE-wound-instr-suffix the man
       'The man wounded me with a machete.'

The body of data available to determine the historical developments here is still much smaller than it should be, and it is likely that further studies of Eastern Mayan 'instrumental voice', as the applicative construction is usually called, will lead to revisions

in the accounts which have been proposed, but for the moment the only historical account of the facts is that of Norman 1978.

Norman's account is that the construction existed in Proto-Eastern Mayan, and it had characteristics more like the construction attested in Quiché. In the languages in which the more prototypical characteristics of the applicative construction have been lost, Norman's claim is that because there are many instances in which there is no unambiguous evidence that use of the applicative construction results in the loss of the patient's object properties, the instrumental applicative construction has been reanalyzed as not involving this more clearly applicative characteristic. Norman cites two factors which most likely facilitated this reanalysis. Instruments are almost invariably third person, and third person patient obliques in applicative constructions are not coded by means of relational nouns. Thus, in such cases, both the instrument and the patient in an applicative construction are instantiated as bare noun phrases, and either could be construed as the controller of verb agreement. From such ambiguous cases it is only a small step to a situation in which the former applicative construction marker instead marks the special pragmatic status of the instrument without altering the grammatical function status of the patient.

4.5.5. Proto-Austronesian morphosyntax.

4.5.5.1. Standard accounts.

In the preceding sections I have established that there is a tendency for markers of applicative constructions, especially those marking instrumental applicative constructions, to develop into markers of constructions emphasizing the high relative topicality of semantically peripheral objects. In particular, there is a marked tendency for applicative markers to be reanalyzed as markers of relativization on oblique objects.

What I would like to suggest in this section is that this finding may potentially lead us to a historically more accurate explanation than has so far been proposed for the development of what must have been applicative constructions in Proto-Austronesian. Figure 4.11 gives the higher order subgroupings for the languages of that family. The

internal subgrouping of the Western-Malayo-Polynesian languages is poorly understood, and it is likely that this branch may actually represent several coordinate branches of the Extra-Formosan branch.

Figure 4.11. Austronesian (Pawley and Ross 1993).

Proto-Austronesian

Formosan   Extra-Formosan

Western
Malayo-Polynesian   Central/Eastern
(Including Philippine   Malayo-Polynesian
and Western
Indonesian)   Central M-P   Eastern M-P

Lesser Sundas, S. Halmahera,   Oceanic
Maluku   W. New Guinea
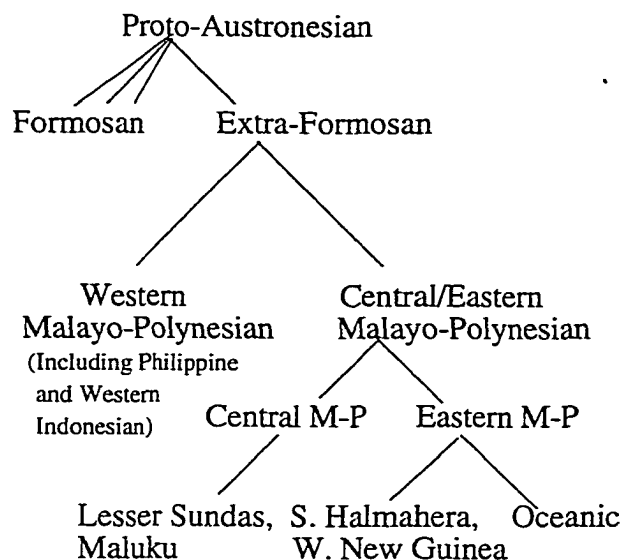
In terms of the morphology reflected in the modern languages which will be of interest to us, following Pawley and Reid 1980, it is convenient to divide the languages into two groups: a Western type and an Eastern type.

In the Western type (including the Formosan languages, and to a greater or lesser degree, the Western Malayo-Polynesian languages), a complex system of verbal morphology indicates the semantic role of one of the arguments appearing in the clause. This argument (called the 'topic', though not directly corresponding to non-Austronesianist uses of the term) has special morphosyntactic and discourse characteristics. In morphosyntactic terms, it appears with a special preposition and is uniquely accessible to certain constructions, such as relativization. In discourse terms, it is usually definite.

This type of system has been widely described for numerous Philippine languages, so I will simply present some Tagalog examples which demonstrate the relevant morphology. In (55), for instance, the verb contains an infix <*um*>, which indicates that the agent or actor of the clause is the topic. In the same sentence, it is the actor which

occurs with the preposition *ang*, which is reserved for topics. The actor is also definite. Finally, the only argument accessible to relativization in such a clause is the actor.

(55) Actor topic (Foley 1976:106):

p<-um->asok		sa	bahay	ang	lalake
enter-ACTOR TOPIC-enter		PREP	house	TOPIC	man

'The man entered the house.'

In (56), on the other hand, the verb instead occurs with a suffix *-in*, which indicates that the topic is a patient or undergoer, and the properties discussed above are reserved for the undergoer argument.

(56) Undergoer topic (Schachter 1976:495):

aalis-in		ng	babae
WILL.take.out-UNDERGOER TOPIC		PREP	woman

ang	bigas	sa	sako	para	sa	bata
TOPIC	rice	PREP	sack	BEN	PREP	child

'A/The woman will take the rice out of a/the sack for a/the child.'

Similarly, in (57), the verb has a suffix *-an*, and the topic properties are associated with the location (in this case, allative) argument,

(57) Location topic (Foley 1976:110):

d-in-alh-an		ng	lalake	ng	isda	ang	bata
bring-PERF-bring-LOCATION TOPIC		PREP	man	PREP	fish	TOPIC	child

'The man brought some fish to the child.'

and in (58), the verb has a prefix *i-*, which indicates that these topic properties are held by an instrument argument.

(58) Instrument topic (112):

i-p<-in->utol		ng	lalake
INSTRUMENT TOPIC-cut-PERF-cut		PREP	man

ng	isda	ang	kutsilyo
PREP	fish	TOPIC	knife

'The man cut some fish with the knife.'

In (59), it is also noteworthy that if the verb bears the infix *<in>*, which signals perfective aspect, the default interpretation is that the topic is the patient or undergoer. To indicate that any other argument is the topic for a perfective verb requires the use of one of the affixes in either (55), (57), or (58) in conjunction with the infix *<in>*.

(59) Perfective aspect (Undergoer topic):
 b<u><-in-></u>asag   ng   bata   <u>ang</u>   laruan ng   tungkod
 break<u>-PERF-</u>break   PREP child <u>TOPIC</u> toy   PREP   cane
 'The child broke <u>the toy</u> with the cane.' (108)

Since the morphology in (55)-(59) is found in multiple Formosan branches and also

widely in Western Malayo-Polynesian, it is generally reconstructed to Proto-Austronesian.

In the Central and South Halmahera/West New Guinea branches, some of this morphology

is attested, but the notable reflexes elsewhere in the family are in Oceanic nominalizations

(Pawley and Reid 1980:110). Figure 4.12 shows the basic subgrouping of Oceanic to

facilitate assessment of how the reflexes are distributed in this portion of the family.

Figure 4.12.   Oceanic (Ross 1995b).

```
                    Oceanic
                   /      \
                  /        \
          Western      Central/Eastern
          Tolai,            /   \
          Roviana          /     \
                          /       \
                         /         \
          South-East          Remote
          Solomonic           Oceanic
          Sa'a,               Mota, Baki,
          Inakona             Boumaa Fijian
```
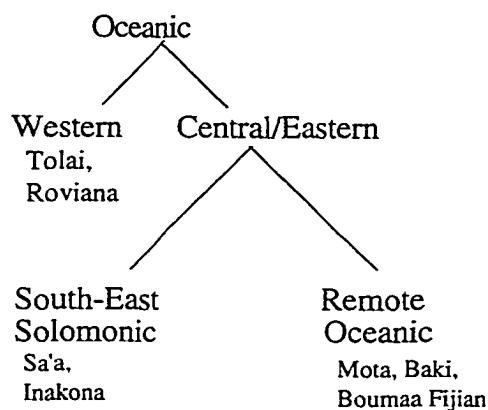
The forms in (60) and (61) show reflexes of the pefective marker.

(60) Tolai (Western Oceanic) reflexes of perfective *<i><in></i> (Pawley and Reid 1980:124):
      mate 'to die'   m-<u>in</u>-at 'corpse'
      mait 'to be sick'   m-<u>in</u>-ait 'sickness'
      ka 'to scrape'   k-<u>in</u>-a 'shellfish used for scraping'

(61) Roviana (Western Oceanic) reflexes of perfective *<i><in></i> (Ray 1926:544-5):
      ene 'to walk'   <u>in</u>-ene 'journey'
      avoso 'to hear'   <u>in</u>-avoso 'news, hearing'
      tavete 'to work'   t-<u>in</u>-avete 'work'
      zama 'to say'   z-<u>in</u>-ama 'saying, word'

(62) shows reflexes of the instrument morphology.

(62) Central/Eastern Oceanic reflexes of instrument *<i>Si-</i>:

      Sa'a (South-East Solomonic) (Ivens 1918:143).

      kän 'to hook'   <u>i</u>-ken 'a hook for gathering fruit'
      dänu 'to bale'   <u>i</u>-denu 'a baler'

Mota (Remote Oceanic, Vanuatu) reflexes of instrument *Si- (Codrington 1885:262).

sar 'to pierce'	i-sar 'spear'
got 'to cut'	i-got 'a cutter'

Boumaa Fijian (Remote Oceanic, Fiji) reflexes of instrument *Si- (Dixon 1988:192).

sele 'cut, slice'	i-sele 'knife'
cula 'pierce'	i-cula 'needle'
'aba 'climb steep surface'	i-'aba'aba 'ladder'

Finally, (63) shows reflexes for the location morphology.

(63) Roviana (Western Oceanic) reflexes of location *-an (Ray 1926:545):

habotu 'to sit'	habotuhabotu-ana 'sitting places'
sigoto 'to anchor'	sigotu-ana 'anchorage'
huvehuve 'to bathe'	huvehuve-ana 'bathing place'

The Central/Eastern Oceanic reflexes for the location morphology are not as obviously related in terms of semantics as the Western Oceanic reflexes are, as seen in (64). Here, the morphology has evidently been reinterpreted as an abstract nominalizer.

(64) Central/Eastern Oceanic reflexes of location *-an:

Baki (Remote Oceanic, Vanuatu) (Ray 1926:246).

ili 'say'	ili-an 'speech'
monea 'believe'	monea-n 'faith'
maro 'die'	na mar-ian 'death'

Inakona (South-East Solomonic) (Capell 1930:114).

dodo 'to know'	dodon-ana 'knowledge'
dou 'good'	dou-ana 'goodness'
vaulu 'new'	vaulu-na 'newness'

Both Wolff 1973 and Ross 1995a reconstruct the proto-paradigm in Figure 4.13 for Proto-Austronesian.

Figure 4.13. Proto-Austronesian verb morphology (Wolff 1973, Ross 1995a).

Indicative	Actor voice	Undergoer voice	Location voice
Neutral aspect	*<um>	*-ən	*-an
Perfective aspect	*<um-in>	*<in>	*<in> -an

Non-Indicative	Actor voice	Undergoer voice	Location voice
Atemporal	*∅	*-u	*-i
Projective	*<um> -a	*-a-u	*-a-i

The morphology in the indicative portion of the paradigm should by now be familiar. The non-indicative is apparently the remains of a previous system which the reconstructed indicative has replaced. The evidence for the non-indicative is now found mostly in imperatives and some subordinate clause forms.

In addition, a third 'durative' aspect in the indicative, involving reduplication of the neutral aspect form, is posited, but I have omitted it here for clarity of exposition. It may be noted that the instrument voice morphology is missing from this paradigm, an issue which I will return to below.

The standard account of the indicative portion of this system (Ross 1995a, following Starosta, Pawley, and Reid 1982), is that the basic Pre-Proto-Austronesian use of this morphology was nominalizing, and perfective, undergoer, location, and in some cases, instrumental nominalizations were reanalyzed as finite forms as a 'diathesis strategy' (Ross 1995a:758). In other words, the usual claim is that the Pre-Proto-language took these three or four nominalizations and made them into finite forms in order to make voice distinctions.

Nominalizations are quite frequently reanalyzed as main clause forms. For instance, Matisoff 1972 discusses a number of cases (including Sino-Tibetan and Japanese) in which what are typically multi-purpose nominalizers or complementizers are reanalyzed as markers of a neutral main clause form. However, it is not clear how often nominalizations like instruments and locations become main clause forms. I know of no clear instances of such a development.

4.5.5.2 Alternative accounts for Austronesian morphology.

4.5.5.2.1. Applicative > nominalizer.

One alternative which I will propose here is that the location and instrument topic morphology in Proto-Austronesian did not arise from reanalysis of nominalizations as finite forms. Rather, these markers, which are essentially applicative markers, arose via normal applicative grammaticalization routes, and their development throughout the family simply reflects a common cross-linguistic evolutionary trend for applicative constructions. The location topic morphology probably came from a preposition, given its postverbal position in a verb-initial language. The instrument topic morphology probably came from an auxiliary; a good candidate is the reconstructed verbalizing element *Si-, which according to Ross 1995a meant something like 'have, possess, wear N' (758).

One of the uses for this morphology in languages which still have it is for forming relative clauses on peripheral objects (Schachter 1976:500). So, in (65), which involves relativization on a location, we see that the verb in the relative clause (the second line of the example) occurs in the location focus (i.e. locative applicative) form.

(65)   Relativization on location:
iyon   ang   sakong
that   TOPIC   sack.LINKER

[aalisan   ko   ng   bigas]
CONT.take.out.LOCATION TOPIC   I:ACTOR   PREP rice
'That's the sack that I'll take some rice out of' (Schachter 1990:948)

It is not uncommon for this type of applicative morphology to become restricted to subordinate clauses, especially relative clauses, as was shown for Nadëb, Kalkatungu, and Mayan above. In a proto-language ancestral to languages which have the focus morphology only in nominalizations (e.g. at the Proto-Oceanic node), then, I propose that the morphology was first restricted to relative clauses, and then it was reanalyzed as strictly nominalizing. In (66) and (67) I show how this type of reanalysis could have occurred using some modern forms.

(66)   Roviana (Western Oceanic) reflexes of *-an (Ray 1926:545):
        habotu 'to sit'   habotuhabotu-ana 'where one sits'>'sitting place(s)'
        sigoto 'to anchor'   sigotu-ana 'where one anchors'>'anchorage'
        huvehuve 'to bathe'   huvehuve-ana 'where one bathes'>'bathing place'

(67)   Boumaa Fijian (Remote Oceanic, Fiji) reflexes of *Si- (Dixon 1988:192):
        sele 'cut, slice'   i-sele 'what one cuts with'>'knife'
        cula 'pierce'   i-cula 'what one pierces with'>'needle'
        'aba 'climb steep surface' i-'aba'aba 'what one climbs with'>'ladder'

Ross 1995a concludes that there is not sufficient representation of the main clause use of the instrument voice to reconstruct this function of the morphology to Proto-Austronesian. It is found widely in nominalizations, however. His account of this distribution is that its main clause use had not arisen yet, and this use arose independently in daughter languages (756-760).

Another possibility is that the verbal use of the instrumental voice morphology is archaic, and the reason that nominalizations are more widely found than main clause uses is that it has become reanalyzed as a nominalizer from its relativization use even in these otherwise more conservative languages. Instrumental applicatives in particular, if the available examples of applicative development serve as any indication, have a propensity for losing their main clause applicative use and becoming trapped in subordinate clauses.

4.5.5.2.2. Independent grammaticalization.

Although the development from applicative marker to nominalizer may look at least as plausible as the more widely accepted account for the development of the Austronesian focus (applicative)/nominalizing morphology, there is yet another account which we must consider. The remaining possibility is that there simply is no diachronic relationship between the morphology used in relativizations/nominalizations and the morphology used in the focus system.

The Haka Lai instrumental applicative construction appears to be a probable case of such independent development, and its similarity to the Austronesian case is striking. We have already seen examples of this instrumental applicative, marked by the element -naak, in Chapter 1. Another example is given in (68).

(68) tuuhmuy   khaa   law   ʔa-∅-thloʔ-<u>naak</u>
      hoe   DEIC   field   3SS-3SO-hoe-<u>INST APP</u>
      'He hoed the field with a hoe.'

There are also nominalizations marked by *-naak* in Lai, seen in (69).

(69) Instrumental and locative nominalizations

      tan-<u>naak</u>   'the place where cutting occurs'
                           'the instrument cutting occurs with'
                           'the act of cutting'

      thloʔ-<u>naak</u>   'the place where hoeing occurs'
                           'the instrument hoeing occurs with'
                           'the act of hoeing'

      zaʔw-<u>naak</u>   'the place where looking occurs'
                           'the instrument looking occurs with'

      tsoon-<u>naak</u>   'the place where learning occurs'
                           'the means by which learning occurs (e.g. a book)'
                           'the act of learning'

The use of *-naak* in nominalizations is presumably related to its use in relativization:

(70) a. Relativization on an instrumental object
      lawthlawpaa=niʔ   ŋaa   ʔa-tan-<u>naak</u>   naam   khaa   ka-∅-hmuʔ
      farmer=ERG   fish   3SS-slice-<u>REL</u> knife   DEM   1SS-3SO-see
      'I saw the knife that the farmer sliced the fish with.'

      b. Relativization on a locative object
      lawthlawpaa=niʔ   ŋaa   ʔa-tan-<u>naak</u>   ʔin   khaa   ka-∅-hmuʔ
      farmer=ERG   fish   3SS-slice-<u>REL</u> house   DEM   1SS-3SO-see
      'I saw the house that the farmer sliced the fish in.'

A proponent of the view that the Philippine focus system arose from a reanalysis of nominalizations as finite forms would presumably take the position that the instrumental applicative construction seen in (68) arose from a reanalysis of relativizations/ nominalizations like those seen in (69) or (70). However, there are problems with an analysis along these lines. First, the positioning of the morphology in the applicative construction and the positioning of the morphology in relativization/nominalization is distinct, as shown by a comparison of (71-72) and (73-76).

(71) lawthlawpaa=niʔ   naam   khaa   ŋaa   ʔa-∅-tan-<u>naak</u>-diʔ
      farmer=ERG   knife   DEIC   fish   3SS-3SO-cut-<u>INST</u>-EXHAUST
      'The farmer cut all the fish with the knife.'

(72) lawthlawpaa=ni?   naam   khaa   ŋaa   ?a-∅-tan-naak-bal
     farmer=ERG   knife deic   fish   3SS-3SO-cut-INST-EXPER PERF
     'The farmer has the experience of cutting the fish with the knife.'

(73) ŋaa   ?a-tan-di?-naak   naam   khaa   ka-∅-hmu?
     fish   3SS-cut-EXHAUST-REL   knife DEIC   1SS-3SO-see
     'I saw the knife that he cut all the fish with.'

(74) tha?-di?-naak   tha?   na-∅-ŋay-hŋaa-moo
     kill-EXHAUST-NOMLZR   instead   2SS-3SO-have-SUBJUNCT-INTERR
     'Would you have something to kill all of them with instead?'

(75) kal-bal-naak   ?a-∅-ŋay-laay-law
     go-EXPER PERF-NOMLZR   3SS-3SO-have-FUT-NEG
     'He won't have had any means of ever going.'

(76) ŋaa   naam=?in   ?a-∅-tan-bal-naak=?a?   ka-kal-laay
     fishh knife=INST 3SS-3SO-cut-EXPER PERF-REL=LOC 1SS-go-FUT
     'I'm going to go where he once cut fish with a knife.'

While the applicative construction marker typically occurs innnermost in a string of postverbal morphology (e.g. before the exhaustive and experiential perfect markers), relativizers and nominalizers typically occur closer to the end of such a string (in particular, outside of the aspectual markers in question).

Also potentially problematic for the nominalizer > finite form reanalysis account is the fact that there are not locative applicatives based on -naak in Haka Lai. If instrumental applicative constructions developed from productive instrumental relativization/ nominalization, it is unclear why equally productive locative relativization/ nominalization did not give rise to a locative applicative construction.

The probable sourse of -naak in Haka Lai (see Peterson 1998b) is a proto-element *-(s)naak, which elsewhere grammaticalized as a marker of abstract nominalizations and as a marker of ergative case. In some languages (e.g. Meithei: Chelliah 1997), it is found in words which mean 'side', and likely other cognates (e.g. in the Abor-Miri-Dafla languages: Lorrain 1907) are verbal elements meaning 'take' or 'carry'. A verbal/adpositional element of this sort, with just these semantics, is exactly the source we would expect for an instrumental applicative marker, which would account for why it developed this use in

Haka Lai. By the same token, an adpositional element in languages where most adpositional elements have a highly nominal character could also have developed a sufficiently nominal status to allow it to undergo compounding with nouns to yield a productive nominalizer or relativizer.

In light of this case, then, it would seem that we also must entertain the possibility that the Austronesian facts might be explained in terms of independent developments of the same source morphology. Thus, any definitive account of the development of the focus system in Proto-Austronesian will have to await more explicit argumentation for one or another analysis.

4.6. Lexicalization.

Finally, at either end of the continuum from transitivizing applicative to discourse functional applicative, certain verb-applicative marker combinations may be subject to lexicalization.

Figure 4.14. Lexicalization.
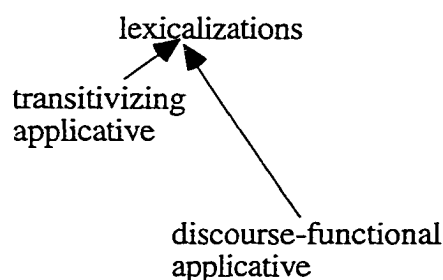
We have already seen in section 4.5.2. that a concomitant of the evolution of applicatives in Nadëb is an increase in the semantic idiosyncracies of verb-applicative combinations (e.g. with the word *mi-sóóm*, which refers to a particular stage in manufacturing blowguns, rather than simply having an instrumental applicative use, as might be expected).

At later stages of development in the languages Craig and Hale 1988 discuss, the ability of a cliticized postposition (i.e. applicative marker) to cooccur with a wide range of verbs is curtailed. First, their occurrence is restricted, and gradually they become more

lexicalized as semantic drift affects particular combinations of verb and preverb. A semantically fairly straightforward example of this is seen in the use of the instrumental/comitative preverb seen in the Rama example in (77):

(77)   naing   taata   sumuu   yu-i-siik-u
           my   father banana   with (preverb)-3-come-asp
           'My father brings bananas...' (Craig and Hale 1988:325)

Here, *yu-* occurs with an overt nominal object, and the semantics of the preverb-verb combination, while clear, is not completely compositional.

Haka Lai applicatives, while largely compositional, also display occasional semantic idiosyncracies in conjunction with particular verbs, as seen in (78), analogous to (77), and (79).

(78)   ʔa-ka-kal-pii
           3SS-1SO-go-COM
           'He took me.' (not 'He went with me.', as expected)

(79)   ʔa-ka-thiʔ-pii
           3SS-1SO-die$_1$-COM
           'He is obsessed with me.' (not 'He died with me.', as expected)

4.7. Summary.

In this chapter, I have surveyed the grammaticalization sources for the markers of applicative constructions and have, as others before me, identified two: adpositional and verbal sources. We have seen that discourse factors are crucial in motivating their development, in particular zero anaphora of the object of an adposition which will potentially grammaticalize as an applicative marker. Finally, we have considered developments which are attested once applicative constructions have come into being, namely the animacy-driven development of asymmetrical applicative constructions from symmetrical applicative constructions, and the development of applicative markers into frozen topicalizers or nominalizers. In the last case, however, it was also suggested that applicative marker-nominalizer bifunctionality might instead be due to independent grammaticalizations involving identical source morphology rather than the development of either construction into the other.

Chapter 5

Structural correlates of applicative constructions

5.1. Introduction.

Despite the role that the applicative construction has played in the development of syntactic theories over the last twenty-five years, remarkably little attention has focussed on the typology of languages which have different types of applicative constructions. The only exception has been typologizing in the sense of the Principles and Parameters framework (in particular Baker 1988 and 1996), which, while it has led to some interesting observations, has never been subject to the constraints on sample design that typifies most typological approaches. For instance, Baker 1988's primary sample of languages consists of sixteen languages, of which four are Bantu and two are Iroquoian. While this may be appropriate within the Principles and Parameters approach to typology, statements regarding correlations between applicative constructions and other structural features of the languages in question cannot reach the threshold of statistical significance.

The purpose of this chapter will be to seek structural correlates for the presence of applicative constructions in general and for the presence of particular types of applicative constructions using a conventional typological approach. First, in section 5.2, I present a sample of fifty languages which have applicative constructions of various sorts and discuss features which were investigated for the languages comprising the sample. In section 5.3, I present the results of the survey. The conclusion recapitulates the major findings and points to directions in which future research on the typology of applicative constructions should be directed.

5.2. Sample and methodology.

This section first discusses the sample used for the typological survey, and then presents the properties which were surveyed for each language. I consider some methodological issues along the way.

5.2.1. The sample.

Because the presence of an applicative construction in a given language may be difficult to detect depending on the quality of reference materials available for the language, any sample of languages with applicative constructions will have to be content with being somewhat of a convenience sample. That is, in selecting languages for the sample, I was restricted to languages which I knew or could determine have applicative constructions in the first place. For purposes of the survey, an applicative construction was defined as a productive transitivizing or ditransitivizing construction involving a verbal marker, which in the case of intransitive bases yields a transitive stem, and in the case of transitive bases may or may not result in a re-evaluation of the morphosyntactic status of the base object vis-à-vis the derived object. The relevance of each of these characteristics should be clear from the discussion in preceding chapters.

The second criterion used in picking sample languages was their known genetic affiliation and areal status. I have attempted to pick languages which either are unrelated or for which genetic affiliation is remote. I have also attempted to provide comparable coverage for most geographical areas. The latter is not completely possible since there are areas of the world in which applicative constructions as I have defined them simply are not clearly attested: Europe, Northern Asia, and the Caucasus.

The main feature of languages which might be expected to correlate with some other structural feature is the status of the objects involved in the applicative construction. It turns out that this feature is almost never sufficiently treated in grammatical descriptions to be of any use in typologizing them. Of course, as we have seen in previous chapters, languages often differ in this respect according to the type of applicative construction considered, so in order for this feature to be of any interest, we would need to have information not just regarding the status of objects in a single type of applicative construction, but for all applicative constructions in a given language.

With these selection criteria in mind, I surveyed the languages in Table 5.1. The languages are grouped by area and their genetic affiliation is given in parentheses.

Table 5.1. Applicative sample languages.

Papua New Guinea
Alamblak (Sepik Hill)
Awtuw (Ram)
Kâte (Huon)
Yimas (Lower Sepik)
Motuna (Buin)
Namia (Sepik-Ramu)

Africa
Amharic (Semitic)
Nama (Khoisan)
Sandawe (Khoisan)
Maasai (Nilotic)
Kanuri (Saharan)
Wolof (West Atlantic)
Chichewa (Bantu)

North America
Chitimacha (isolate)
Mohawk (Iroquoian)
Mutsun (Penutian)
Shasta (isolate?)
Shoshone (Uto-Aztecan)
Yavapai (Yuman)
Zuni (isolate)
Choctaw (Muskogean)
Eskimo (Eskimo-Aleut)
Halkomelem (Salishan)
Karok (Hokan)
Nez Perce (Sahaptian-Klamath)
Takelma (Takelman)
Wintu (Patwin)
Yokuts (Yokutsan)
Yuchi (isolate)

Southeast Asia
Kharia (Munda)
Tukang Besi (Austronesian)
Lai (Tibeto-Burman)

Northeast Asia
Ainu (isolate)

Australia
Ngalakan (Gunwiñguan)
Nunggubuyu (N. Australian prefixing)
Dyirbal (Pama-Nyungan)
Kalkatungu (Pama-Nyungan)

South America
Secoya (Tucanoan)
Shipibo (Panoan)
Epena Pedee (Chocó)
Caquinte (Arawakan)
Ika (Chibchan)
Nadëb (Maku)
Yagua (Peba-Yagua)
Paumarí (Arauan)
Urubu-Kaapor (Tupí-Guaraní)
Quechua (Quechuan)

Central America
Tzotzil (Mayan)
Tepehua (Totonac-Tepehua)
Zoque (Mixe-Zoquean)

In addition, for some comparisons given below, I use Nichols' 1992 sample, as well as a subset of the sample found in Nichols 1992 without applicative constructions to allow for stricter comparability (called the control sample below): Gbeya (Niger-Congo), Mandinka (Niger-Congo), Hausa (Chadic), Logbara (Nilo-Saharan), Chechen (Nakh-Dagestanian), Basque (isolate), Hungarian (Finno-Ugric), Russian (Indo-European), Nenets (Finno-Ugric), Mongolian, Kota (Dravidian), Chukchi (Chukoto-Kamchatkan), Nanai (Tungusic), Yukagir (isolate), Mandarin (Sino-Tibetan), Thai, Amele (Madang?),

Kobon (East New Guinea Highlands), Tauya (Brahman), Tawala (Austronesian), Vanimo (Sko), Kimaama (unknown), Ngkalmpw Knwme (Kanum), Gooniyandi (Northern Australian Prefixing), Martuthunira (Western Pama-Nyungan), Ngiyambaa (Southeastern Pama-Nyungan), Eastern Pomo (Hokan), Acoma (isolate), Kiowa (Kiowa-Tanoan), Washo (Hokan), Slave (Athabaskan), Quileute (Chimakuan), Haida (isolate), Siuslaw, Tunica (isolate), Mixtec (Eastern Otomanguean), Chichimec (Western Otomanguean), Canela-Kraho (Je), Hixkaryana (Carib), Pirahã (Muran), Sanuma (Yanomami), Mapudungu (Araucan) and Paez (Paezan). The number in this group is slightly smaller than that of the fifty language applicative sample, but this group of languages, it appears, do not have applicative constructions.

Note that it is very different to ask whether a language does *not* have applicative constructions than to determine that a language does indeed have them. Languages which were also considered for inclusion in the control sample but were rejected because they have something which may be an applicative construction (though it is difficult to tell from the sources) include: Abkhaz, Maidu, Ineseño, Gitksan, Wiyot, Pawnee, Wishram, Tarascan, Sahu, Songhai, Southern Sierra Miwok, Tonkawa, and Jivaro. Languages which have periphrastic benefactive constructions (e.g. Hua, Japanese) or serialization which borders on applicative construction status (many West African languages) also were avoided for this purpose.

There are some respects in which the sample as a whole might be skewed. First, the survey might be suspected of having too many representatives from North and South America. Given the genetic diversity generally assumed for these areas (close to half of the world's stocks), however, the number of languages is really not as large as it seems. An area which is almost certainly under-sampled is Papua New Guinea, but the lack of decent descriptive materials for this area is still felt despite improvements in recent years; on the basis of available descriptive materials, the presence of applicative constructions would not appear to be a particularly pervasive Papua New Guinea feature.

The primary problem with the sample is its size. As we will see in the discussion of the survey results, often we find data that is suggestive of a correlation between two features. In most cases, however, there are so few languages involved that it is difficult to demonstrate statistical significance for a given feature, or even if statistical significance is technically attainable, the validity of significance testing is called into question due to the small number of languages involved.

The only way in which the sample could be improved, then, would be if more languages with applicative constructions could be identified, for which good descriptive materials are available, and which are not (close) genetic relatives of the languages already surveyed. A large number of other languages exist which have applicative constructions and for which descriptive materials exist, but which are so closely related (genetically— e.g. Bantu or Uto-Aztecan—or areally—e.g. Australian or Northwest American coastal languages) to languages already included in the sample as to be unusable. To include these languages as well would only introduce genetic and possibly areal bias into the sample.

5.2.2. Features surveyed.

Most of the features surveyed are well-established typological features, including ones for which an earlier pilot study (Peterson 1996a) indicated that there might be some correlation. Others were features which were suspected to possibly correlate with the presence of particular applicative types due to similarities in the structures of well-known representative languages.

5.2.2.1. Characteristics of the applicative construction.

First, there were several characteristics for which the applicative construction or constructions in a language were evaluated. Since, as already mentioned, reliable information on the syntactic status of multiple objects in a given applicative construction is only rarely available, the survey was restricted to recording the presence or absence of a particular applicative type in a given language, where *applicative type* is taken to mean an applicative construction which refers to or codes a participant with a particular thematic

role. The potential pitfall of this evaluation technique is that since applicative constructions are often not described in detail, there may be some cases in which a description fails to mention a particular use of a given applicative marker. For instance, it was my impression before beginning the study that most benefactive applicative markers may also refer to maleficiary participants and in many cases to recipient participants; however, grammars do not consistently report on these characteristics, so that the data gathered in this area is to be suspected of being incomplete. Due to this, I do not make use of the category 'recipient' in what follows.

Next, languages were also evaluated on the basis of whether they have an applicative construction which pertains only to benefactive/malefactive and/or dative/goal participants (e.g. as in the case of Secoya), and whether they have applicative constructions which pertain only to animate participants. The second condition holds in the case of all languages in the sample which only have benefactive/malefactive or dative/goal applicative constructions, as far as I can determine. The converse, i.e., that all languages whose applicatives are restricted to animate participants have only benefactive/malefactive applicatives, is not true, however, as in the case of Halkomelem, where they refer to a variety of thematic entities, which must be animate participants.

Lastly, languages were sorted according to whether or not the marker for their various applicative constructions is multi-functional, or *generalized*, that is, codes multiple participant types. For instance, Bantu languages like Chichewa typically have only one applicative marker which covers a variety of peripheral participants. A slightly different categorization is given to languages for which there is partial thematic overlap in a given applicative construction. An example of a language which presents this situation is Wolof, where there is a benefactive applicative construction indicated by one marker, but there is also a different applicative marker which codes instrumental, locative, and manner applicative constructions.

5.2.2.2. Head and dependent marking status.

The extent to which a language is head or dependent marking is a quantification of the way in which it tends to indicate morphosyntactic relationships. Following Nichols 1992, I use a system of points to evaluate this characteristic. The constitutent types in (1) were examined and languages were assigned one point for each instance of morphological expression of the relationship on the head of the constituent, for each instance of expression of the relationship on the dependent of the constituent, and for each floating (i.e. not attached to head or dependent) expression of the relationship.

(1) a. pronominal possessor and possessed noun
     b. nominal possessor and possessed noun
     c. adjectival modifier and modified noun

     d. pronominal subject and verb
     e. nominal subject and verb
     f. pronominal direct object and verb
     g. nominal direct object and verb
     h. pronominal indirect object and verb
     i. nominal indirect object and verb

For example in the Tzotzil noun phrase in (2),

(2) Tzotzil (Aissen 1987:4)
     s-tot   li   Xun-e
     A3-father   the   Xun-cl
     'Xun's father'

the morphology which is relevant to the possessed nominal construction is the prefix in the first word, which indicates that the nominal is possessed by a third person possessor. Tzotzil thus gets a single point for head marking with respect to (1b). Since this is the only construction for indicating this relationship between nouns and nominal possessors, this is the only point that Tzotzil receives for this type of construction.

In many cases, a language only receives a single point, either for head , dependent, or floating marking of the relationship, for any one of the categories in (1). Halkomelem provides a different situation, however. In Halkomelem, there is more than one way that the relationship of the construction in 1b is expressed, depending on the type of nominal possessor. Compare the two examples in (3).

(3) Halkomelem (Gerdts 1988:41)

    a.   kʷθə   púkʷ-s   ɬə   sɬéniʔ
          aux   book-3pos   the   woman
          'the woman's book'

    b.   kʷθə   púkʷ   ʔə-ƛ'   John
          det   book   obl-det   John
          'John's book'

If the possessor is a common noun, as in (3a), the construction involves head marking by means of a possessive pronominal suffix attached to the head, as in the Tzotzil example. On the other hand, if the possessor is a proper noun, as in (3b), it is the dependent which is marked by means of an oblique preposition. Since these are both salient marking patterns for this construction type, Halkomelem receives both a point for head marking and a point for dependent marking for this category of construction.

To illustrate the procedure for calculating a language's head and dependent marking characteristics, let us consider an example in detail. In Lai, the expresssion of the construction types given in (1) yields the following points:

(4)   Head vs. dependent marking in Lai

		head	dependent	floating
a.	pronominal possessor and possessed noun	1		
b.	nominal possessor and possessed noun			
c.	adjectival modifier and modified noun			
d.	pronominal subject and verb	1	1	
e.	nominal subject and verb	1	1	
f.	pronominal direct object and verb	1	1	
g.	nominal direct object and verb	1	1	
h.	pronominal indirect object and verb	=DO	=DO	
i.	nominal indirect object and verb	=DO	=DO	

Nominal possession (see line b) involves no marking; nouns in a possessor-possessee relationship are simply placed adjacent to each other and the first is interpreted as the possessor, as in (5).

(5)   tsewmaŋ   nuu
        Tsewmang   mother
        'Tsewmang's mother'

Adjectives (line c) are either treated as verbs, or they also may simply be placed alongside the noun they modify with no overt marking of the relationship between them. Consideration of these two constructions, then, results in no head or dependent marking points.

Pronominal possession in Lai involves marking of the possessor's person and number on the possessee, as in (6).

(6)   ka-nuu
        1S POSS-mother
        'my mother'

Therefore, Lai receives a point for head marking in this type of construction.

Subjects and objects (direct and indirect) are marked in two ways. First, as shown in (7a) and (b),

(7)   a.   ka-ń-hmuʔ
                1SS-2SO-see
                'I saw you.'

        b.   tsewmaŋ=niʔ   niihuu   ʔa-∅-hmuʔ
                Tsewmang=ERG   Nihuu   3SS-3SO-see
                'Tsewmang saw Nihuu.'

there is obligatory person and number agreement registered on the verb (resulting in four head marking points), and there is case marking (ergative vs. absolutive) on associated nominal or pronominal elements (resulting in four dependent marking points). The marking of the relationship between indirect objects and the verb does not contribute further points to the totals, however, since this marking is identical to that used for marking the relationship between direct objects and the verb (Lai has a primary object-type alignment of objects). Thus, Lai receives a total of five head marking points and four dependent marking points.

5.2.2.3.   Morphological complexity.

The numbers gained from the survey of construction types to determine the languages' head and dependent marking characteristics also contribute to a quantification of a language's morphological complexity. The values for head, dependent, and floating

marking are simply aded together, so that in the case of Lai, above, the morphological complexity would be 5+4+0=9.

There are some problems in figuring morphological complexity in this manner. First, as Nichols 1992 notes (64), this means of figuring morphological complexity is really more a measure of inflectional complexity, and only for a portion of a language's inflection at that. A second problem is that since dependent marking includes prepositional marking of arguments (e.g. as in the Halkomelem example (3b)), morphological complexity turns out to include things which strictly speaking are not morphological. On the other hand, this measurement does reflect overall complexity, and using it allows for comparison with Nichols' sample.

5.2.2.4. Word order.

Word order is the preferred order of the verb with respect to other major constituents (subject and object) in main clauses, if the order of these elements is explicitly addressed: verb-initial, verb-medial, or verb-final.

If the author of a grammar explicitly states that the order of these elements is free or that no preferred order exists, I assign the value F(ree). If there is no specified order, no value is assigned for word order. Split orders are also indicated, but they are not counted as one or another type in assessing correlations in what follows.

5.2.2.5. Alignment.

Alignment, as I use it here, refers to the way in which a language codes its core thematic relations.[1] In determining alignment for a given language, I follow closely the crieteria established by Nichols 1992 (65ff.), though I depart from her assessment in the case of certain languages (See Appendix 3 for details). This means of determining alignment is really a measurement of *morphological* alignment, and does not consider syntactic alignment patterns. For instance, Mutsun (Okrand 1977) is morphologically a thoroughly accusative language, but word order patterns in an apparently stative-active or

---

[1]   I use the standard abbreviations of S for subject of intransitive, A for subject of transitive, and O for object of transitive in subsequent discussion.

split-intransitive manner (following the discussion by Okrand 1977:334-9). Pronominals in Mutsun are second position clitics. NP objects occur post-verbally, as in (8).

(8)   ka·n   mehe·si   <u>men-to·lose</u>
       1s   look   2s poss-knee
       'I'm looking at your knee.' (336)

Transitive subjects precede the verb, seen in (9).

(9)   <u>ʔippi=was</u>   ʔiččin
       rattlesnake=him   bit
       'The rattlesnake bit him.' (335)

There is a split in the treatment of intransitive subjects, however, seen in (10a) and (b), by which more active intransitive subjects are placed before the verb (like transitive subjects) and less active intransitive subjects are placed following the verb (like objects).

(10)   a.   lahpanin   <u>torow</u>
               lost   soap-root
               'The soap root got lost.' (335)

       b.   <u>penʸek</u>   ričča
               cat   speaks
               'The cat miaws.' (335)

This sort of patterning is usually not easily discernible from descriptions. Since grammatical descriptions typically provide inadequate discussion of such phenomena, trying to take them into account would potentially skew results as much as not taking them into consideration does.

Following Nichols 1992, I have identified a dominant alignment for each language on the basis of the alignment of nominal, pronominal, and verbal inflection. For each of these inflectional subsystems, there are the following possibilities: neutral (no inflectional difference betweeen A, S, and O), accusative (A=S, and O is distinct), ergative (S=O, and A is distinct), three-way (A, S, and O all are distinct), stative-active or split intransitive (A and O are marked differently and some S are marked as A and others are marked as O), and hierarchical (=inverse, marking of A, S, and O is determined by the semantic status of one argument with respect to the other). Dominant alignment, following Nichols 1992 (92) is then figured according to the following algorithm: dominant alignment is the alignment

found in the majority of the nominal, pronominal, or verbal alignment types, or the only non-neutral type, or the nominal over the pronominal type, or (in the case of a three way tie) the highest ranked of hierarchical (=inverse) > stative-active (=split-intransitive) > three-way > ergative > accusative.

Of these alignment types, accusative and ergative are well-known and require no exemplification here. Stative-active or split intransitive systems are those which display morphological patterns of the sort seen above for Mutsun. Three-way systems are represented by, for instance, Eskimo verbal morphology, in which there is a distinct form for intransitive subject agreement, and a conflated subject-object agreement marker unrelated to the intransitive subject agreement marker for transitives, seen in (11a) and (b) for Yup'ik Eskimo.

(11) a.   ner'-uq
           eat-3sS
           'She ate.'

      b.   neqa   ner'-aa
           fish   eat-3sS.3sO
           'She ate the fish.'

The final alignment type is the hierarchical system, in which verbal morphology indicates the participants in an event and stipulates how they are to be associated with grammatical relations. In Plains Cree, verbs contain markers which indicate the participants in an event. In addition, verbs bear either what is called the direct marker or what is called the inverse marker. The first of these indicates that of the participants in the event, the subject is the participant which is highest on the scale second person > first person > third person. The inverse marker indicates that of the participants in the event, the subject is the participant which is highest on the scale in the opposite direction (i.e. third person > first person > second person). Thus, in both (12) and (13) (taken from Foley and Van Valin 1985:297) the events involve first and second person participants.

(12) ki-tasam-i-n
      2-feed-direct-1
      'You feed me.'

(13)　ki-tasam-iti-n
　　　2-feed-inverse-1
　　　'I feed you.'

In (12), since the verb contains the direct marker, the second person entity is interpreted as the subject and the first person is the object by default. On the other hand, in (13), since the verb contains the inverse marker, the first person entity is interpreted as the subject and the second person is the object by default.

In addition, I attempted to evaluate the status of each language's object alignment (Dryer 1986, as discussed in the Chapter 4). For this characteristic, a language is classified either as a direct object language, a primary object language, or a neutral language (one which makes no clear distinction between the two objects associated with a ditransitive verb).

5.2.2.6.　Relative clause structure.

Because allowing peripheral participants access to otherwise inaccessible relativization strategies is a frequently cited motivation for the existence of applicative constructions (Comrie 1981, Givon 1984, Croft 1991), it was desirable to look carefully at the structure of relative clauses in the sample languages. First, I hoped to test the claim that applicative constructions are used to make peripheral objects accessible to relativization in these languages, which to my knowledge has never been done in any systematic way. Second, given the nature of the applicative sample (only languages with applicative constructions) it was impossible to test for correlations between the presence or absence of applicative constructions in general and relativization type(s). Nevertheless, I hoped to discover other structural tendencies in the languages' relativization strategies.

In evaluating relative clause structure, I have distinguished relativization strategies according to the following properties: the status of the relative clause head (internal, external); the expression of the nucleus or target (otherwise known as NP_{rel}) internal to the relative clause (gap, specialized relative pronoun, (normal personal) pronoun, full noun); form of the relative clause verb (non-finite, finite, finite with a relativizer); accessibility to

the relativization strategy; and position of the relative clause with respect to the head (pre-or postposed or irrelevant, in the case of internally-headed relatives).

This breakdown of relativization strategies into parameters is based largely on Keenan 1985, but it appears also to be largely compatible with the relativization typology proposed in Lehmann 1984, one of the more complete studies in this area. Lehmann distinguishes first of all between the adjoined type and the embedded type of relative clause. The former type is not particularly relevant since only one of the languages considered in this study (Ngalakan) makes any use of adjoined relatives. The remaining types Lehmann distinguishes, and how they are characterized using the parameters used in this study (italicized across the top of the table), are seen below.

Table 5.2. Relative clause types of Lehmann 1984 and their correspondences in the present study.

	position	*headedness*	*RC-internal head*	*RC verb form*
1. Relative participles:	prenominal	external	gap	non-finite
2. With subordinator:	prenominal	external	gap	finite with relativizer
3. Without subordinator:	prenominal	external	gap	finite
1. With non-introducing subordinator	postnominal	external	gap	finite with relativizer
2. Without subordinator	postnominal	external	gap	finite
3. With introducing subordinator	postnominal	external	gap	finite with relativizer
4. With relative pronoun				
a. non-resumptive	postnominal	external	relative pronoun	finite
b. resumptive	postnominal	external	pronoun	finite
Circumnominal	irrelevant	internal	noun	various

Lehmann's basic typology is structural and accessibility is treated essentially as an independent variable. For the purposes of this study, I simply made note of the types of arguments which were explicitly claimed to be able to participate in particular relativization strategies. In the absence of explict statements, I sometimes was able to determine basic NP-accessibility to relativization from examples provided in grammars.

Since the terms I use to characterize relativization strategies are somewhat idiosyncratic, I will briefly exemplify what they indicate here before proceeding to the next feature surveyed.

The first property, position of the relative clause, requires no explanation. Relative clauses occur either before or after the noun they modify, or they contain the noun they modify, in which case position of the relative clause with respect to the head noun is irrelevant.

Likewise, the last property, accessibility to relativization, requires little discussion. Since Keenan and Comrie 1977, it has been commonly acknowledged that relativization strategies may place restrictions on what they may have as their targets. Thus, a given relativization strategy may be available to subjects and objects, but not to indirect objects or obliques, or a relativization strategy may be accessible to absolutives, but not to ergatives, and so forth.

Next, expression of the head noun is usually structurally external to the relative clause which modifies it, as in (14), from Lai, in which the head of the relative clause, *lawthlawpaa* 'farmer' does not occur in the normal preverbal position of a subject within the relative clause.

(14)   [ka-law   Ɂa-Ø-thlaw-mii]   lawthlawpaa khaa ka-Ø-hmuɁ
        1S POSS-field 3SS-3SO-plow-REL farmer   DEIC 1SS-3SO-see
        'I saw the farmer who plowed my field.

Less frequently, expression of the relative clause head is in the position it would normally occur in internal to the relative clause, as in (15), where *kalaw* 'my field', occurs in the normal preverbal position for objects in Lai. Note that the presence of the subject inside relative clause also suggests that *kalaw* is internal to the sentence which constitutes the relative clause.

(15)   [lawthlawpaa=niɁ   ka-law   Ɂa-Ø-thloɁ-mii]   khaa ka-Ø-hmuɁ
        farmer=ERG   1S POSS-field 3SS-3SO-plow-REL DEIC 1SS-3SO-see
        'I saw my field that the farmer plowed.'

Next, the most frequent form of instantiation for the nucleus, or target of relativization, internal to a relative clause is simply a gap: there is no element which indicates its presence, unless there is verbal agreement morphology which registers its identity on the relative clause verb. Thus, in (14) above, *lawthlawpaa* 'farmer'

corresponds to a gap inside the relative clause; only the (null) third-singular object marker indicates that the gapped head is a third-singular entity. (15) illustrates a full noun instantiation of the nucleus/target: full noun instantiation of the relative clause head inside the relative clause is an internally-headed relativization strategy.

Less frequently, there are pronominal elements independent of verbal morphology which indicate the location (and sometimes the role) of the head within the relative clause. Instantiation of the relative clause head by means of a pronominal element which does not reflect the role of the head internal to the relative clause is exemplified by Wolof, in (16).

(16)   Wolof (Diagne 1971:187).
       gis=naa   góór   [g-i   ñëw]
       see=1sS   man   agr-pron/deic come
       'I saw the man who came.'

gi in (16) is a member of a class of deictic/pronominal elements in Wolof which agrees in gender and number with the antecedent head noun. The use of such an element in Wolof relatives does not, however, correlate with the role of the head within the relative clause. (16) involves a subject target for relativization; compare (17), which involves an object target for relativization:

(17)   gis=nga   téére [b-i   ma   jáng-oon]
       see=2sS   book   agr-pron/deic 1sS   read-perf
       'Have you seen the book which I read?'

There are also relative clause types in which a pronominal instantiation reflects the role of the head internal to the relative clause. Such cases are well known from languages such as Russian. Compare the subject relative in (18) and the object relative in (19), where the relative pronominal element declines for the case that the relative clause head would have internal to the relative clause:

(18)   kniga   [kotor-aja   upa-l-a]
       book   REL.PRON-FEM.NOM   fall.PERF-PAST-FEM.
       'the book which fell'

(19)   kniga   [kotor-uju   pročita-l-a]
       book   REL.PRON-FEM.ACC   read.PERF-PAST-FEM.
       'the book which she read'

Another device which may be used to represent the head within the relative clause is simply a pronoun which occupies the place that the external head would have occupied within the relative clause. Such examples are rare in the sample languages, and are largely restricted to relativization strategies used for oblique targets. One instance in which they may be used in relativizing on core participants (and in all cases, such a use is just an option—a gap is also sufficient) is as seen in Kanuri (example 20).

(20)   Kanuri (Hutchison 1981:221)
      kâm   [shí   lezɔ́nàdɔ́]   sáwàn-ɔ́m
      man   3s pron   went   friend-2s poss
      'The man that went is your friend.'

Here, the third singular pronoun in the relative clause is identical to an independent third singular pronoun, and it represents the position and role of the head, *kâm* 'man', within the relative clause.

Finally, relative clause strategies vary according to the form of the verb found in the relative clause. Surrounding the terminology used to describe the verb form of a relativization there is a considerable amount of confusion which appears to have as its source the notion of finiteness of the verb. Thus, some writers take a 'finite' verb to be one which has the full array of tense forms that may be displayed by a main clause verb; a non-finite verb is one which cannot express these different forms (e.g. Foley 1991). Others seem to be concerned primarily with the expression of the subject: non-finite clauses do not have a subject expressed in the same manner it would be in a finite clause.

Here I used the term 'finite' to describe a verb which could appear as the main verb in a main clause.[2] Thus, such a verb form is capable of expressing any tense and aspect distinctions which would normally be expressed by a main clause verb. Also, such a verb form carries any agreement morphology which normally would occur on a main clause

---

2   Thomas Shannon points out to me that word order internal to the relative clause is of importance, since we probably would not want to claim that the verbs of relative clauses in German, for instance, are not finite, despite their clause-final position. Let it suffice to say that finiteness or non-finiteness may be treated as a categorical distinction only in an artificial sense; in fact, there are varying degrees of finiteness, involving whether or not the verb may express all possible main clause tense/aspect distinctions, the instantiation (particularly in terms of case) of associated arguments, word order, and so forth.

verb. Lastly, a finite verb is one whose arguments are expressed in the same manner as they would be with a main clause verb were its arguments to be expressed by overt NPs.

I therefore distinguish between three types of relative clause verb forms. First, there are relative clause verb forms which are simply finite. For instance, in Namia, relative clauses apparently contain verbs and arguments identical to those found in main clauses, as in (21).

(21)   Namia (Feldpausch and Feldpausch 1992:61)
arana   mi   [ura   lapi-ka   p-la-maki-nak-e   loko]-a
but   tree garden   edge-of   pf-s-be-unbd-pr   3s-of

maoko   tija   aro   wenlal-e
top   indf   thus   break-pr
'But the top of a tree standing near the southern edge of the garden thus (at this time) breaks off.'

On the other hand, a non-finite relative clause verb form is one which does not (and cannot) bear the earmarks of a main clause verb. A relative clause verb form might be regarded as non-finite by virtue of the fact that it does not bear agreement morphology which normally refers to the head noun (e.g. Yimas and Caquinte), or because the agreement morphology that it bears differs from normal main clause agreement, as in Maasai. Compare, for instance, the Maasai main clause form in (22a) and the relative clause form in (22b), which show a difference in form of the agreement merker.

(22) Maasai (Tucker and Mpaayei 1955)
a.   e-eure
        3S SUBJ-fear
        'he/she/it/they fear' (8)

b.   oltuŋani   o-lotu
        man   3S SUBJ-go
        'the man who will go...' (106)

Next, a relative clause verb form might be regarded as non-finite because it does not make tense/aspect distinctions which main clause verb forms make, or because it contains special morphology which restricts the tense interpretation of the relative clause. Relative clause verbs in Shipibo, for instance, while bearing morphology identical to morphology found in

main clause present and past tense forms, apparently do not make all of the tense/aspect distinctions which main clause verbs normally may make (Loriot et al. 1993).

Finally, there are some relative clause verb forms which are essentially finite in the sense used here, but which bear an additional piece of morphology which signals the relative clause status of the verb. Such is the case in Lai, for instance, where relative clause verbs bear all agreement, tense, and aspect morphology (as well as all other verbal morphology, as far as I know), but there is an additional piece of morphology which accompanies the verb in the relative clause: -mii (for subject or object relativization, depending on the verb ablaut form), -tuu (for subject relativization), or -naak (for locative or instrument relativization). (23a) and (b) give examples of the first relativizer, (c) gives an example of the second one, and (d) gives an example of the third one.

(23) a. ?a-?it-mii   nuu   khaa   ka-hmu?
        3SS-sleep-REL   woman   DEIC   1SS-see
        'I saw the woman who was sleeping.'

     b. ?a-thlo?-mii   law   khaa   ka-hmu?
        3SS-hoe-REL   field   DEIC   1SS-see
        'I saw the field he hoed.'

     c. ?a-?it-tuu   nuu   khaa   ka-hmu?
        3SS-sleep-REL   woman   DEIC   1SS-see
        'I saw the woman who was sleeping.'

     d. ?a-thlo?-naak   law   khaa   ka-hmu?
        3SS-plow-REL   field   DEIC   1SS-see
        'I saw the field where he was hoeing.'

5.2.2.7. Means for encoding spatial relations.

Since many languages which have applicative constructions have been noted to exhibit a poverty of adpositions, but often do have a distinct class of relational nouns which indicate spatial locations (e.g. Bantu, Mayan, etc.), it was also of interest to examine the means languages with various sorts of applicative constructions have available for encoding spatial and other oblique relations.

I attempted to evaluate languages according to whether or not they have one or more of the following devices for encoding relations of this sort. First, there are true case markers, defined as affixal elements which attach to the head of a noun phrase to indicate spatial or oblique grammatical relations. Second, there relational nouns (a.k.a. spatial nouns, locational nouns, etc.), defined for this study as non-affixal elements which may or may not be in an overt possessive relationship with a noun that they indicate the spatial location for or function of; crucially, the phrase type which results from the concatenation of a noun and a relational noun is nominal. Relational nouns may themselves be subject to case marking or may appear in adpositional phrases if the language they occur in also has these devices available. A third device for indicating spatial relations is the adposition, which here is defined as a element which (like a relational noun) may be marked as the possessee of a noun which is its dependent. However, concatenation of an adposition with a noun creates a non-nominal phrase, such that it can neither be case marked nor enter into a relationship with a relational noun or another adposition.

The differences between true case marker, adposition, and relational noun are gradient, and I have approached language descriptions with these prototypes in mind. Often a description contains no explicit analysis of a particular piece of morphology as belonging to one of these three classes, and when no such analysis is forthcoming, the following criteria were used to classify a given element as belonging to one or the other class. True case markers attach to the head noun and may be characterized by allomorphy. Phonologically-based allomorphy, which is also consistent with analysis of an element as a clitic adposition, was given less weight than allomorphy which was gender/class based, or which had to do with some other lexical characteristic of the head noun. Adpositions have a phrasal distribution; the best evidence for an element being an adposition was thus a phrasal structure (especially something like a coordination structure) in which such a distribution is evident. The collocation of relational nouns and their dependent creates a phrase type which is still nominal, so if there is evidence that other spatial elements, such

as case markers or adpositions which are known to be such by independent criteria, are found to attach to what is suspected to be a noun-relational noun structure, this was taken as evidence that it contains a relational noun. Semantics was also a consideration in distinguishing between relational nouns and adpositions in some cases. In general, relational nouns have more concrete semantics (e.g. 'top', 'side') and adpositions (and true case markers) have more abstract semantics (e.g. 'allative', 'ablative').

5.2.2.8. Other valence-affecting constructions.

One of the typological claims that has been made regarding applicative constructions is that such constructions allow peripheral participants to be put into a position of relatively high topicality (Givón 1984, Croft 1991). Regardless of overall alignment, subject is generally thought to be a grammatical function which correlates with high topicality (Givón 1983, 1984). It is of interest, therefore, to know what percentage of languages which have applicative constructions also have the type of constructions which might allow peripheral participants to become the subject of a sentence. That is, the question is what percentage of languages with applicative constructions also have passive constructions, and does the presence of any particular type of applicative construction correlate with the presence of a passive construction.

In addition, the presence of causatives, other productive transitivization constructions, and antipassives was investigated.

5.2.2.9. Serialization, directionals, instrumental noun incorporation.

The remaining characteristics surveyed are verbal syntactic and morphological phenomena which might or might not be expected to correlate with the presence of applicative constructions of one sort or another. First of all, since it appears that a common historical source for applicative constructions is verb serialization, we might expect that a fairly high percentage of languages with applicative constructions would have productive verb serialization. A similar expectation might hold with regard to elements which indicate the directional component of an action. What I refer to as directionals in what follows

includes elements of the sort underlined in examples (24a) and (b), which lend a directional component to the action described by the verb.

(24)   a.   na-ʔin=ʔaʔ   ka-<u>va</u>-ʔit-laay
                 2S POSS-house=LOC 1SS-<u>GO</u>-sleep-FUT
                 'I'll go sleep at your house.'

        b.   na-ʔin=ʔaʔ   ka-<u>rak</u>-ʔit-laay
                 2S POSS-house=LOC 1SS-<u>COME</u>-sleep-FUT
                 'I'll come sleep at your house.'

Finally, instrumental noun incorporation, which appears to be an altogether unrelated phenomenon, was not expected to correlate with the presence of applicative constructions.

5.3. Results of the survey.

The findings of the survey are given in tabular form in Appendix two. Appendix three provides brief prose summaries of the findings for each language in the sample.

The present section discusses the results of the survey. First, I make a few general observations about the class of languages with applicative constructions taken as a whole as represented by this sample. Then I will proceed to an item-by-item discussion of the structural characteristics which were described in section 5.2 and any correlations or suggestive trends which are evident.

5.3.1. General observations concerning applicative systems.

Regarding the class of languages with applicative constructions as a whole, an investigation of the types of applicative constructions which cooccur yields the following interesting observations. The most common applicative construction type is, not surprisingly, the benefactive(/malefactive) type, which occurs in over eighty percent of the sample languages. Close to sixty percent have a comitative applicative construction and over forty percent have an instrumental applicative construction; in some languages these two constructions are marked by identical morphology, but this is not invariably the case. Static locative applicatives (involving no motion component) occur in over thirty percent of the languages, and if allatives and ablatives are included under a category of general locative, almost fifty percent of the languages have general locative applicatives. Most

locative applicatives allow an inanimate object. Applicative constructions which refer to a cause or circumstance associated with the action of the verbal base occur in under twenty percent of the languages.

There are languages in the sample which have just a benefactive applicative construction (e.g. Secoya), just a comitative applicative construction (e.g. Urubu-Kaapor), or just an instrumental applicative construction (e.g. Epena Pedee).[3] No language in the sample has just a locative applicative construction. For a language to have a locative applicative construction, it appears that it must also have either a benefactive (e.g. Ika) or an instrumental applicative construction (e.g. Ainu). However, while the first cooccurrence pattern is observed, the cooccurrence of benefactive and locative applicatives (of any type or just static locatives) is not a statistically significant tendency (see Tables 5.3 and 5.4).

Table 5.3. Presence of benefactive and static locative applicatives.

	with static locative	no stative locative	total	
with benefactive	13	29	41	
no benefactive	4	5	9	
total	16	34	50	$\chi^2=0.628$
	33%	67%		n.s.

Table 5.4. Presence of benefactive and any locative applicatives.

	with any locative	no locative	total	
with benefactive	20	21	41	
no benefactive	4	5	9	
total	24	26	50	$\chi^2=0.196$
	48%	52%		n.s.

The cooccurrence of instrumental and locative applicatives (under either interpretation of the latter), on the other hand, is statistically significant (see Tables 5.5 and 5.6).

---

[3]   Zuni is the only possible exception to this generalization in the sample. Zuni has a generalized applicative construction which references, among other things, datives and animate goals, but there are no good examples of a benefactive use for it. It seems unlikely that it may not have such a use, however.

Table 5.5. Presence of instrumental and static locative.

	with static locative	no stative locative	total	
with instrumental	13	8	21	
no instrumental	4	25	29	
total	17	33	50	χ^2=12.546
	34%	66%		p<.005

Table 5.6. Presence of instrumental and any locative.

	with any locative	no locative	total	
with instrumental	14	7	21	
no instrumental	10	19	29	
total	24	26	50	χ^2=5.129
	48%	52%		p<.025

These results probably are indicative of the fact that in many languages instrumental and locative applicatives are both marked by a generalized or partially generalized applicative marker. Thus, these simply reflect a tendency for these two types of applicative construction to be marked by the same morphology; this tendency is not as strong in the case of benefactive and locative applicative constructions.

In addition, there are some other statistically significant positive and negative correlations between the presence of one applicative and another. Thus, as seen in Table 5.7, the presence of a comitative applicative construction correlates highly with the presence of an instrumental applicative construction:

Table 5.7. Presence of comitative and instrumental applicatives.

	with instrumental	no instrumental	total	
with comitative	15	12	27	
no comitative	6	17	23	
total	21	29	50	χ^2=4.526
	42%	58%		p<.05

This correlation presumably reflects the tendency towards instrumental/comitative applicative marker bifunctionality which is observed.

Having a benefactive applicative construction correlates negatively with having an instrumental applicative construction, or in other words, a language is more likely to have

an instrumental applicative construction if it does not have a benefactive applicative construction, as seen in Table 5.8.

Table 5.8. Presence of instrumental and benefactive applicatives.

	with benefactive	no benefactive	total	
with instrumental	14	7	21	
no instrumental	27	2	29	
total	41	9	50	χ^2=5.723
	82%	18%		p<.025

There are also strong correlations between having a circumstantial applicative and locative (static or any type) and instrumental applicatives, seen in Tables 5.9, 5.10, and 5.11, once more indicative of the trend for all of these construction types to be marked by a single, generalized applicative marker.

Table 5.9. Presence of static locative and circumstantial applicatives.

	with circumstantial	no circumstantial	total	
with static locative	8	9	17	
no static locative	1	32	33	
total	9	41	50	χ^2=14.276
	18%	82%		p<.005

Table 5.10. Presence of any locative and circumstantial applicatives.

	with circumstantial	no circumstantial	total	
with any locative	9	15	24	
not any locative	0	26	26	
total	9	41	50	χ^2=11.961
	18%	82%		p<.005

Table 5.11. Presence of instrumental and circumstantial applicatives.

	with circumstantial	no circumstantial	total	
with instrumental	7	14	21	
no instrumental	2	27	29	
total	9	41	50	χ^2=5.723
	18%	82%		p<.025

Next, the characteristic of having a generalized or partially generalized applicative system correlates highly with having locative (of both types), instrumental, and circumstantial applicatives, as shown in Tables 5.12-5.15.

Table 5.12. **(Partially) generalized system and static locative applicative.**

	with static locative	no static locative	total	
with gen. app.	14	6	20	
no gen. app.	3	27	30	
total	17	33	50	χ^2=19.173
	34%	66%		p<.005

Table 5.13. **(Partially) generalized system and any locative applicative.**

	with any locative	no locative	total	
with gen. app.	16	4	20	
no gen. app.	8	22	30	
total	24	26	50	χ^2=13.742
	48%	52%		p<.005

Table 5.14. **(Partially) generalized system and instrumental applicative.**

	with instrumental	no instrumental	total	
with gen. app.	12	8	20	
no gen. app.	9	21	30	
total	21	29	50	χ^2=4.48
	42%	58%		p<.05

Table 5.15. **(Partially) generalized system and circumstantial applicative.**

	with circumstantial	no circumstantial	total	
with gen. app.	8	12	20	
no gen.app.	1	29	30	
total	9	41	50	χ^2=10.754
	18%	82%		p<.005

Next, while the presence of comitative applicative constructions does not correlate with having a generalized applicative marker, having them *does* correlate with having a *partially* generalized applicative system, as shown in Table 5.16.

Table 5.16. **Partially generalized system and comitative applicative.**

	with comitative	no comitative	total	
with part. gen. app.	12	4	16	
no part. gen. app.	15	19	34	
total	27	23	50	χ^2=4.306
	54%	46%		p<.05

On the other hand, having a generalized or partially generalized applicative system and a benefactive applicative construction, while common, is not a statistically significant correlation, as seen in Table 5.17.

Table 5.17. (Partially) generalized system and benefactive applicative.

	with benefactive	no benefactive	total	
with gen. app.	16	4	20	
no gen. app.	25	5	30	
total	41	9	50	χ^2=0.203
	82%	18%		n.s.

Thus, a language with a generalized or partially generalized applicative system is more likely to have comitative, locative, instrumental, or circumstantial applicative constructions, and vice versa, than a language without a generalized or partially generalized applicative system. Languages with generalized or partially generalized applicative systems are not more or less likely than languages without such systems to have benefactive applicative constructions, however. This perhaps implies that if a language simply has a benefactive applicative construction, it is probably not especially likely that it will extend the marker to other applicative construction types. On the other hand, if a language has an applicative construction marker which marks one of the less common applicative types, it may be more likely that it will extend the use of this marker to other less common applicative types.

A final general observation concerning the distribution of applicative construction types concerns circumstantial or causal applicative constructions. These occur only in languages which have other applicative types, always including at least a benefactive and a locative applicative, and sometimes including other applicative types. Usually they are one of the possible functions of a generalized applicative marker. Halkomelem is the only instance of a language I know of which has a circumstantial/cause applicative construction marked by a discrete piece of morphology.

5.3.2. Head and dependent marking status.

The head or dependent marking status of a language shows no significant correlation with the presence of applicative constructions. The average for head marking is 4.2 and the average for dependent marking is 3.9. Both of these figures are comparable with those found for Nichols' more heterogeneous 1992 sample. Similarly, the control sample does not deviate from these figures significantly: the head marking average is 4.5 and the dependent marking average is 3.5.

In addition, if subsets of the applicative language sample are considered (e.g. languages which have comitative applicative constructions), they do not deviate substantially from these averages.

5.3.3. Morphological complexity.

Morphological complexity also shows no correlation with the presence of particular applicative constructions. Morphological complexity of these languages averages about eight, putting it right in the middle of what Nichols 1992 (87-88) shows to be a normal distribution worldwide for morphological complexity. The average morphological complexity in the control sample also is eight.

As in the case for head/dependent marking, morphological complexity does not vary significantly if we consider languages which have a particular applicative construction type versus the remainder of the sample.

5.3.4. Word order.

If one considers the word order distributions in a larger, more heterogeneous sample, like that of Nichols 1992, the present sample differs somewhat, but not appreciably. The same is true of the control sample. The percentage frequencies of the different word orders in the applicative sample, along the results of Nichols 1992 and the control sample for comparison, are given in Table 5.18.

Table 5.18. Word order frequencies.

Word order:	V...	...V...	...V	Split	Free
applicative:	11%	13%	59%	4%	15%
Nichols 1992:	14%	20%	53%	8%	3%
control:	8%	16%	68%	8%	0%

There are a few correlations between word order type and the presence of particular applicative construction types. It should be mentioned from the outset, however, that these are in most cases based on very few languages, and thus the significance levels indicated by chi-square testing may be distorted. The presence of a circumstantial applicative and either verb-initial or verb-medial order show a statistically significant correlation, as seen in Tables 5.19 and 5.20.

Table 5.19. Presence of circumstantial applicative and verb-intial order.

	with circumstantial	no circumstantial	total	
verb-initial	3	2	5	
not verb-initial	6	35	41	
total	9	37	46	χ^2=4.811
	20%	80%		p<.05

Table 5.20. Presence of circumstantial applicative and verb-medial order.

	with circumstantial	no circumstantial	total	
verb-medial	3	2	5	
not verb-medial	6	35	41	
total	9	37	46	χ^2=4.811
	20%	80%		. p<.05

Based on more languages is the strong *negative* correlation between verb-final order and the presence of a circumstantial applicative construction:

Table 5.21. Presence of circumstantial applicative and verb-final order.

	with circumstantial	no circumstantial	total	
verb-final	1	26	27	
not verb-final	8	11	19	
total	9	37	46	χ^2=10.334
	20%	80%		p<.005

There is also a tendency for verb-medial languages to have generalized or partially generalized applicative markers (see Table 22) and for verb-final languages to not have such markers (Table 23).

Table 5.22. **(Partially) generalized applicative system and verb-medial word order.**

	with (partially) gen. app.	no (partially) gen. app	total	
verb-medial	5	0	5	
not verb-medial	15	26	41	
total	20	26	46	χ^2=7.258
	43%	57%		p<.01

Table 5.23. **(Partially) generalized applicative system and verb-final word order.**

	with (partially) gen. app.	no (partially) gen. app	total	
verb-final	8	19	27	
not verb-final	12	7	19	
total	20	26	46	χ^2=5.162
	43%	57%		p<.025

It is probable that all of these correlations reflect the same tendency, since, as we saw above (Table 5.15), there is a tendency for languages with circumstantial applicative constructions to have generalized applicative constructions.

5.3.5.   Alignment.

Alignment has to do with the determination of which arguments have access to core grammatical properties, essentially the same function that applicatives perform, and so any correlations with alignment are of particular interest. One area in which there are substantial differences between this sample of languages and the larger sample of Nichols 1992 is in alignment. The percentage frequencies for dominant alignment type are given in Table 5.24, again with the figures of Nichols 1992 and the control sample for comparison.

Table 5.24.   Dominant alignment frequencies.

Alignment:	Accusative	Ergative	Neutral	Stative-Active	Hierarchical
applicative:	31%	38%	6%	17%	6%
Nichols 1992:	60%	18%	5%	14%	3%
control:	50%	24%	10%	10%	2%

It is noteworthy that in Nichols' sample there are twice as many accusative languages as there are in this sample, and in this sample there are twice as many ergative languages as there are in Nichols' sample; otherwise, the figures are roughly comparable. This trend is also visible, though not as clearly, if one compares the applicative sample with the control sample. This disparity suggests that there is a higher incidence of ergative dominant alignment in languages which have applicative constructions, and this higher incidence is at the expense of accusative alignment systems. The tendency is not significant (χ^2=2.576), but it may be that it would be if the sample size were larger.

At least one suggestion could be made to explain this pattern if it does turn out to be significant. In ergative languages, it is often the case that the absolutive grammatical function is one of relatively high topicality. For instance, in Eskimo languages, the absolutive argument is typically definite, and to have an indefinite object, the antipassive is used. The function of applicative constructions in languages with ergative dominant alignment is to put arguments into the absolutive grammatical function, or a function with high topicality. We have seen that putting semantically peripheral entites into positions of high topicality is a function which certain types of applicatives often appear to perform. In particular, we have seen that a consistent role of applicative constructions, regardless of the thematic entity they refer to, is to make it possible to pronominalize a participant.

In an accusative language, the position of greatest topicality is usually the subject position. An applicative in an accusative language would not be as efficient in terms of making peripheral objects available for a high topicality position; a second construction, such as a passive, would be required as well.

The claim is thus not that ergative languages tend to develop applicative constructions or that languages with applicative constructions tend to develop ergativity. There are numerous ways that languages have for making arguments of different types accessible to reference-tracking mechanisms like pronominalization, and the combination of

ergativity and applicative constructions would seem to be two of the characteristics which pattern together more frequently.

Besides this more significant finding, there are a number of (again not particularly reliable) correlations between alignment type and the presence of particular applicative construction types, shown in Tables 5.25-5.28. The presence of instrumental and comitative applicative constructions correlates negatively with accusative dominant alignment, but their presence correlates positively with stative dominant alignment.

Table 5.25. Presence of instrumental applicative and accusative alignment.

	with instrumental	no instrumental	total	
accusative	3	12	15	
not accusative	17	16	33	
total	20	28	48	χ^2=4.395
	42%	58%		p<.05

Table 5.26. Presence of comitative applicative and accusative alignment.

	with comitative	no comitative	total	
accusative	5	10	15	
not accusative	21	12	33	
total	26	22	48	χ^2=3.874
	54%	46%		p<.05

Table 5.27. Presence of instrumental applicative and stative alignment.

	with instrumental	no instrumental	total	
stative	6	2	8	
not stative	14	26	40	
total	20	28	48	χ^2=4.360
	42%	58%		p<.05

Table 5.28. Presence of comitative applicative and stative alignment.

	with comitative	no comitative	total	
stative	7	1	8	
not stative	19	21	40	
total	26	22		χ^2=4.537
	54%	46%		p<.05

The explanation for these patterns is unclear, although it appears clear that the two patterns are interrelated, at least within this sample.

Finally, the survey of object alignment was inconclusive since it was not possible to definitively evaluate most languages.

5.3.6. Relative clause structure.

Interpretation of the results of the survey for relative clause structures is complicated by a number of factors. First of all, because relative clause structures are a grammatical feature that has only recently begun to receive extensive attention in descriptive grammars, and since some of the grammatical descriptions which the survey was forced to use were short ones, only some of the available grammars provided adequate discussion of relativization. Next, even if a grammar does give essential information about relativization strategies, the information may be incomplete in some crucial respect. For many languages the confidence level for information regarding accessibility is not particularly high, so the trends noted below concerning accessibility should be taken with caution. Finally, a large percentage of the languages in the sample are verb-final, so a large number of the languages considered for relative clause structure are also verb-final; verb-final languages often have externally-headed, gap relative clauses, and this is evident in the results of the survey. Thus, surveying the external vs. internal headedness of relatives and the expression of the head internal to the relative clause provided no interesting results.

There were thirty-six languages for which the information is sufficient in most respects. Only three of these have a non-gap relativization strategy, though about three more also have the possibility of some other instantiation (e.g. pronoun) of the target of relativization. Only two languages have internally-headed relative clauses as the primary means of relativization, although a number of languages have internally-headed relatives as an alternative strategy.

Other than the headedness of the relative clause and the relative clause-internal instantiation of the head, correlations with applicative construction types were sought for form of the relative clause verb and also accessibility to relativization. No correlations were found with the form of the relative clause verb.

It was difficult to evaluate the data for accessibility, and a variety of combinations of different accessibility types were tested for correlations. Only one combination, involving a division of languages into ones for which only core arguments (S, A, and O, or some subset thereof) were accessible to relativization versus ones for which other arguments (e.g. obliques, indirect objects) were also accessible to some strategy, yielded anything near significant results, seen in Tables 5.29 and 5.30.

Table 5.29. **Accessibility and presence of a static locative.**

	with static locative	no static locative	total	
access unrestricted	6	15	21	
access restricted	9	6	15	
total	15	21	36	χ^2=3.638
	42%	58%		p<0.10

Table 5.30. **Accessibility and presence of a circumstantial locative.**

	with circumstantial	no circumstantial	total	
access unrestricted	2	19	21	
access restricted	5	10	15	
total	7	29	36	χ^2=3.194
	19%	81%		p<0.10

These tables show that there is a tendency for languages with more restricted access to relativization to have static locative and circumstantial applicative constructions. As I mentioned above, my confidence in the quality of the data for accessibility is shaky, but if there is a connection to be drawn between relativization and the presence of any type of applicative constructions, I would expect there to be more and stronger correlations of the sort seen here. In descriptions of relativization, the role of applicative constructions in making peripheral arguments accessible to relativization strategies is sometimes noted (e.g. in the descriptions of Motuna and Tukang Besi); however, explicit statements to this effect are hardly the norm, which is presumably more a comment on the degree of completeness of the average descriptive material rather than an observation about the role of applicative constructions in relativization.

5.3.7. Means for encoding spatial relations.

Most of the languages in the applicative sample have adpositions and relational nouns, and less than a third have what I refer to as true case markers, as seen in Table 5.31.

Table 5.31. Means for indicating spatial relations.

Adpositions	72%
True case	28%
Relational nouns	58%

The presence of relational nouns strongly correlates with the presence of adpositions, and the presence of either of these negatively correlates with the presence of true case marking (a noteworthy finding in and of itself), as seen in Tables 5.32-5.34.

Table 5.32. Presence of adpositions and relational nouns.

	with adpositions	no adpositions	total	
with rel. nouns	25	4	29	
no rel. nouns	11	10	21	
total	36	14	50	χ^2=6.897
	72%	28%		p<.01

Table 5.33. Presence of adpositions and true case.

	with true case	no true case	total	
with adpositions	3	33	36	
no adpositions	11	3	14	
total	14	36	50	χ^2=24.115
	28%	72%		p<.005

Table 5.34. Presence of relational nouns and true case.

	with true case	no true case	total	
with rel. nouns	3	26	29	
no rel. nouns	11	10	21	
total	14	36	50	χ^2=10.631
	28%	72%		p<.005

There are no positive correlations between particular applicative construction types and any of these means for marking spatial relations. There is a negative correlation, however, between the presence of true case markers and the presence of static locative (but not any locative) applicatives which is significant, shown in Table 5.35.

Table 5.35. Presence of true case and static locative applicative.

	with static locative	no static locative	total	
with true case	3	11	14	
no true case	19	17	36	
total	22	28	50	χ^2=4.188
	44%	56%		p<.05

A possible explanation for this is the observation that locative applicative constructions often arise from adpositional sources (see Chapter 4), the relationship between these applicative markers and their source morphology often being quite transparent. Thus, if languages which have true case markers tend not to have adpositions and relational nouns (as seen in Tables 5.33 and 5.34 above), then languages with true case markers would tend not to have the primary morphology from which locative applicative constructions evolve, and so would not tend to have locative applicative constructions. This explanation does not, however, explain the fact that there is not a statistically significant tendency for languages with any locative applicative type (i.e. also including allative and ablative applicative constructions) to fail to cooccur with true case marking. That is, why static locatives should be singled out as the only locative applicative type which displays this tendency is unclear.

5.3.8. Other valence-affecting constructions.

There are not many significant correlations between applicative constructions and other valence-affecting constructions, but the few that exist are interesting in terms of their nature. Causatives, antipassives, and passives are distributed across the sample as a whole as seen in Table 5.36.

Table 5.36. Languages with other valence-affecting constructions.

	Causative	Passive	Antipassive
applicative sample	80%	38%	20%
Nichols' 1992 sample	64%	45%	14%
control sample	64%	40%	10%

The figures are roughly comparable. The discrepancies in the percentage of languages with passives and antipassives may be related to the relatively high proportion of

ergative languages in the present sample. The higher percentage of cooccurring morphological causative constructions is not amenable to an explanation along these lines, however, and it probably reflects what Nichols 1993 and Nichols et al. have identified as a tendency for a given language to prefer either transitivizing or detransitivizing valence-affecting operations. Thus, since these languages are all ones in which there exists one type of transitivization (applicativization), and cross-linguistically a relatively uncommon one at that, it is not all too surprising that a larger than normal percentage of these languages also have morphological causative constructions, another essentially transitivizing operation. Chi-square testing between the applicative and control samples shows this tendency to be nearly significant (χ^2=3.425), and it seems likely that a larger sample would show this correlation to reach higher levels of significance.

In terms of correlations between other valence-affecting constructions and particular applicative types there is an interesting pattern. There turns out to be a significant correlation between the presence of a passive construction and the presence of a benefactive applicative construction, as demonstrated by Table 5.37.

Table 5.37. Presence of passive and benefactive applicative constructions.

	with benefactive	no benefactive	total	
with passive	27	2	29	
no passive	14	8	22	
total	41	10	51	χ^2=6.862
	80%	20%		p<.01

A second significant correlation is seen to hold between the presence of a passive construction and the presence of a circumstantial applicative construction, shown by Table 5.38.

Table 5.38. Presence of passive and circumstantial applicative constructions.

	with circumstantial	no circumstantial	total	
with passive	7	12	19	
no passive	2	29	31	
total	9	41	50	χ^2=7.199
	18%	82%		p<.01

Tables 5.39-5.42, on the other hand, show that there is no correlation at all between the presence of passive constructions and comitative applicative constructions, locative applicative constructions (on the exclusively static or all-inclusive interpretations), or instrumental applicative constructions:

Table 5.39. Presence of passive and comitative applicative constructions.

	with comitative	no comitative	total	
with passive	11	8	19	
no passive	16	15	31	
total	27	23	50	χ^2=0.277
	54%	46%		n.s.

Table 5.40.   Presence of passive and static locative applicative constructions.

	with static locative	no static locative	total	
with passive	8	11	19	
no passive	9	22	31	
total	17	33	50	χ^2=0.947
	34%	66%		n.s.

Table 5.41. Presence of passive and any locative applicative constructions.

	with any locative	not any locative	total	
with passive	10	9	19	
no passive	14	17	31	
total	24	26	50	χ^2=0.346
	48%	52%		n.s.

Table 5.42.   Presence of passive and instrumental applicative constructions.

	with instrumental	no instrumental	total	
with passive	7	12	19	
no passive	14	17	31	
total	21	29	50	χ^2=0.435
	42%	58%		n.s.

This difference is interesting in light of functional explanations (e.g. Croft 1991) for the existence of applicative constructions to the effect that they make passivization on otherwise unpassivizable participants possible. If this were a major motivation for their existence in all cases, we might expect all applicative types to correlate with the presence of a passive. But Tables 5.37-5.42 indicate that the only languages in which there is any non-random

cooccurrence of passive constructions are languages with benefactive and circumstantial applicatives. The presence of a locative applicative or instrumental applicative does not correlate significantly with the presence of a passive. This may indicate, then, that it is only in the case of benefactive and circumstantial applicative constructions that passivization interacts with applicative constructions to any extent. Benefactives, at least, are presumably the most highly topical of applicative object types, and therefore it would make sense for them to have access to constructions like passive. This tendency is more difficult to motivate with respect to circumstantial applicative objects, but it may be that circumstantials, like benefactives, tend to be animate. To my knowledge, no systematic study of the semantic characteristics of circumstantial applicative objects in a language which has such a construction has been undertaken to date.

Several other significant or nearly significant correlations between specific applicative types and particular valence-affecting constructions exist for which there is no straightforward explanation; most of these are based on very few languages, however, so their significance levels may be spurious. There is a positive correlation between a language's having only a benefactive applicative and the presence of a causative construction. This is shown by Table 5.43.

Table 5.43. **Only a benefactive applicative and a causative construction.**

	with causative	no causative	total	
benefactive only	6	6	12	
other applicative	34	4	38	
total	40	10	50	χ^2=8.283
	80%	20%		p<.005

A nearly significant correlation worth noting is one between the presence of a causative construction and that of a comitative applicative construction, as indicated in Table 5.44.

Table 5.44. **Presence of causative and comitative applicative constructions.**

	with comitative	no comitative	total	
with causative	24	16	40	
no causative	3	7	10	
total	27	23	50	χ^2=2.966
	54%	46%		p<.1

Next, circumstantial applicatives tend to cooccur with antipassive constructions.

Table 5.45. Presence of a circumstantial applicative and an antipassive construction.

	with antipassive	no antipassive	total	
with circumstantial	5	4	9	
no circumstantial	5	36	41	
total	10	40	50	χ^2=7.843
	20%	80%		p<.01

Finally, there is a correlation which approaches standard levels of significance between the presence of an antipassive and an instrumental applicative construction, as shown by Table 5.46.

Table 5.46. Presence of antipassive and instrumental applicative constructions.

	with instrumental	no instrumental	total	
with antipassive	7	4	11	
no antipassive	13	27	40	
total	20	31	51	χ^2=3.47
	39%	61%		p<.1

These last correlations may have to do with the preponderance of ergative languages in the sample and the tendency for them to have antipassive constructions.

5.3.9. Serialization, directionals, and instrumental noun incorporation.

As shown in Table 5.47, of the three miscellaneous features which were surveyed, only directional elements were found in a large number of languages. Even when verb-verb compounding (which resembled serialization but was not treated in descriptions as a serialization phenomenon) is counted as a type of serialization, the number of languages with serialization does not even constitute a third of the sample languages. The number of languages with anything resembling incorporated instrumental nouns is even smaller.

Table 5.47. Frequency of miscellaneous phenomena.

Serialization	28%
Directionals	58%
Instrumental nouns	18%

Especially with the small number of languages involved in the case of instrumental nouns and serialization, it is impossible to find any statistically significant (or even borderline) correlations with any of these features.

5.4. Summary.

In summary, there are positive and negative correlations between the presence of particular applicative constructions and word order, some alignment types, and some other valence-affecting constructions.

Of particular interest is the apparent tendency for languages with applicative constructions to display an ergative alignment and to avoid accusative alignment. It was suggested above that this pattern may have to do with the particularly good match that applicative constructions provide for ergatively aligned systems, typically placing an argument in the highly topical absolutive relation, much like the antipassive does for transitive agent arguments in those languages.

Also of interest is the observation that applicative languages appear to have causative constructions with greater frequency than do languages which do not have applicative constructions. This would provide evidence for the proposal by Nichols, Peterson, and Barnes 1999 that languages fall along a continuum between two types: transitivizing and detransitivizing. Languages with applicatives would usually belong to the former type.

The investigation also reveals positive correlations between some types of applicative construction (benefactives and circumstantials) and passive constructions, but not between other types of applicative constructions and passives. These findings cast doubt on the likelihood that the role of applicative constructions is always to make peripheral arguments available for topicalization constructions like passives. The results of this chapter thus are consistent with those of Chapter 3.

There is an implicational relationship between different applicative types: locative and circumstantial applicatives depend on the presence of other applicative constructions,

while benefactive and instrumental/comitative applicatives do not. That is, there are essentially two core applicative constructions, benefactive and instrumental/comitative, and these serve as anchors as it were for the development of additional applicative constructions marked either by the same or distinct morphology.

Finally, there appear to be no clear correlations between the presence of particular applicative types and other major typological features such as head/dependent marking, morphological complexity, or features of relative clause formation and word order (with one or two nearly or possibly significant exceptions in the case of the latter two).

Future work in this area will require the development of a larger sample, including both languages with and without applicative constructions. This will enable us to determine more precisely whether the suggestive correlation between the presence of applicative constructions and dominant ergative alignment, and the greater tendency for languages with applicative constructions to also have causative constructions is significant in any strict sense. It may also allow us to detect features of relativization and systems for the indication of spatial relations which are particular to languages with applicative constructions.

Chapter 6

Synchronic approaches to applicative constructions

6.1. Introduction.

Chapter 2 demonstrated the ways in which applicative constructions vary synchronically. This chapter explores the means by which and the extent to which synchronic approaches have been able to account for these properties. The chapter concludes with a brief discussion of the relation of the research presented here to these synchronic accounts.

As we saw in Chapter 2, applicative constructions vary in the following ways:

1. Semantic role of the applicative object

    a. Homophonous applicative markers

    b. Non-homophonous applicative markers

2. Obligatory/optional nature of the construction

3. Treatment of the base and applicative objects

    a. Properties acquired/not acquired by the applicative object

    b. Properties lost/not lost by the base object

    c. Variation in properties acquired/lost according to applicative type

4. Transitivity restrictions:

    a. Minimum transitivity for underived verb

    b. Maximum transitivity for derived verb

Each of the following sections outlines a particular synchronic account, maintaining a roughly chronological order. Then, each section addresses the extent to which the variational possibilities are accounted for by that approach, and examines the details of the account as they relate to these aspects of variation.

6.2. Relational Grammar approaches.

All current work on applicative constructions owes a considerable debt to the Relational Grammar literature of the mid-seventies and early eighties. It is these studies which establish most of the parameters of variation given above for the first time, and demonstrate that the applicative construction is widely attested cross-linguistically. Chung 1976 for Indonesian (Austronesian), Trithart 1976 for Chichewa (Bantu), Gary 1977 for Luyia and Mashi (Bantu), Gary and Keenan 1977 and Dryer 1983 for Kinyarwanda (Bantu), De Guzman 1987 for Siswati (Bantu), Aissen 1983 for Tzotzil (Mayan), Allen and Frantz 1983 for Tiwa (Tanoan), Böhm 1986 for Kalkatungu (Pama-Nyungan), Gerdts 1980 and 1988 for Halkomelem (Salishan), and Willet 1981 for Tepehuan (Uto-Aztecan) contain the fundamental Relational Grammar treatments of applicative constructions. Each work has as its goal support for the Relational Grammar approach to applicative constructions and relation-affecting phenomena in general, and/or presentation of a problem that the language presents for the more general principles constraining relation-affecting phenomena which were under construction by the more prominent architects of the theory, Perlmutter and Postal.

6.2.1. The basic Relational Grammar account.

The first Relational Grammar account of applicative constructions in print was that of Chung 1976 for Indonesian. Chung couches her plea for a theory of grammar which recognizes grammatical relations as primitives and characterizes relation-affecting phenomena as rules manipulating those relations in terms of an argument for a rule in Indonesian which she calls 'Dative', essentially a benefactive applicative construction. First, she notes that direct objects of monotransitives typically display the following properties: they occur as bare noun phrases; they may become subjects in a passive construction; they may be reflexive with the subject; they may occur clause initially if the subject is pronominalized; they control equi deletion of subjects in purposive complements; and relativization on them involves a deletion strategy. These properties are not seen for

indirect objects or other obliques where Chung's Dative has not applied. If Dative has applied, usually including the addition of morphology to the verb (i.e. an applicative marker), the benefactive object displays the properties of a monotransitive direct object. The patient object, in such cases, does not diplay these properties.

The account provided by Chung is what was to become the standard Relational Grammar account of applicative constructions properties. First, there are primitive grammatical relations: subject, direct object, indirect object (terms), and locative, benefactive, etc. (non-terms). Terms display the properties in question, while non-terms do not. Dative is a rule which turns an initial non-term (a benefactive) into a term (a direct object). By the Relational Annihilation Law (proposed independently by Perlmutter and Postal), if one NP assumes the characteristics of another NP, the latter NP ceases to bear a term grammatical relation (it becomes a 'chômeur'). Thus, since Dative replaces a direct object with a benefactive, the application of Dative causes the direct object to fail to display any of the properties which we would otherwise expect it to exibit.

6.2.2. Relational Grammar accounts of synchronic variation.

As far as I can tell, Relational Grammar accounts do not attempt to explain either the homophony or the non-homophony of the morphology used to mark applicative constructions.

Nor do such accounts attempt to account for the obligatory or optional nature of a given applicative construction. The only exception is Gerdts 1988 which accounts for the obligatory or optional character of Halkomelem applicative constructions in terms of the animacy of the applicative object (see section 2.3.4. above).

What Relational Grammar accounts *are* particularly good at is accounting for the treatment of the base and applicative objects. As seen for Indonesian in the previous section, by means of a simple statement of the construction in terms of a rule and general principles which hold for all relation-affecting phenomena, the characteristics of both the base and the applicative object are predicted. Since different applicative constructions are

due to different rules, there is no expectation in Relational Grammar that benefactive applicatives should have properties identical to those of instrumental applicatives or locative applicatives, and so on. However, as Baker 1988 (following Marantz 1984) points out, Relational Grammar accounts fail, therefore, to account in a unified manner for the general property that all of these constructions have in common, which is a central goal of other accounts.

What was more of a controversy for Relational Grammar were the symmetrical Bantu languages (like Kinyarwanda), which appear to have two objects which are treated equally in applicative constructions, thereby calling into question the universality of a unitary relation of direct object and also the Relational Annihilation Law: In these languages, at least at first glance (i.e. the glance of Gary and Keenan 1977), there appear to be two nouns which bear the relation of direct object. Every noun should in principle be uniquely matched with a grammatical relation, however. Furthermore, in these languages' applicative constructions, the direct object does not lose its object properties, as it is predicted to by the Relational Annihilation Law. Observations from languages such as these led Gary and Keenan to claim that there was no distinction between direct objects and indirect objects in such languages. Later studies, such as Dryer 1983, however, pointed out that a closer inquiry will reveal differences between the two types of object even in these langauges.

Perlmutter and Postal 1983 allowed for variation in the properties associated with direct and indirect objects cross-linguistically. This step, as pointed out by Bresnan and Moshi 1990, required specification of object properties on a rule-by-rule basis, and hence reduced the generality of the Relational Grammar approach to applicative constructions.

A further issue was raised in languages like Tepehuan (see section 2.4.3), where agreement reflected both characteristics of the base object and characteristics of the applicative object. Willet 1981 argued on the basis of such data that agreement was determined on more than one stratum: verb stem ablaut was determined by the direct

object, the applicative rule applied, and then other agreement was determined by the advanced indirect object or benefactive.

Finally, while Relational Grammar accounts have not addressed the issue of upper limits on the transitivity of the underived verb found in applicative constructions, Chung and others (e.g. Aissen 1983) did directly note a restriction of the process to transitives. The explanation for this restriction espoused by Chung 1976 is not clearly stated, but it appears to be essentially that since indirect objects and obliques assume the status of a direct object, there has to be a direct object in the argument structure of the verb for the more peripheral object to assume the status of. Aissen 1983 concludes, on the other hand, that a restriction to transitives must be independently stated as part of the rule. There appear to be no discussions in the Relational Grammar literature of the ability of intransitives to occur in some applicative constructions, such as those of Kinyarwanda.

6.2.3. Extensions of standard Relational Grammar accounts.

Gerdts 1992 and 1993 have introduced some modifications to standard Relational Grammar accounts which are of note. Gerdts claims that the properties that applicative constructions (and other advancement constructions) have in a given language is dependent on how many Morphosyntactic Argument Positions (MAPs), or the number of arguments which may be treated as direct arguments of the verb, a language has. Thus, in a language like Chichewa, there are only two MAPs, and so if a beneficiary is associated with it (the function of a benefactive applicative), the patient cannot be associated with it. On the other hand, in a language like Kinyarwanda, there are a large number of MAPs (four, in fact, given that verbs may agree with up to three objects). In Kinyarwanda, if a beneficiary is associated with a MAP, it does not preclude a patient from association with another MAP.

6.3. Government and Binding Theory approaches.

Government and Binding Theory approaches to applicative constructions are due almost entirely to the work of Baker in his dissertation and his work in the subsequent ten years, which resulted in numerous articles on applicative constructions (1988b, 1990,

1991, 1992) and two books in which their morphosyntax figures prominently (1988a and 1996). Applicative constructions in Baker's approach are instances of 'Incorporation', which is a specialized instance of the generalized transformation 'move-α' in which a word-level (X^0) element moves to become part of another word-level element. Other cases of incorporation include canonical noun incorporation, from which the entire approach must have taken its inspiration, passive constructions, and causative constructions.

6.3.1. The basic Government and Binding account.

In his 1988a account of applicative constructions, Baker characterizes them as instances of 'preposition incorporation', presumably because applicative constructions usually involve oblique semantic roles, which in some languages (even those that have applicative alternatives) are expressed in adpositional phrases.

Thus, Baker claims essentially that an applicative constructions begins with a structure like that in Figure 6.1,

Figure 6.1. Pre-incorporation applicative structure.
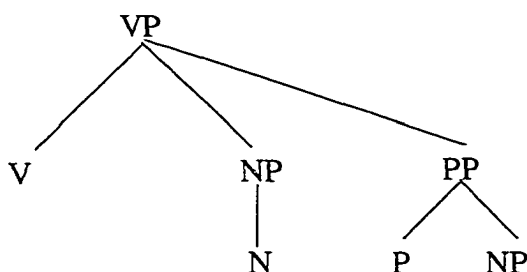
and that by movement of the preposition and its incorporation into the verb, as in Figure 6.2,

Figure 6.2. Incorporation of preposition.
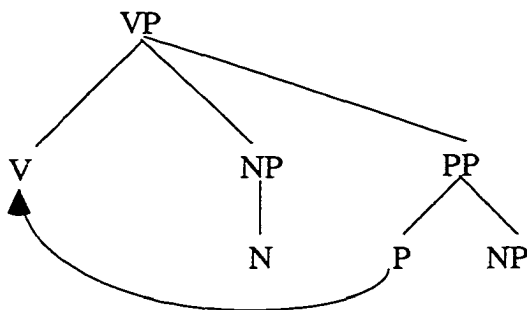
a complex verb is created which has the syntax of an applicative construction, as in Figure 6.3:

Figure 6.3. Post-incorporation applicative structure.

```
              VP
            / |  \
           /  |    \
        V+P   NP     NP
               |      |
               N      N
```
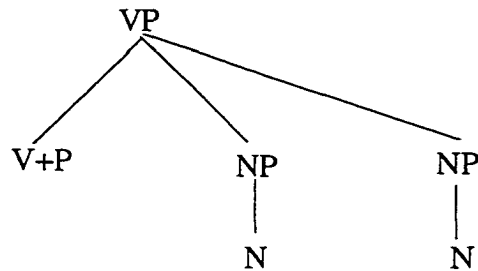
6.3.2. Government and Binding accounts of synchronic variation.

With the mechanism of incorporation as its backbone, Baker's account of applicative construction variation involves structural variables: differences in d-structure constituency and differences in the Case-assigning capabilities of verbs and incorporated prepositions.

Baker does not have anything explicit to say about homophonous vs. non-homophonous applicative markers.

The obligatory/optional nature of applicative constructions for Baker comes down to a question of whether the preposition is actually a preposition or whether it is an affix. If it is an affix, it must occur as a part of a larger word (the verb) in order to receive any morphological realization (1988a:72). Otherwise, it should be able to occur in either incorporated or unincorporated form. There are cases in which both incorporated and non-incorporated prepositional variants are allowed, and there is no necessary resemblance in the form of the incorporated and non-incorporated prepositions. These cases Baker regards as allomorphy.

Next, while he extends his account to other languages' applicative constructions in his 1988a book, Baker deals most extensively with Bantu languages, since the two ways in which applicative constructions vary most obviously are both present in that language family.

Baker associates the ability for an object to display object properties with the assignment of *structural* Case to that object. Baker 1990 distinguishes between the benefactive applicative markers in languages like Chichewa, which assign *inherent* Case (and not *structural* Case), from the benefactive applicative markers in languages like Kinyarwanda, which assign *structural* Case (and not *inherent* Case). Thus, according to Baker, in a language like Chichewa, the incorporation of an applicative preposition into a transitive verb results in a complex verb which can assign only one structural Case. In a language like Kinyarwanda, on the other hand, incorporation of an applicative preposition into a transitive verb results in a complex verb which can assign two structural Cases. So, in Chichewa-type languages, only one object of applicative verbs may display object properties, while in Kinyarwanda, both objects may.

This difference in the character of the applicative preposition in the languages also accounts for the fact that they can occur with intransitives in Kinyarwanda, but not Chichewa.[1] In Chichewa, the verb resulting from the combination of an intransitive base and an applicative preposition would not be able to assign structural Case to its object; in Kinyarwanda, on the contrary, an intransitive verb-applicative preposition complex has the ability to assign structural Case to an object by virtue of containing the incorporated preposition which has structural Case-assigning properties.

Baker 1988b and 1990 account for language-internal differences between applicative constructions in two ways. First, differences between, for instance, the benefactive applicative in Kinyarwanda, which allows both the applicative and the base object to display object properties, and the same language's locative applicatives, which allow only the applicative object to display object properties, are accounted for in a manner analogous to that used to account for differences between languages like Kinyarwanda and Chichewa already seen: benefactive applicative prepositions in Kinyarwanda can assign

---

[1]   In his 1996 book Baker changes his claims to reflect the revision of the hypothesis concerning the ban on cooccurrence of applicatives with intransitive to the one in which there is no cooccurrence of applicatives with unaccusatives.

structural Case, but locative applicative prepositions in Kinyarwanda cannot (like the Chichewa benefactive applicative preposition).

Second, some applicative constructions are claimed to differ due to underlying structural differences. Baker's 1988b account of the differences between Chichewa benefactive and instrumental applicatives is the most detailed example of this sort. The general assumption being that an NP may receive *inherent* Case only from an element that theta-marks it, Baker claims that benefactive applicative objects differ from instrumental applicative objects in that the former is theta-marked by its d-structure preposition, while the latter is *not* theta-marked by its d-structure preposition and instead receives its theta-marking directly from the verb. Thus, when the benefactive applicative preposition incorporates, its trace cannot assign Case to the benefactive applicative object, and the benefactive applicative object must receive Case from the verb; since the verb does not theta-mark the benefactive applicative object, it must assign it *structural* Case. On the other hand, since the verb *is* responsible for theta-marking the instrumental applicative object, either that object or the patient object may receive structural Case.[2]

6.4. Lexical-Functional Grammar approaches.

The Lexical-Functional Grammar approach to applicative constructions has so far been applied only in Bantu languages, and covers about the same ground as the Government and Binding approach. This approach treats applicative constructions as resulting from a morpholexical operation on argument structure which inserts an internal object argument. In general, it is a part of a much larger project within LFG, Lexical Mapping Theory (beginning with Bresnan and Kanerva 1989 and elaborated in Bresnan and Moshi 1990), which accounts for a wide variety of relation-affecting phenomena, such as passives, causatives, statives, and so forth. Lexical Mapping Theory is a linking theory, accounting for the association of elements bearing particular thematic roles in argument

---

[2]   Baker does not have entirely correct facts. As Alsina and Mchombo 1993 point out, instrumental applicatives do *not* allow a symmetrical treatment of the objects in question across the board; most notably they are asymmetrical with respect to passivization.

structure with particular grammatical relations or functions. Depending on the grammatical function that a particular thematic role ends up being associated with, it displays differing syntactic properties.

Lexical Mapping Theory conceives of argument structure as organized along an independently motivated thematic hierarchy, given in (1).

(1)   agent > beneficiary > goal > instrument > patient/theme > locative

In addition, grammatical functions are broken down into two properties: *restricted*, which correlates with whether a function can (-) or cannot (+) be associated with any kind of thematic role; and *objective*, which expresses whether a function is a complement to a transitive verb (+) or not (-). With this two-way featural distinction, LMT recognizes four basic grammatical functions, seen in (2):

(2)   [-restricted, -objective]   SUBJ   'subject'

        [-restricted, +objective]   OBJ   'unrestricted object'

        [+restricted, -objective]   OBL$_\theta$ 'restricted object'

        [+restricted, +objective]   OBL$_\theta$ 'oblique object'

The third and fourth functions are actually abbreviations for multiple objects with one of several possible thematic roles (e.g. instrument, goal, etc.)

Certain thematic roles are intrinsically specified for some of these features, as in (3).

(3)   Intrinsic specifications:

        a.   agent   b.   theme/patient   c.   locative
                | | |
                [-o]   [-r]   [-o]

Alsina and Mchombo 1993 propose the following specifications to augment these.

(4)   Internal argument intrinsic specifications:

        a.   θ   b.   θ<<goal
                | |
                [-r]   [+o]

(4a) and (b) refer to internal arguments, which usually include patients and themes, but also include applicative objects. The second intrinsic specification, which applies in cases where (4a) does not, indicates that a thematic entity ranked hierarchically lower than goal receives the intrinsic specification [+objective].

In addition, following any application of morpholexical rules, there are two default specifications:

(5)   Default specifications:

a. $<\theta$ b. θ
    | |
   [-r]   [+r]

By (5a), the most highly ranked thematic element is assigned the feature [-r]. By (5b), all other roles are marked restricted.

Finally, there are two well-formedness principles which constrain linkings. First, there must be a subject. Second, each thematic role must be associated with a unique grammatical function, and vice versa.

6.4.1. The basic Lexical-Functional Grammar account.

The essential LFG account of applicative constructions is that applicatives are a morpholexical process which inserts into a predicate's argument structure an internal object, as depicted in (6).

(6) $\emptyset$
    $\Downarrow$
  $<...\theta_{appl}...>$

The interaction or alternative interactions of this process with the intrinsic and default specifications and well-formedness principles sketched above accounts for the properties of individual applicative constructions.

6.4.2. Lexical-Functional Grammar accounts of synchronic variation.

On the LFG account, the difference between symmetrical and asymmetrical languages has been attributed to the activation in the latter of a property called the

'Asymmetrical Object Parameter', essentially a constraint on intrinsic specification such that only one thematic element may be intrinsically specified as [-restricted]:

(7) $*\theta...\theta$
        | |
        [-r][-r]

So, considering, for instance, passivization, which is taken to be a morpholexical rule which links the highest ranked thematic entity to a null grammatical function (8),

(8) $<\theta$
         |
         $\varnothing$

in a symmetrical language like Kinyarwanda, the interaction of these mechanisms is as seen in (9).

(9)   'V for'   <agent   beneficiary   patient>
                     | | |
        intrinsic: [-o]   [-r]   [-r]
        passive: $\varnothing$
        defaults:

result:	unrestricted object/subject	unrestricted object/subject
	subject	unrestricted object
OR		
	unrestricted object	subject

Following addition of the applicative argument (beneficiary) via the applicative rule (6), the beneficiary and patient are both intrinsically specified as [-restricted] (by 4a and 3b). The agent is intrinsically specified as [-objective] (by 3a), but is linked to a null grammatical function by application of the passive rule (8). The well-formedness constraints account for the rest: either of the remaining arguments must be the subject, and the other must be something else, which is what happens in a symmetrical language.

In a language like Chichewa, on the other hand, the Asymmetrical Object Parameter (7) leads to a different linking:

(11)	'V for'	<agent	beneficiary		patient>
		|	|		|
intrinsic:		[-o]	[-r]		[+o]
passive:		Ø			
defaults:					[+r]
			unrestricted object/subject		restricted object
result:			subject		restricted object

Again, the agent is intrinsically specified as [-objective] (by 3a), but is linked to a null grammatical function by the application of passive (8). In this case, however, it is only the beneficiary which is intrinsically specified as [-restricted] (by 4a), since it would violate the Asymmetrical Object Parameter (7) if there were more than one internal argument specified as [-restricted]. The patient instead receives the alternative intrinsic specification for internal arguments, [+objective] (by 4b). The patient also receives the default specification [+restricted] (by 5b), making it the object. The beneficiary, on the other hand, is the subject, since by the well-formedness conditions, there must be a subject. This approach also produces the right results when looking at other object properties.

In addition, the account also captures the interaction of properties nicely. It turns out that in a symmetrical language like Kinyarwanda, for instance, multiple objects may display different object properties simultaneously. For instance, one object may be the subject of a passive, while the other object may be represented by pronominal object marking. This sort of distribution of object properties is not found in asymmetrical languages, however. On the LFG account, in order for a particular object to display object properties, it must have the feature [-restricted], so in a language without the Asymmetrical Object Parameter, it is possible for multiple objects to display object properties simultaneously. However, in a language with an active Asymmetrical Object Parameter, such an occurrence is not possible.

Nonetheless, it is not clear that this is a particular advantage of this theory over that of Baker, for instance. It seems that on Baker's theory languages like Kinyarwanda, in which both objects are assigned structural Case—one from the verb and the other from the

applicative–would be capable of displaying different object properties simultaneously, as long as these object properties correlate with structural Case.

Turning to how the LFG approach deals with language-internal applicative variation (Alsina and Mchombo 1993), this time taking order of objects with respect to the verb for a demonstration, in Chichewa benefactive applicative constructions, the linking of thematic entities to grammatical functions is as in (12).

(12)	'V for'	<agent	beneficiary	patient>
		|	|	|
	intrinsic:	[-o]	[-r]	[+o]
	defaults:			[+r]
	result:	subject	subject/ unrestricted object	restricted object
			unrestricted object	restricted object

The agent is intrinsically specified as [-objective] (by 3a). In this case it is only the beneficiary which is intrinsically specified as [-restricted] (by 4a) since it would violate the Asymmetrical Object Parameter (7) if there were more than one internal argument specified as [-restricted]. Instead, the patient receives the alternative intrinsic specification for internal arguments, [+objective] (by 4b). The patient also receives the default specification [+restricted] (by 5b), making it the object..

Instrumental applicatives in Chichewa differ in that there are two possible linkings of the instrument and patient roles, as seen in the two representations in (13).

(13)	a. 'V with'	<agent	instrument	patient>
		|	|	|
	intrinsic:	[-o]	[-r]	[+o]
	defaults:			[+r]
	result:	subject	unrestricted object	restricted object
			unrestricted object	restricted object
	b. 'V with'	<agent	instrument	patient>
		|	|	|
	intrinsic:	[-o]	[+o]	[-r]
	defaults:		[+r]	[+o]
	result:	subject	restricted object	unrestricted object
			restricted object	unrestricted object

In (13a), the instrument is intrinsically linked to [-restricted], so it may display object properties, like postverbal position, while the patient does not. In (13b), on the other hand, the *patient* is linked intrinsically to [-restricted], so it displays object properties, while

the instrument does not. The reason that there exists this alternative intrinsic specification of the two objects in the case of the instrumental applicative, but not in the case of the benefactive applicative is that instruments, and not beneficiaries, are ranked lower on the thematic hierarchy than goals are, so that instruments may be intrinsically specified as [+objective], but beneficiaries must be intrinsically specified as [-restricted].

To LFG's credit, it does manage to account for all of the data (while the GB approach appears to account for an erroneous set of data), and there has been additional data provided by proponents of the LFG approach which it is also able to account for, but which has yet to be addressed by the GB approach.

Among the synchronic approaches discussed so far, the LFG model of the syntax of applicative constructions is the only one which explicitly addresses the issue of multiple objects displaying object properties simultaneously. However, it is unclear how the LFG approach would account for cases in which both objects condition agreement morphology, but for which the primary agreement is always with the applicative object, as seen in Uto-Aztecan and Haka Lai.

6.5. The cognitive approach.

Shibatani 1996, while a preliminary effort, is an interesting move into a new dimension of synchronic explanation. Noting that there are often restrictions on the use of benefactive applicatives with intransitives, and also a tendency for benefactive applicatives to be obligatory (i.e. to lack any non-applicative plausible paraphrase), Shibatani separates benefactive applicatives from other applicatives and claims that they are grounded in different cognitive schemata.

Benefactive applicatives (or as Shibatani calls them, simply benefactives, since they are not applicatives for him) are based on the schema of what he calls 'give' constructions. In essence, since 'giving' typically involves a recipient and an item which is transferred into the possession of the recipient, Shibatani claims intransitive situations (in which no item is transferred into the recipient's possession) are difficult to construe in terms of the

benefactive schema. According to this account, then, languages differ in the degree to which they allow construal of intransitive events in terms of the benefactive schema, and so the potential for benefactives to occur with intransitives differs accordingly. The approach is supported by the tendency for benefactives to arise from grammaticalization of the verb 'to give'.

Other applicative constructions are assumed to be based on a 'transitive' prototype. Shibatani has nothing detailed to say about such constructions, however.

6.6. Conclusion.

While I have mentioned in passing a functional account of the fact that intransitives may not serve as the base verb for an applicative construction (section 2.5), I do not believe that the quantity of data in this area has reached a level where it is possible to formulate a definitive account, in strictly synchronic terms or otherwise. If it is the case that in some languages intransitives may occur in applicative constructions only if they are unergative, then it is likely that the real restriction involved is a semantic one: for there to be a beneficiary, there must be an agent who consciously wants the beneficiary to benefit, and this conscious nature of the event on the part of the agent excludes the possibility of actions which are involuntary in the way unaccusatives typically are. Speakers of languages which allow applicative constructions to be formed on unaccusatives must then conventionally assume that a certain degree of volition may be exhibited by an agent even in propotypically involuntary situations. (Note that this would also probably explain the observation of Baker 1985 and 1988a that it is frequently if not universally the case that languages disallow passivized verbs as input for applicative constructions–a passive subject is not sufficiently voluntary to act as a benefactor.)

Next, I have suggested that the distribution of object properties may be accounted for largely in terms of historical factors. Applicative objects display object properties because historically they were objects, either of serialized or subordinate verbs or of adpositions which grammaticalized as markers of applicative constructions. Whether or not

an object associated with the non-derived verb (the base object) displays object properties or not also depends on historical developments. It is fully reasonable for both the objects of an applicative construction to display object properties, since both of them were full-fledged objects historically. However, animacy-driven developments have led in some cases to the exclusion of one object from some or all object properties, as in the case of the Bantu asymmetrical languages. It remains to be seen whether or not historical explanations of this sort may be made to work for the distribution of object properties in other applicative construction types; however, work in this area will have to wait for more detailed descriptions of object properties in several related languages' applicative systems (e.g. in Bantu locative applicative constructions marked by the etymological applicative marker).

While the historical study of applicative constructions is able to account for some of the main features of applicative constructions which synchronic theories have been able to account for, the main focus of this study has been on two aspects of their synchrony which have received little attention in the synchronic literature: the discourse functions and typology of applicative constructions.

With regard to discourse function, the text-based study of Haka Lai and Wolof applicative constructions has revealed that in all cases, applicative constructions facilitate the pronominalization of applicative objects. Prototypically animate objects, such as beneficiaries (and others in the case of Haka Lai), show a higher degree of topic continuity and topicworthiness than do patient and oblique objects; applicative constructions with objects of this sort are not used to give them access to constructions which they would otherwise not have access to (e.g. relativization, topicalization) with any frequency, however. Prototypically inanimate applicative objects, on the other hand, such as instruments and locatives, do not have a substantially higher degree of topic continuity or topicworthiness; the applicative constructions which they occur in do occur with constructions of limited accessibility with some frequency, though. Thus, while both

applicative constructions which do and do not have animate applicative objects tend to involve pronominalization of their objects, those with animates appear to have indication of a highly topical object as their primary functional motivation, and those with inanimates appear to have granting accessibility to other constructions as a greater functional motivation.

With regard to typology, it has been shown that applicative systems in general and particular applicative types do not correlate with a number of major typological features, such as head and dependent marking and word order. There may be a tendency for them to occur in conjunction with ergative alignment with greater frequency than languages without them do, and there is a tendency for them to also have causative constructions. Systems with several applicative constructions were demonstrated to cluster around two poles, benefactives and instrumental/comitatives.

How the discourse-functional and typological findings of this study will be of use to the development of purely synchronic theory remains to be seen. However, these results, together with the observations made here concerning the diachrony of applicative constructions, form the basis for a coherent explanation of how and why applicative constructions develop, what speakers use them for synchronically, and why they have the synchronic characteristics they do.

Appendix 1. Procedure for evaluation of participant discourse status.

In this appendix, I illustrate in detail the procedure used to evaluate the topic continuity and the topicworthiness properties of participants in narrative discourse as discussed in Chapter 3. A text in Haka Lai, 'The lazy bachelor,' is examined for this purpose.

The participants evaluated for the characteristics discussed in Chapter 3 were either objects or obliques. Because they were often difficult to assess for several of these characteristics, and because their presence would simply inflate the differences between oblique and non-oblique objects (which nevertheless are extreme), certain oblique types were not evaluated. These include clearly adverbial entities like bare temporal adjuncts and adverbial phrases formally marked by the ablative/instrumental adposition, highly general temporal obliques (e.g. 'then' and 'long ago'), headless locative and temporal relative clauses (e.g. 'when he was eating', 'where he went to'), and formally oblique complements (e.g. purposive clauses).

In what follows, I present a sentence from the text with finite clause boundaries marked by brackets and subordinate clause boundaries marked by angled brackets. For each evaluated participant, I then give a summary and some discussion of the evaluations for each characteristic; subscript numerals corresponding to evaluation matrices are placed either following an agreement marker, following a case particle attached to the noun, or (in the case of a complex NP) on the head noun itself. For the first five sentences of the text, I give a fairly detailed discussion; after the fifth sentence, I simply give the sentences and a summary of the corresponding participant evaluations.

Sentence 1.

[ʔa-hlaan-liaw-pii=ʔaʔ		<tsoŋ-tee	khua	ʔan-Ø-tii-mii>=ʔaʔ$_1$
3S POSS-before-PROG-AUG=LOC		name	village	3PS-3SO-call-REL=LOC

khan	<ʔa-thaa	ʔa-thuu-ŋaay-mii>[1]	tlaŋvalpaa	pakhat
DEIC	3S POSS-nerve	3SS-lazy-very-REL	bachelor	one

ʔa-ʔum=ʔii]	[zay-rian-hmaʔn	hii	Tuan	ʔa-huam-bal-law]
3SS-exist=and	any-work-any	DEIC	do	3SS-want-EXPER PERF-NEG

'Long ago, there lived a lazy bachelor in a village called Tsongtee, and he never wanted to do any work.'

The object participants of the first main clause include the obliques setting the time and place for the narrative. The name of the village, though grammatically an object in a relative clause internal to the main clause, is not evaluated since it is difficult to establish its thematic status. The temporal oblique is not evaluated as if fits into the class of highly general temporal obliques which were ignored. The only other object in the two clauses is 'any work', which is non-referential, and therefore is not evaluated. The following is the evaluation for the locative oblique:

---

[1] Like most Tibeto-Burman languages, Haka Lai has a large number of highly idiomatic noun-verb collocations in which the noun is a body part and the entire collocation expresses some psychological state. This is one such collocation.

in a village called Tsongtee₁
referential distance: 20
topic persistence: 0
animate: 0
pronominal: 0
specific: 1
identifiable: 0
proper: 1
status: 0
long: 1

The locative oblique likewise has a referential distance of twenty since it is mentioned here for the first time, and a topic persistence of zero, since it does not appear again in the next clause (or anywhere in the remaining text). While it is inanimate and non-pronominal, it is specific. It is not identifiable (since a listener would not be able to identify it), it is proper, and its status is inactive (since this is its first mention in the text). It is long, since it contains a considerable amount of phonetic material. As can be seen here, a 1 indicates that a given participant has a particular topicworthiness property, and a 0 indicates that it does not.

Sentence 2.

[voy-khat	tsuu	ʔa-nuu=niʔ		"[ka-fapaa	<[hii-tii=ʔii
time-one	DEIC	3S POSS-mother=ERG		1S POSS-son	thus

na-til₂		naa-deʔ-soʔ=ʔii]	[ʔin=ʔii₃	na-ʔum-soʔ-kaw]>
2S POSS-thing		2SS REFL-play-=and	house=LOC	2SS-exist-ʔ-AFFIRM

hii	tsuu	<ʔa-Thaa-law-mii>		ʔa-sii]
DEIC	DEIC	3SS-good-NEG-NOMLZR		3SS-be

[tsuutsaaʔaʔtsun	naŋmaʔ	<na-taŋ-kaay-naak
so	2S PRON	2S POSS-try-climb-NOMLZR

tsaa	diŋ=ʔaʔ	hin>	khua₄	daŋ=ʔaʔ	vaa-tlooŋ-loo]
sake	PURP=LOC	DEIC	village	other=LOC	go-travel-HORT

[tsutsuu	ʔa-Thaa-biik–laay]"		tiaʔ	ʔa-Øₗ-tii]
this	3SS-good-SUPERLAT-FUT		QUOT	3SS-3SO-say

'One day his mother said to him, "My son, your constantly hanging around the house playing with yourself is not a good thing. So in order for you to make something of yourself, go travel to a different village. This will be the best thing."'

In this sentence, the lazy bachelor is the recipient object of the verb of speaking (which comes at the very end of the sentence), and has the evaluation

bachelor$_1$
referential distance:	1
topic persistence:	20 (treated as maximum of 10)
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

Sentence two actually contains several (directly quoted) clauses internal to the one in which the lazy bachelor is a recipient object, and the only overt mention of the bachelor is the (zero) object-marking in the last word of the sentence. It is assumed, however, that the inclusion of speech in itself constitutes a kind of mention of the speaker and the recipient referents, so that although the formal indication of the recipient object actually has two intervening clauses between it and its previous overt mention (in the first clause of directly quoted material), there is no break in topic continuity, and so the referential distance of this object is evaluated as 1. The bachelor is animate, pronominal, specific, identifiable, his status is active, and the expression of this participant (zero) is certainly not long. The bachelor is evaluated as proper throughout; in many cases characters in stories are not assigned names, but their importance in the narrative is on a par with those of characters who would otherwise have proper names.

Internal to the quote, the reflexive object of the verb 'play' (=the bachelor) in the first clause is not evaluated since its thematic status is unclear. The bachelor's 'thing' is given the evaluation

your thing$_2$
referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	0
proper:	0
status:	0
long:	1

The locative of the next clause is given the evaluation

in the house$_3$
referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	0
proper:	0
status:	0
long:	1

Since the house is mentioned for the first time here, it has a referential distance of 20, and it is regarded as unidentifiable and inactive (status=0).

'Another village' in the following clause is evaluated

another village₄
referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	0
identifiable:	
proper:	
status:	
long:	1

Sentence 3.

[ʔa-fapaa=niʔ	tsun	"[ʔasiineelee	ka-kal-kaw-nee-laay-teʔ]"
3SS-son=ERG	DEIC	if.that's.so	1SS-go-AFFIRM-EVAL-FUT-EVAL

ʔa-∅₁-tii=ʔii]	[ʔa-nuu=niʔ		tsun	tshuuntsoo₂
3SS-3SO-say=and	3S POSS-mother=ERG		DEIC	lunch

ʔa-fuʔn=ʔii]	[<kho-daŋ	tloon	diŋ>=ʔaʔ	tsun	ʔaa-thoʔ]]
3SS-pack=and	village-other	travel	PURP=LOC	DEIC	3S REFL-begin

'Her son said, "If that's so, I'll certainly go," and his mother packed him a lunch, and he set off travelling.'

In this sentence there are only two evaluated objects, the mother, who is the recipient object of the verb 'to say' in the first clause (represented by a zero pronominal), and 'lunch' in the second clause. They are evaluated as follows:

mother₁
referential distance:	1
topic persistence:	1
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

lunch₂
referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	0
proper:	0
status:	0
long:	1

The mother was mentioned in the immediately preceding clause (as the subject of the verb 'to say' in sentence two), so she is given a one for referential distance; she is mentioned in the following clause (as the subject of the verb 'to pack'), but does not appear in the last clause of sentence three, so her topic persistence is only 1. The lunch is mentioned for the first time here (giving it a referential distance of 20 and identifiability and status ratings of 0), and although it appears later in the text, it does not appear in the last clause of this sentence, and so gets a topic persistence evaluation of 0 in this instance.

Sentence 4.

[[ʔa-fapaa	tsuu	[<khual	ʔa-tloon-naakɔ=ʔaʔ	tsun	tshuun=ʔaʔ₁
3S POSS-son	DEIC	guest	3SS-travel-REL=LOC	DEIC	noon=LOC

khan	ʔa-thaa	ʔa-baa-ŋaay=ʔii]	[thiŋkuŋ	taŋ=ʔaʔ₂
DEIC	3SS-nerve	3SS-tired-very=and	tree	under=LOC

ʔaa-diin=ʔii]	[ʔa-tshuuntsoo₃	tsuu	ʔa-Ø₃-saʔ=ʔii]
3SS REFL-rest=and	3SS-lunch	DEIC	3SS-3SO-open=and

[ʔa-Ø₄-ʔay]]
3SS-3SO-eat

'Her son, where he travelled to, at noon, was very tired, and he sat under a tree and rested and opened his lunch and ate it.'

The entity 'guest' in the first clause of this sentence may be formally an object, but at least in synchronic terms it is part of an idiom (with the cooccurring verbal root) and so is not evaluated. The temporal oblique of the first clause is evaluated as below.

noon₁
referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	1
status:	0
long:	1

'Noon' is inherently definite, and probably would be considered to be similar to personal names in terms of properness.

In the next clause, the reflexive argument (=the bachelor) is not evaluated since the verb 'rest' in Lai is a middle-voice verb requiring reflexive marking (see Yamashita Smith 1998); that is, the marking here does not reflect a separate semantic entity. 'Under' is a relational noun possessed by 'tree'. It is evaluated as follows:

<u>under a tree₂</u>

referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

In general, relational nouns are regarded as identifiable since a listener would know that, for instance, trees may have a space underneath them.

Finally, lunch' occurs as an object in the last two clauses. It is evaluated first as

<u>lunch₃</u>

referential distance:	4
topic persistence:	3
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	1
long:	1

The most recent mention of the lunch was four clauses earlier, in sentence three. I do not count intervening subordinate clauses in evaluating this figure. Below, it will be seen that the 'lunch' figures as an participant in the following three clauses.

The second occurrence of 'lunch' is evaluated as

<u>lunch₄</u>

referential distance:	1
topic persistence:	2
animate:	0
pronominal:	1
specific:	1
identifiable:	1
proper:	0
status:	1
long:	0

Note that in this case, the referential distance reflects the more recent occurrence of the participant, the topic persistence decreases, and the status of the participant with respect to the properties pronominal and long has changed.

Sentence 5.

[ʔi-tsuu	ʔa-tshuuntsoo₁	ʔa-∅₁-saʔ=ʔii]	[<ʔa-∅₂-ʔay-liaw>=ʔaʔ
so	3S POSS-lunch	3SS-3SO-open=and	3SS-3SO-eat-PROG=LOC

tsun	thawpoo	tampii=niʔ	khan	ʔa-tsuuntsoo₂	tsuu
DEIC	flies	many=ERG	DEIC	3S POSS-lunch	DEIC

ʔan-∅₂-rak-buut-tsiammaam=ʔii] [<zaytii   tuaʔ-ʔook>
3PS-3SO-come-swarm-MIM=and   what   do-COMP

ʔa-thay-law=ʔii]   [tlaŋvaalpaa=niʔ   tsun   ʔa-taaysoom₃ khaa
3SS-know-NEG=and   bachelor=ERG   DEIC   3S POSS-belt DEIC

ʔaa₄-phoʔy-riaŋmaaŋ=ʔii]   [taaysoom₅   tsun   thawpoo-pool₆
3SS REFL-remove-MIM=and   belt   DEIC   fly-COLL

tsuu   ʔa-∅₆-tuk-hnaa₆]
DEIC   3SS-3SO-hit-PL OBJ

'So he opened his lunch, and while he was eating it, lots of flies came and swarmed around his lunch, and he didn't know what to do, and the bachelor whipped off his belt and hit the flies with the belt.'

This sentence again has 'lunch' as an object participant in its first clause, which is given the evaluation

lunch₁
referential distance: 1
topic persistence: 1
animate: 0
pronominal: 0
specific: 1
identifiable: 1
proper: 0
status: 1
long: 1

In the second clause 'lunch' occurs again as the object of the finite clause and of a subordinate clause included within the finite clause, and here it has the evaluation

lunch₂
referential distance: 1
topic persistence: 0
animate: 0
pronominal: 0
specific: 1
identifiable: 1
proper: 0
status: 1
long: 0

The occurrence of the participant internal to the subordinate clause is not separately evaluated since it is itself internal to a finite clause in which the participant (the lunch) also occurs. How the subordinate clause in the second finite clause of the sentence is to be evaluated with respect to the metrics used here, as mentioned earlier, is unclear, so it is not evaluated.

There is no object in the third finite clause; the object of the next finite clause is the bachelor's belt, which is evaluated as

belt₃
referential distance: 20
topic persistence: 1
animate: 0
pronominal: 0
specific: 1
identifiable: 0
proper: 0
status: 0
long: 1

The reflexive nature of the subject agreement refers to the bachelor, and is evaluated as below.

bachelor₄
referential distance: 1
topic persistence: 9
animate: 1
pronominal: 1
specific: 1
identifiable: 1
proper: 1
status: 1
long: 0

In the final finite clause of the sentence, there is an instrumental object, belt, and the flies are a patient object:

belt₅
referential distance: 1
topic persistence: 0
animate: 0
pronominal: 0
specific: 1
identifiable: 1
proper: 0
status: 1
long: 1

flies₆
referential distance: 3
topic persistence: 1
animate: 0
pronominal: 0
specific: 1
identifiable: 1
proper: 0
status: 1
long: 1

Sentence 6.

[ʔii	thawpoo₁	pa-sariʔ	khaa	ʔa-Ø₁-thaʔ-hnaa₁=ʔii]
and	flies	CLASS-seven	DEIC	3SS-3SO-kill-PL OBJ

[ʔa-luŋ	ʔa-hmuy-tuk=ʔii]		[ʔa-taaysom=ʔaʔ₂	tsun
3S POSS-heart	3SS-fragrant-very=and		3S POSS-belt=LOC	DEIC

"voy-khat	tuk=ʔaʔ	pa-sariʔ"	tiaʔ	ʔa-Tial]
CLASS-one	blow=LOC	CLASS-seven	QUOT	3SS-write

'And he killed seven flies, and he was very happy and wrote on his belt, "Seven in one blow."'

<u>seven flies₁</u>		<u>on his belt₂</u>	
referential distance:	1	referential distance:	3
topic persistence:	0	topic persistence:	0
animate:	0	animate:	0
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	0	proper:	0
status:	1	status:	1
long:	1	long:	1

Sentence 7.

[ʔii	kual	ʔa-tlooŋ=ʔii]		[tsun	khua₁		pa-khat
and	guest	3SS-travel=and		then	village		CLASS-one

ʔa-va-Ø₁-phaan=ʔii]	[tsuu	khua=ʔaʔ₂	tsun	<mii₃
3SS-go-3SO-reach=and	DEIC	village=LOC	DEIC	people

ʔa-Ø₃-zaʔw-tik-hnaa₃>=ʔaʔ	hin	mii-pool	hii
3SS-3SO-look-time-PL OBJ=LOC	DEIC	people-COLL	DEIC

hmaay-tshia-ferfur-pii=ʔin	ʔan-ʔum=ʔii]	[<"[zay-ruaŋ=ʔaʔ=daʔ
face-bad-MIM-AUG=ADV	3PS-exist=and	what-reason=LOC=QUEST

hiitiihin	hmaay-tshia-ferfur-pii		hin	nan-ʔum]"	tiaʔ
thus	face-bad-MIM-AUG		DEIC	2PS-exist	QUOT

ʔa-Ø₄-hal-tik=hnaa>=ʔaʔ	"[ʔaa	kan-kho-luu=ʔaʔ₅		hin
3SS-3SO-ask-time=PL OBJ=LOC	INTERJ	1P POSS-village-head=LOC		DEIC

ruul-ŋan-pii	pa-khat	ʔa-ʔum=ʔii]	[tsuu	ruul=niʔ
snake-big-AUG	CLASS-one	3SS-exist=and	DEIC	snake=ERG

tsun	kan-saʔTil₆	hii	nii-khat=ʔaʔ	pa-khat=ʔin
DEIC	1P POSS-livestock	DEIC	day-one=LOC	CLASS-one=ABL

ʔa-kan₇-ʔay-piak-leeŋmaaŋ=ʔii]   [<ʔa-kan₈-ʔay-piak   looŋ   sii-law=ʔin>
3SS-1PO-eat-MAL-CONTIN-and   3SS-1PO-eat-MAL   only   be-NEG=ADV

<kanmaʔ   hrimhrim=niʔ   hin   kan-va-∅₉-peek>   ʔa-haw]
1P PRON   no.other=ERG   DEIC   1PS-go-3SO-give   3SS-necessary

[ʔatuu   tsuu   <kan-saʔTil   ʔa-diʔ>   hin   tsun
now   DEIC   1S POSS-livestock   3SS-finish   DEIC   DEIC

miinuŋ-pool₁₀   khaa   ʔa-kan₁₀-ʔay-tsaŋ-laay]   [tsuutsaaʔaʔtsun
human-COLL   DEIC   3SS-1SO-eat-PERF-FUT   therefore

kan-ŋaʔy   ʔa-tshia=ʔii]   [<hiitiihin   kan-hmaay   hii
1S POSS-listening   3SS-bad=and   thus   1P POSS-face   DEIC

ʔa-tshiat-naak>   ʔa-sii]"   tiaʔ   ʔan-∅₁₁-tshiʔm]
3SS-bad-NOMLZR   3SS-be   QUOT   3PS-3SO-tell

'And he travelled, and then he reached a village, and in this village, when he looked at the people, they had sad faces, and when he asked them, "Why do you have sad faces?' they told him, "Ah, above our village there is a great serpent, and from one day to the next, this serpent is eating our cattle, and it's not just that it's eating them, but we ourselves have to give them to it. Now, our cattle supply is running out, and it's going to start eating us human beings. Therefore, we're unhappy, and this is the reason for our faces being sad."'

a village₁		village₂	
referential distance:	20	referential distance:	1
topic persistence:	1	topic persistence:	0
animate:	0	animate:	0
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	0	identifiable:	1
proper:	0	proper:	0
status:	0	status:	1
long:	1	long:	1

people₃		people₄	
referential distance:	20	referential distance:	1
topic persistence:	10	topic persistence:	9
animate:	1	animate:	1
pronominal:	0	pronominal:	1
specific:	1	specific:	1
identifiable:	0	identifiable:	1
proper:	0	proper:	0
status:	0	status:	1
long:	1	long:	0

village top$_5$

referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

livestock$_6$

referential distance:	20
topic persistence:	3
animate:	0
pronominal:	0
specific:	1
identifiable:	0
proper:	0
status:	0
long:	1

people$_7$[2]

referential distance:	1
topic persistence:	9
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	0
status:	1
long:	0

people$_8$

referential distance:	1
topic persistence:	9
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	0
status:	1
long:	0

serpent$_9$

referential distance:	1
topic persistence:	1
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

us humans$_{10}$

referential distance:	1
topic persistence:	9
animate:	1
pronominal:	0
specific:	1
identifiable:	1
proper:	1
status:	1
long:	1

bachelor$_{11}$

referential distance:	1
topic persistence:	1
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

Sentence 8.

[tsuu	tik=ʔaʔ	tsun	ʔa-taaysoom$_2$	khaa	ʔan-von-$\varnothing_2$-zaʔw=ʔii]
DEIC	time=LOC	DEIC	3S POSS-belt	DEIC	3PS-DIREC-3SO-look=and

---

2   It will be noted that the assessment of people here and in the next instance is identical in all respects to the previous assessment of the same participant. Since the people are the object of a verb of speaking here, it is assumed that they are simply activated for the entire speech event, and they have the same assessment throughout.

[<ʔan-∅-hmuʔ-mii>   tsuu   "voy-khat   tuk=ʔaʔ   pa-sariʔ"   tii
3PS-3SO-see-REL   DEIC   CLASS-one   blow=LOC   CLASS-seven say

khaa   ʔa-sii=ʔii]   [ʔan-luŋ   ʔa-loom-ŋaayŋaay=ʔii]
DEIC   3SS-be=and   3P POSS-heart   3SS-happy-very=and

["[ʔaa   hii   paa=niʔ   hin   hii   ruul-pii₂   hin
INTERJ   DEIC   person=ERG   DEIC   DEIC   snake-AUG   DEIC

ʔa-kan₃-khaʔm-khoʔ-laay]"   tiaʔ   ʔan-zuʔm]
3SS-1PO-save-POT-FUT   QUOT   3PS-believe

'At that point, they saw his belt, and what they saw was "Seven in one blow," and they were very happy, and they believed, "Ah, this person can save us from that serpent."'

his belt₁		from that serpent₂	
referential distance:	6	referential distance:	7
topic persistence:	0	topic persistence:	1
animate:	0	animate:	1
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	0	proper:	1
status:	0	status:	s
long:	1	long:	1

people₃	
referential distance:	1
topic persistence:	5
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	0
status:	1
long:	0

Sentence 9.

["[ʔasiineelee   khaʔ   <hii   ruul-pii=ʔin₁   na-kan₂-khaʔm-khoʔ
if.that's.so   INTERJ   DEIC   snake-AUG=ABL   2SS-1PO-save-POT

ʔasiiʔaʔtsun>   kan-siaŋpahraaŋpaa   fanuu₃   hii
COND   1P POSS-king   daughter   DEIC

kan-ʔin₄-Thiit-ter-laay]"   tiaʔ   ʔan-Ø₅-tii]
1PS-2SO-marry-CAUS-FUT   QUOT   3PS-3SO-say

'They said to him, "If that's the case, hey, if you can save us from this serpent, we'll let you marry our king's daughter."'

from that serpent₁
referential distance:	1
topic persistence:	0
animate:	1
pronominal:	0
specific:	1
identifiable:	1
proper:	1
status:	1
long:	1

people₂
referential distance:	1
topic persistence:	4
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	0
status:	1
long:	0

king's daughter₃
referential distance:	20
topic persistence:	0
animate:	1
pronominal:	0
specific:	1
identifiable:	0
proper:	0
status:	0
long:	1

bachelor₄
referential distance:	1
topic persistence:	3
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

bachelor₅
referential distance:	1
topic persistence:	3
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

Sentence 10.

[ʔii	"[ʔasiineelee	toolreekuuŋ₁	tampii=ʔin	rak-ka₂-pee-ʔuʔ]"
and	if.that's.so	plant.sp.	much=ADV	VENIT-1SO-give-IMP

tiaʔ	ʔa-Ø₃-hal-hnaa₃=ʔii]		[tsuu	thaa-thuu-paa	sin=ʔaʔ₄
QUOT	3sS-3sO-ask-PL OBJ-and		DEIC	nerve-stink-man	vicinity=LOC

tsun	khua-mii-pool=niʔ		khan	toolreekuuŋ₅	khaa	tampii
DEIC	village-person-COLL=ERG		DEIC	plant.sp	DEIC	much

?an-∅5-rak-put]
3PS-3SO-VENIT-carry

'And he asked them, "If that's the case, bring me lots of toolreekuung," and the villagers brought to that lazy fellow lots of toolreekuung.'

<table>
<tr><td colspan="2"><u>plant1</u></td><td colspan="2"><u>bachelor2</u></td></tr>
<tr><td>referential distance:</td><td>20</td><td>referential distance:</td><td>1</td></tr>
<tr><td>topic persistence:</td><td>1</td><td>topic persistence:</td><td>1</td></tr>
<tr><td>animate:</td><td>0</td><td>animate:</td><td>1</td></tr>
<tr><td>pronominal:</td><td>0</td><td>pronominal:</td><td>1</td></tr>
<tr><td>specific:</td><td>1</td><td>specific:</td><td>1</td></tr>
<tr><td>identifiable:</td><td>0</td><td>identifiable:</td><td>1</td></tr>
<tr><td>proper:</td><td>0</td><td>proper:</td><td>1</td></tr>
<tr><td>status:</td><td>0</td><td>status:</td><td>1</td></tr>
<tr><td>long:</td><td>1</td><td>long:</td><td>0</td></tr>
</table>

<u>people3</u>		<u>to bachelor's vicinity4</u>	
referential distance:	1	referential distance:	20
topic persistence:	3	topic persistence:	0
animate:	1	animate:	0
pronominal:	1	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	0	proper:	0
status:	1	status:	0
long:	0	long:	1

<u>plant5</u>
referential distance: 1
topic persistence: 0
animate: 0
pronominal: 0
specific: 1
identifiable: 1
proper: 0
status: 1
long: 1

Sentence 11.

[tsun   "[mehe?1   pa-khat   rak-ka2-pee-?u?]"
then   goat   CLASS-one   VENIT-1SO-give-IMP

?a-∅3-tii-hnaa3=?ii]   [mehe?4   zoŋ   tsuu   ?an-∅4-rak-put]]
3SS-3SO-say-PL OBJ=and   goat   also   DEIC   3PS-3SO-VENIT-carry

'Then he said to them, "Give me a goat," and they brought a goat as well.'

goat₁
referential distance: 20
topic persistence: 3
animate: 0
pronominal: 0
specific: 1
identifiable: 0
proper: 0
status: 0
long: 1

bachelor₂
referential distance: 1
topic persistence: 0
animate: 1
pronominal: 1
specific: 1
identifiable: 1
proper: 1
status: 1
long: 0

people₃
referential distance: 1
topic persistence: 1
animate: 1
pronominal: 1
specific: 1
identifiable: 1
proper: 0
status: 1
long: 0

goat₄
referential distance: 1
topic persistence: 2
animate: 0
pronominal: 0
specific: 1
identifiable: 1
proper: 0
status: 1
long: 1

Sentence 12.

[ʔii   meheʔ₁   tsuu   ʔa-Ø₁-thaʔ=ʔii]   [ʔa-poo₂   khaa
and   goat   DEIC   3SS-3SO-kill=and   3S POSS-stomach   DEIC

ʔa-Ø₂-hlaay=ʔii]   [toolreekuuŋ₃   tsuu   ʔa-Ø₃-phoʔm]
3SS-3SO-take.out=and   plant.sp   DEIC   3SS-3SO-pound

[ʔa-Ø₃-phoʔm]   [ʔa-Ø₃-phoʔm-hnaa₃=ʔii]   [meheʔ   poo
3SS-3SO-pound   3SS-3SO-pound-PL OBJ=and   goat   stomach

tshuŋ=ʔaʔ₄   tsun   ʔa-Ø₅-khuʔm]
inside=LOC   DEIC   3SS-3SO-insert

'And he killed the goat and took out its stomach and pounded and pounded and pounded the toolreekuung and put it inside the goat's stomach.

goat₁
referential distance: 1
topic persistence: 1
animate: 0
pronominal: 0
specific: 1
identifiable: 1
proper: 0
status: 1
long: 1

stomach₂
referential distance: 20
topic persistence: 0
animate: 0
pronominal: 0
specific: 1
identifiable: 0
proper: 0
status: 0
long: 1

plant₃		into the goat's stomach₄	
referential distance:	5	referential distance:	2
topic persistence:	1	topic persistence:	1
animate:	0	animate:	0
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	0	proper:	0
status:	1	status:	1
long:	1	long:	1

plant₅	
referential distance:	1
topic persistence:	0
animate:	0
pronominal:	1
specific:	1
identifiable:	1
proper:	0
status:	1
long:	0

Sentence 13.

[tsun	ʔa-va-kal=ʔii]	[ruul-pii₁	tsuu	"[khaa,	nii	hin
then	3SS-ANDAT-go=and	snake-AUG	DEIC	INTERJ	day	DEIC

na-rool	tsuu	<ʔa-thoo-taktak-mii>	ʔa-sii]	[meheʔ₂	bak
3S POSS-meal	DEIC	3SS-tasty-very-REL	3SS-be	goat	indeed

ka-rak-∅₂-put-hiʔ]"	tiaʔ	ʔa-va-∅₁-peek]
1SS-VENIT-3SO-carry-EVAL	QUOT	3SS-ANDAT-3SO-give

'Then he went and saying to the serpent, "Ahh, today your meal is a very tasty thing. I've brought none other than goat!" he gave it to him.'

serpent₁		goat₂	
referential distance:	10	referential distance:	2
topic persistence:	8	topic persistence:	3
animate:	1	animate:	0
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	1	proper:	0
status:	0	status:	1
long:	1	long:	1

Sentence 14.

[<ruul-pii=niʔ	tsun	"[ziaʔ	na-meheʔ	poo	tsuu
snake-AUG=ERG	DEIC	why	2S POSS-goat	stomach	DEIC

Ɂa-puar-kaw-Ɂee]"   tiaɁ   khan   Ɂa-Ø₁-hal-tik>=ɁaɁ   thaa-thuu
3SS-swell-AFFIRM-EVAL   QUOT   DEIC   3SS-3SO-ask-time=LOC   nerve-stink

tlaŋvalpaa=niɁ   khan   "[Ɂaa   Ɂa-tshuŋ=ɁaɁ₂   hin   vay
bachelor=ERG   DEIC   INTERJ   3S POSS-inside=LOC   DEIC   uh

faaŋbuɁ=lee₃   <Ɂa-thoo   Ɂa-thoo-mii>   thil₃   pay
cooked.rice=and   3SS-tasty   3SS-tasty-REL   thing   just

ka-rak-Ø₃-saɁn-tsuu]"   Ɂa-Ø₄-tii=Ɂii]   [ruul-pii₅   tsuu
3SS-VENIT-3SO-stuff-EVAL   3SS-3SO-say=and   snake-AUG   DEIC

toolree-meheɁ₆   khaa   Ɂa-Ø₅-peek]
plant-goat   DEIC   3SS-3SO-give

'When the snake asked him, "Why does your goat's stomach swell so?" the lazy
bachelor said to him, "Ah, I've just stuffed it inside with cooked rice and tasty,
tasty things," and he gave the plant-goat to the snake.'

bachelor₁
referential distance:	1
topic persistence:	1
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

inside₂
referential distance:	4
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	1
long:	1

cooked rice, tasty things₃
referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	0
proper:	0
status:	0
long:	1

serpent₄
referential distance:	1
topic persistence:	8
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

serpent₅
referential distance:	1
topic persistence:	7
animate:	1
pronominal:	0
specific:	1
identifiable:	1
proper:	1
status:	1
long:	1

plant-goat₆
referential distance:	1
topic persistence:	1
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	1
long:	1

Sentence 15.

[ʔii	<ruul-pii=ni?	khan	toolree₁	khaa	
and	snake-AUG=ERG	DEIC	plant.sp	DEIC	

ʔa-Ø₁-ʔay-tik>=ʔa?	khan	ʔa-poo	khaa	ʔa-faak-tuk=ʔii]	
3SS-3SO-eat-time=LOC	DEIC	3S POSS-stomach	DEIC	3SS-hurt-very=and	

[<zaytii	tuaʔ-ʔook>	ʔa-thay-law=ʔii]	[<"[hitluk	ka-poo	
what	do-COMP	3SS-know-NEG=and	thus	1S POSS-stomach	

ʔa-faʔ-mii	hii	zaytin=da?	ka-tuaʔ-laay]"	tia?	tlaaŋvaalpaa₂
3SS-hurt-NOMLZR	DEIC	how=QUEST	1SS-do-FUT	QUOT	bachelor

khaa	ʔa-Ø₂-hal-tik>=ʔa?	"[ʔaa	na-luu₃	khaa	
DEIC	3SS-3SO-ask-time=LOC	INTERJ	2S POSS-head	DEIC	

thinluaŋ	tsuŋ=ʔaʔ₄	rak-Ø₃-tshia-loo]	[tsutsun	na-hŋooŋ₅	
log	top=LOC	VENIT=place-HORT	then	2S POSS-neck	

khaa	ka-ñ₆-hmeʔ-laay=ʔii]	[tsutsun	na-poo-fa?	
DEIC	1SS-2SO-massage-FUT=and	then	2S POSS-stomach-pain	

khaa	ʔa-dam-laay]"	tia?	tlaŋvaalpaa=ni?	khan	ʔa-Ø₇-tii]
DEIC	3SS-heal-FUT	QUOT	bachelor=ERG	DEIC	3SS-3SO-say

'And when the serpent ate the toolree, his stomach hurt terribly and he didn't know what to do, and when he asked the bachelor "My stomach hurting like this, what am I to do?" the bachelor said to him, "Ah, put your head on a log and then I'll massage your neck for you, and then your stomach ache will get better."'

plant₁			bachelor₂	
referential distance:	1		referential distance:	3
topic persistence:	0		topic persistence:	1
animate:	0		animate:	1
pronominal:	0		pronominal:	0
specific:	1		specific:	1
identifiable:	1		identifiable:	1
proper:	0		proper:	1
status:	1		status:	1
long:	1		long:	1

<u>serpent's head₃</u>

referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

<u>on top of log₄</u>

referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

<u>serpent's neck₅</u>

referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

<u>serpent₆</u>

referential distance:	1
topic persistence:	4
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

<u>serpent₇</u>

referential distance:	1
topic persistence:	4
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

Sentence 16.

[ʔii	ruul-pii=niʔ		tsun	"[ʔasiineelee	ka-luu₁	tsuu
and	snake-AUG=ERG		DEIC	if.that's.so	1S POSS-head	DEIC

thiŋluaŋ=ʔaʔ₂	tsun	ka-rak-Ø₁-tshiaʔ-laay]"	ʔa-Ø₃-tii=ʔii]
log=LOC	DEIC	1SS-VENIT-3SO-place-FUT	3SS-3SO-say=and

[thiŋluaŋ	tsuŋ=ʔaʔ₄	tsun	ʔa-luu₅	tsuu	ʔa-rak-Ø₅-tshiaʔ=ʔii]
log	top=LOC	DEIC	3S POSS-head	DEIC	3SS-VENIT-3SO-place=and

[ʔa-hŋooŋ₆	tsuu	ʔaa₇-hmeʔ-ter=ʔii]	[ʔa-naam₈
3S POSS-neck	DEIC	3SS REFL-massage-CAUS=and	3S POSS-knife

khaa	ʔaa₉-zuʔ-riaŋmaaŋ=ʔii]	[ʔa-luu₁₀	tsuu	tan-kaw=ʔin
DEIC	3SS REFL-remove-MIM=and	3S POSS-head	DEIC	sever-affirm-ADV

ʔa-Ø₁₁-tan]
3SS-3SO-sever

'And the serpent said to him, "If that's so, I'll put my head on a log," and he put his head on a log and let his neck be massaged, and he (the bachelor) pulled out his knife and severed his head.'

serpent's head$_1$		on a log$_2$	
referential distance:	1	referential distance:	1
topic persistence:	1	topic persistence:	0
animate:	0	animate:	0
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	0	proper:	0
status:	1	status:	1
long:	1	long:	1

bachelor$_3$		on a log$_4$	
referential distance:	1	referential distance:	1
topic persistence:	0	topic persistence:	0
animate:	1	animate:	0
pronominal:	1	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	1	proper:	0
status:	1	status:	1
long:	0	long:	1

serpent's head$_5$		serpent's neck$_6$	
referential distance:	1	referential distance:	3
topic persistence:	0	topic persistence:	0
animate:	0	animate:	0
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	0	proper:	0
status:	1	status:	1
long:	1	long:	1

serpent$_7$		bachelor's knife$_8$	
referential distance:	1	referential distance:	20
topic persistence:	0	topic persistence:	0
animate:	1	animate:	0
pronominal:	1	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	0
proper:	1	proper:	0
status:	1	status:	0
long:	0	long:	1

<u>bachelor9</u>   <u>serpent's head10</u>

referential distance:	2		referential distance:	3
topic persistence:	3		topic persistence:	2
animate:	1		animate:	0
pronominal:	1		pronominal:	0
specific:	1		specific:	1
identifiable:	1		identifiable:	1
proper:	1		proper:	0
status:	1		status:	1
long:	0		long:	1

<u>serpent11</u>

referential distance:	2
topic persistence:	2
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

Sentence 17.

| [ʔii | ʔa-luu₁ | tsuu | khua=ʔaʔ₂ | khan |
| and | 3S POSS-head | DEIC | village=LOC | DEIC |

| ʔa-vaa₃-tlun-pii=ʔii] | | [<siaŋpahraaŋpaa₄ | tsuu | ʔa-luu₅ |
| 3SS-ANDAT.REFL-return-COM=and | | king | DEIC | 3S POSS-head |

| khaa | ʔa-va-Ø₄-peek-tik>=ʔaʔ | | "[ʔaa | ka-biakaam |
| DEIC | 3SS-VENIT-3SO-give-time=LOC | | INTERJ | 1S POSS-promise |

| baŋ=ʔin | ka-fanuu₆ | | tsuu | ka-ñ₇-peek-kaw-laay]" | tiaʔ |
| like=ADV | 1S POSS-daughter | | DEIC | 1SS-2SO-give-AFFIRM-FUT | QUOT |

| ʔa-Ø₈-tii=ʔii] | | [ʔa-fanuu₉ | | khaa | ʔa-Ø₁₀-Thiit-ter] |
| 3SS-3SO-say=and | | 3S POSS-daughter | | DEIC | 3SS-3SO-marry-CAUS |

'And he brought his head back to the village with him, and when he gave his head to the king, he said to him, "Ah, in accordance with my promise, I will give you my daughter," and he let him marry his daughter.'

<u>serpent's head[1]</u>

referential distance:	1
topic persistence:	1
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	1
long:	1

<u>to the village[2]</u>

referential distance:	20
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

<u>bachelor[3]</u>

referential distance:	1
topic persistence:	2
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

<u>king[4]</u>

referential distance:	20
topic persistence:	3
animate:	1
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

<u>serpent's head[5]</u>

referential distance:	1
topic persistence:	0
animate:	0
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	1
long:	1

<u>king's daughter[6]</u>

referential distance:	20
topic persistence:	1
animate:	1
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	0
long:	1

<u>bachelor[7]</u>

referential distance:	1
topic persistence:	1
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

<u>bachelor[8]</u>

referential distance:	1
topic persistence:	1
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

<u>king's daughter[9]</u>

referential distance:	1
topic persistence:	0
animate:	1
pronominal:	0
specific:	1
identifiable:	1
proper:	0
status:	1
long:	1

<u>bachelor[10]</u>

referential distance:	1
topic persistence:	0
animate:	1
pronominal:	1
specific:	1
identifiable:	1
proper:	1
status:	1
long:	0

Sentence 18.

[ʔii	khaa	siaŋpahraaŋpaa	khaa	ʔa-tar-ŋaay-tsaŋ=ʔii]
and	DEIC	king	DEIC	3SS-old-very-PERF=and

[<ʔahmaay-kum=ʔii₁	ʔa-thiʔ-tik>=ʔaʔ	khan	khaa	paa₂	khaa
next-year=LOC	3SS-die-time=LOC	DEIC	DEIC	man	DEIC

siaŋpahraaŋ=ʔaʔ₃	tsun	ʔan-Ø₂-ser]
king=LOC	DEIC	3PS-3SO-make.into

'And that king had become very old, and when he died the next year, they made that man into the king.'

the next year₁		bachelor₂	
referential distance:	20	referential distance:	2
topic persistence:	0	topic persistence:	1
animate:	0	animate:	1
pronominal:	0	pronominal:	0
specific:	1	specific:	1
identifiable:	1	identifiable:	1
proper:	0	proper:	1
status:	0	status:	1
long:	1	long:	1

into the king₃	
referential distance:	20
topic persistence:	0
animate:	1
pronominal:	0
specific:	0
identifiable:	
proper:	
status:	
long:	1

Sentence 19.

[ʔii	<khaa	paa	siaŋpahraaŋ	ʔa-sii-tik>=ʔaʔ	khan	<khaa
and	DEIC	man	king	3SS-be-time=LOC	DEIC	DEIC

kaa	hrooŋ	khua	vialtee=ʔii₁	ʔan-Ø-tshim-mii>	tsuu
place	around	village	all=LOC	3PS-3SO-say-REL	DEIC

"thatthuu	kho-khat	siaŋpahraaŋ	kho-daŋ"	tiaʔ	ʔan-tii
lazy	village-one	king	village-other	QUOT	3PS-say

'And when that man was king, what they said in all the villages around that place was, "One village's lazy person is another one's king."'

<u>in all the villages</u>₁
referential distance: 20
topic persistence: 0
animate: 0
pronominal: 0
specific: 1
identifiable: 0
proper: 0
status: 0
long: 1

Sentence 20.

tsuu   vial=lee   ʔeŋ   zaa
DEIC   all=and   push enough

'The end.'

Appendix 2. Typological sample.

language	name	area	only ben	inan	gen	part	ben	mal	dat/goal	subst	com	all	abl	loc	inan?	inst	circ	genit	head	dep	mc	wo
1	Ainu	NEA		1		1			1		1	1	1	1	1	1			6	2	8	3
2	Alamblak	PNG	1			1	1												4	2	6	3
3	Amharic	AF		1		1	1	1	1					1		1			4	8	12	3
4	Awtuw	PNG	1				1												0	6	6	3
5	Caquinte	SA		1	1	1	1		1		1		1	1	1	1	1		8	0	8	2
6	Chichewa	AF		1	1		1	1		1	1			1	1	1	1		3	3	6	2
7	Chitimacha	NA	1				1												4	0	4	3
8	Choctaw	NA		1			1	?1		?1	1			1	1	1			8	4	12	3
9	Dyirbal	AU		1	1						1					1			0	8	8	3
10	Epena Pedee	SA		1												1			0	6	6	3
11	Eskimo	NA		1	1	1					1			1	1	1	1		8	7	15	3
12	Halkomelem	NA		1			1		1			1						1	6	1	7	1
13	Ika	SA		1	1	1	1		1			?1		1				1	4	4	8	3
14	Kalkatungu	AU		1	1	1	1		1					1		1	1		4	8	12	2 3
15	Kanuri	AF		1	1		1					1	1	1		1			6	4	10	3
16	Karok	NA		1					1							1			6	0	6	F
17	Kate	PNG	1			?1	1		1										8	5	13	3
18	Kharia	SEA	1				1												3	4	7	3
19	Lai	SEA		1			1	1		?	1	1	1			1	1		5	4	9	3
20	Maasai	AF		1	1		1		1		1			1	1	1	1		4	7	11	1
21	Mohawk	NA	1				1		1										6	0	6	F
22	Motuna	PNG		1	1		1	1	1				1		1			1	6	7	13	3
23	Mutsun	NA	1				1												1	4	5	
24	Nadëb	SA		1					1		1		1	1	1	1			0	1	1	3
25	Nama	AF					1		1		1								3	6	9	3
26	Namia	PNG		1							1					1			0	2	2	3
27	Nez Perce	NA		1			1				1	1	1						4	6	10	F
28	Ngalakan	AU			1	1	1				1								4	4	8	?2
29	Nunggubuyu	AU				1	1				1							1	5	9	14	F
30	Paumari	SA			1	1	1				1						1		4	5	9	1 2 3

228

language	name	area	only ben	inan gen	part	ben	mal	dat/goal	subst	com	all	abl	loc	inan?	inst	circ	genit	head	dep	mc	wo
31	Quechua	SA				1				1	1							6	5	11	3
32	Sandawe	AF				1	1				1							4	1	5	3
33	Secoya	SA	1			1												2	7	9	
34	Shasta	NA	1			1												3	2	5	
35	Shipibo	SA				1	1			1								0	6	6	3
36	Shoshone	NA	1			1												0	7	7	3
37	Takelma	NA		1		1		1		1				1				6	0	6	3
38	Tepehua	CA		1	1	1		1	1	1			1	1	1		1	7	1	8	2
39	Tukang Besi	SEA		1	1	1		1		1				1	1	1	1	5	4	9	1
40	Tzotzil	CA	1			1		1										6	0	6	1
41	Urubu-Kaapor	SA		1						1								3	6	9	3
42	Wintu	NA				1				1								3	6	9	
43	Wolof	AF		1	1	1						1	1	1				4	3	7	2
44	Yagua	SA		1	1					1						1		8	2	10	1
45	Yavapai	NA	1			1												5	4	9	3
46	Yawelmani	NA		1	1	1			1		1							0	6	6	6F
47	Yimas	PNG		1		1					1							6	2	8	8F
48	Yuchi	NA		1		1				?1			?1			1		8	0	8	3
49	Zoque	CA		1	1		1			1			?1				?1	6	5	11	?F
50	Zuni	NA	1	1		1		1		1	1		1					3	2	5	3

language	name	NA	PA	VA	domA	objA	rcH	rciH	rcvf	access	position	rcH	rciH	rcvf	access	positio	rcH	rciH	rcvf	access	position
1	Ainu	n	n	3	3	po	e	g	f	s	pre										
2	Alamblak	n	n	a	a	po	e	g	nf	not com, comp	pre										
3	Amharic	a	a	a	a	po/do	e	g	fwr	sao, io	pre	e	p	fwr	adp objs	pre					
4	Awtuw	a	a	n	a	po	e	g	fwr	any (-g)	pre	i	N	fwr	any (-g)	irr	e	p	fwr	any	pre
5	Caquinte	n	n	s	s		e	g	nf	sao	post										
6	Chichewa	n	n	a	a	po					post										
7	Chitimacha	e	n	a/s	e		e	g	f	sao, loc	post										
8	Choctaw	a	a	s	s		e	g	fwr	sao		i	N	fwr	sao	irr					
9	Dyirbal	e	a	n	e		e	g	nf	so	post										
10	Epena Pedee	e	e	n	e	do	i	N	nf	so, loc	irr										
11	Eskimo	e	e	3	e		e	g	nf	?s	post										
12	Halkomelem	n	n	e/a	e	po	e	g	f	?so	post										
13	Ika	e		a/s	e	po	i	N	nf	so, obl	irr										
14	Kalkatungu	e	e	a	e	po/do	e	g	fwr	so	post										
15	Kanuri	n	n	a	a	po/do	e	g/p	f	sao	post	e	p	f	obl						
16	Karok	n/e	n/e	a	?e																
17	Kate	e	e	a	e		e	g	fwr	sa	post	e	p	f	so	post					
18	Kharia	n	n	a	a																
19	Lai	e	e	a	e	po	e	g	fwr	sao	pre	i	N	fwr	o	irr					
20	Maasai	a		s	s		e	g	nf	sao (io)	post										
21	Mohawk	n	n	s	s	po	e	g	f/fwr	sao		i	p	f/fwr							
22	Motuna	e	e	?s	e		e	g	f/nf	any	post	e	g	f/nf	not a	pre	i	N	f	non-sa	
23	Mutsun	a	a	n	a																
24	Nadëb	n	n	n	n		e	g	fwr	sa	pre	e	g	f	o	pre					
25	Nama	a	a	a	a		e	g	f	sao, io	pre	e	p	f	adp objs	pre/post					
26	Namia	n	n	n	n		e	g	fwr		pre/post										
27	Nez Perce	a/3	a/3	e/a	e	po															
28	Ngalakan	e	e	a/e	e	po	e/adj	g	fwr	sao, io	post										
29	Nunggubuyu	n	n	h	h	po	e	g	fwr	any	post/pre										
30	Paumari	3	a	a/e		po	e	g	fwr	saog, obl	post										

language name	NA	PA	VA	domA	objA	rcH	rciH	rcvf	access	position	rcH	rciH	rcvf	access	position	rcH	rciH	rcvf	access	position
31 Quechua	a	a	a	a	po	e	g	nf	s/o,io,obl	pre/post										
32 Sandawe	n	n	n	n																
33 Secoya	e/3/n	e/3/n	a		?do	e	g	nf	a/so/loc	post										
34 Shasta	n	n	a	a																
35 Shipibo	e	e	n	e		e	g/p	nf	sao	post	e	g/p	nf	so						
36 Shoshone	a	a	n	a	po/do	e	p/g	nf	sa	post	e	p/g	nf	o		e	p/N	nf	obl	
37 Takelma	n	n	a/s	s			g	fwr												
38 Tepehua	n		h/a	h		e	g	nf		post										
39 Tukang Besi	e/a	e/a	a	e	po	e	g	nf	sa	post	e	g	nf	o		i	N	f	"nom"	
40 Tzotzil	n	n	e	e	po															
41 Urubu-Kaapor	a	a	a/s	s																
42 Wintu	a	a	a	a																
43 Wolof	n	a	a	a	po/do	e	rp	nf	sao	post	e	rp	fwr	loc						
44 Yagua	n	n	s	s	po/do	e	g/rp	f/fwr	any	post										
45 Yavapai	a	a	n/h	h	po	e	g	fwr	sa	post	i	N	f	o						
46 Yawelmani	a	a	n	a	po	e	g	nf		post/pre	e	g	nf	o						
47 Yimas	n	n	e/a	e	do	e	g	nf	sao,loc, temp	post	e	g	nf	sa						
48 Yuchi	n	n	s/a	s	do/po	e	g	f/fwr	sao, obl	post										
49 Zoque	e	n	n	e		e	g	?fwr	so/ag/loc	post										
50 Zuni	n/a	a	n	a		e	g	?fwr	sao	post										

language name	mark	adp	case	relN	adv	caus	trans	antip	pass	ser	dir	instNI
1 Ainu	2	1		1		1					1	
2 Alamblak	2	1		1		1				1		
3 Amharic	2	1		1		1			1		1	
4 Awtuw	1	1		1						1	1	
5 Caquinte	3	1				1					1	
6 Chichewa	2	1		1		1			1		1	
7 Chitimacha	2	1		1		1					1	
8 Choctaw	3					1						
9 Dyirbal	0		1					1				
10 Epena Pedee	1	1		1		1			1	1	1	
11 Eskimo	2		1	1		1		1	1		1	
12 Halkomelem	2	1				1		1				
13 Ika	2	1		1		1		1			1	
14 Kalkatungu	?1		1					1	1			
15 Kanuri	2	1				1					1	
16 Karok	2	1				1						1
17 Kate	3	1		1					1	1		
18 Kharia	1	1				1		1		1	1	
19 Lai	2	1		1		1			1	1	1	
20 Maasai	2	1		1							1	
21 Mohawk	2		1							1		
22 Motuna	2			1		1			1		1	
23 Mutsun	2		1			1						
24 Nadëb	0	1				1						
25 Nama	2	1		1							1	?1
26 Namia	?1					1		1			1	
27 Nez Perce	2		1							1	1	
28 Ngalakan	2	1								1		
29 Nunggubuyu	2	1	1								1	
30 Paumari	1	1		1		1				1	1	1

language name	mark	adp	case	relN	adv	caus	trans	antip	pass	ser	dir	instNl
31 Quechua	2	1		1		1			1		1	
32 Sandawe	3					1						
33 Secoya	1	1		1		1						
34 Shasta	2	1	1	1		1	1		1		1	1
35 Shipibo	0	1	1	1					1		1	1
36 Shoshone	0	1		1		1		1	1		1	1
37 Takelma	2	1		1		1		1	1		1	1
38 Tepehua	3	1		1		1		1	1	1		1
39 Tukang Besi	2	1				1		1	1	1		
40 Tzotzil	2	1		1								
41 Urubu-Kaapor	1											
42 Wintu	1	1	1?1	1?1		1			1		1	
43 Wolof	1	1	1	1		1					1	
44 Yagua	?3	1		1		1					1	
45 Yavapai	2	1				1						
46 Yawelmani	0		1						1			
47 Yimas	3	1	1		1	1				1	1	
48 Yuchi	2	1	1			?1						
49 Zoque	2	1				1			1	1	1	
50 Zuni	2	1		1		1				1	1	1

Appendix 3. Discussion of applicative sample languages.

Language (source).

<u>Applicative constructions:</u>

<u>Head and dependent marking, morphological complexity:</u>

a. nominal possessor and possessed noun
b. pronominal possessor and possessed noun
c. adjectival modifier and modified noun
d. nominal subject and verb
e. pronominal subject and verb
f. nominal direct object and verb
g. pronominal direct object and verb
h. nominal indirect object and verb
i. pronominal indirect object and verb.

<u>Word order:</u>

<u>Alignment:</u>

<u>Relative clause structure:</u>

<u>Verbal pronominal morphology:</u>

<u>Means for encoding spatial relations:</u>

<u>Other valence-affecting constructions:</u>

<u>Miscellaneous:</u>

1. Ainu (Shibatani 1990).

<u>Applicative constructions:</u>

Ainu has three applicative constructions. One, marked by *ko-*, refers to dative/goal, allative, and comitative participants (64-67). Another, marked by *e-*, involves allative, locative, and instrumental participants (64-67). Finally, another construction, marked by *o-*, refers to ablative and locative participants (64-67).

<u>Head and dependent marking, morphological complexity:</u>

a. head (37)
b. head (30)
c. insufficient discussion
d. head (25-8)
e. head (25-28)
f. head (25-28)
g. head (25-28)
h. head=f or dependent (34)
i. head=g or dependent (34).

Head marking: head+floating=6
Dependent marking: dependent=2
Morphological complexity: head+dependent+floating=8

<u>Word order:</u>

Basic word order in Ainu is SOV (17, 22).

<u>Alignment:</u>

Nouns and pronouns do not inflect for case, so they pattern neutrally (31). Verbal marking in Classical Ainu had a three-way distinction in first person, and was neutral in second and third persons (25-26). Colloquial Ainu verb morphology has a neutral system, except in the case of first singular, which patterns accusatively, and in the first plural, which retains a three way system (28). Recipient objects appear to be marked on the verb (26-27, 34), so at least in this respect, the language has a primary object alignment for multiple objects.

<u>Relative clause structure:</u>

Relativization involves a preposing gap strategy with a finite relative clause verb (40). This strategy is used for relativization on core relations, as well as for at least some obliques; the latter may also require concomitant use of applicative constructions, however (41). There are also a number of nominalizations (32-33) which may serve the function of relativization in some instances.

<u>Verbal pronominal morphology:</u>

Verbs contain pronominal morphology for up to two arguments, subject and object (25).

<u>Means for encoding spatial relations:</u>

There are a few case particles, presumably clitic adpositions, including some which indicate spatial relations (35), and a number of elements which are probably relational nouns (38).

<u>Other valence-affecting constructions:</u>

There is a construction which yields intransitives from a transitive bases for which the object is 'generalized', resembling an antipassive (46). The language otherwise has morphological causatives (48-50). Ainu also has what is identified as a passive construction (55ff.), but the exact status of it is not entirely clear: syntactically it appears to involve an intransitive predicate, but the morphology required still makes the construction look transitive.

<u>Miscellaneous:</u>

There are several verbal directional elements (80-81).

2. Alamblak (Bruce 1984).

<u>Applicative constructions:</u>

Alamblak has two benefactive applicative constructions (158-160). The first, marked by -*hay*, is dubbed an 'indirect' benefactive marker; the second, marked by -*nho* is a 'direct' benefactive marker. The difference between the two constructions has to do with the

necessity that the event described by the verbal base and the beneficial effect take place at the same time, place, intentionally, etc. in the case of the direct benefactive, and the non-necessity of these factors in the case of the indirect benefactive. The indirect benefactive, but not the direct benefactive, may also have a malefactive interpretation.

Head and dependent marking, morphological complexity:

a. dependent (116-117)
b. dependent (182)
c. none (2)
d. head (147-149)
e. head (147-149)
f. head (147-149)
g. head (147-149)
h. head=f (187)
i. head=g (187)

Head marking: head+floating=4
Dependent marking: dependent=2
Morphological complexity: head+dependent+floating=6.

Word order:

Alamblak is SOV, though there is some flexibility (2).

Alignment:

Nouns pattern neutrally (2), pronouns pattern neutrally (75), and verbs pattern accusatively (147). There appears to be a primary object alignment for multiple objects (187).

Relative clause structure:

Relativization is accomplished by a preposed, gap nucleus, non-finite strategy; the only participants not accessible to this strategy are comitatives and objects of comparison (106). A variation on this strategy is one in which a relativizer is used to mark the relative clause verb, and at least these relatives may be postposed as well (108-9). Relativization on genitives is more complex, involving a preson-number-gender marker attached to the non-finite form and a genitive marker linking the clause to its external head; this type of relative clause appears to be preposed only (111).

Verbal pronominal morphology:

Verbs bear pronominal agreement markers for subjects and one object (147). When two objects are present, only one may take agreement (184-7).

Means for encoding spatial relations:

A number of 'locative' roots exist, some of which look like postpositions or relational nouns, and others of which appear to be compounded with what would be their object, though it is difficult to tell exactly how they work from the discussion (83 and cross-referenced material). There are several case markers (195 ff.), some of which have spatial semantics.

<u>Other valence-affecting constructions:</u>

Other productive morphological voices include causatives (153-8). There is no marked passive, but patients may simply function as subjects of verbs which have unexpressed agents due to the 'voice-neutral' quality of verbs (195).

<u>Miscellaneous:</u>

There are a variety of serialization phenomena (152ff.)

3. Amharic (Hartmann 1980).

<u>Applicative constructions:</u>

There are two 'prepostional affixes' (169). -əll marks dative and benefactive applicative constructions, and -əbb marks a generalized applicative construction, which can refer to malefactives, instruments, and locatives (170).

<u>Head and dependent marking, morphological complexity:</u>

a. dependent (261)
b. dependent (293-4) or head (295-6)
c. dependent (281, 308-9)
d. dependent (371-2) and head (84, 143, 299ff.)
e. head and dependent (326-7)
f. head and/or dependent (299ff., 375-7)
g. dependent (377-8)
h. head=f and/or dependent (299ff., 326-7, 377-8)
i. dependent=g (326, 377-8)

Head marking: head+floating=4
Dependent marking: dependent=8
Morphological complexity: head+dependent+floating=12

<u>Word order:</u>

Basic word order is verb-final (397).

<u>Alignment:</u>

Nouns, pronouns, and verbal morphology exhibit accusative alignment. Multiple objects have a primary object treatment in terms of agreement morphology, but overt nominals are treated in a direct object manner (375-378).

<u>Relative clause structure:</u>

Relative clauses are preposed and contain a finite verb and relativizer, the form of which varies according to the aspect of the relative clause verb (448-9). The nucleus appears to be represented by a gap, unless verbal pronominal morphology should be considered to be a pronominal copy. Subjects, objects, and indirect objects may be relativized on using this strategy (449-50), and obliques require applicativization (450-1) or, in the case of obliques in adpositional phrases, pronominalization of the nucleus (451).

<u>Verbal pronominal morphology:</u>

Verbs bear pronominal agreement morphology for up two two arguments (375-378).

<u>Means for encoding spatial relations:</u>

There are about six prepositions/prefixes which encode some spatial relations (326-38), and a few clear prepositions (348-9). In addition, these preposition/prefixes are used in conjunction with a large number of postposed elements which appear to be relational nouns (338-40, 349-50).

<u>Other valence-affecting constructions:</u>

There is at least one morphological causative (102ff.), and there is what is referred to as a passive-reflexive (106-7).

4. Awtuw (Feldman 1986).

<u>Applicative constructions:</u>

Awtuw has a benefactive applicative construction marked by -*kow* (77, 102).

<u>Head and dependent marking, morphological complexity:</u>

a. dependent (112)
b. dependent (112, 125)
c. none (127-8)
d. dependent (unmarked:90)
e. dependent (90)
f. dependent (90)
g. dependent (90)
h. dependent=f
i. dependent=g.

Head marking: head+floating=0
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=6.

<u>Word order:</u>

Stated basic word order is SOV, but permutations of S and O are common (87).

<u>Alignment:</u>

Noun and pronoun subjects are unmarked, and direct objects are marked if there is an equal possibility that they might be interpreted as subject (87-89); thus, these categories have accusative alignment. Main clause verbs agree only minimally for subject number (71, 88), and so have only a marginal tendency towards accusative alignment. Objects display a primary object alignment (89).

<u>Relative clause structure:</u>

Relative clauses are internally- or externally-headed with the nucleus instantiated by a gap in the case of the latter. The relative clause verb bears a relativizer identical to the

accusative marker, which is used to mark most complement types as well. This strategy admits relativization on any participant type besides genitives (164). Alternatively, a resumptive pronoun may occur in the relative clause, and under such circumstances, even genitives may be relativized on (165). Relative clauses are either preposed (164-5), or postposed, the latter yielding a non-restrictive sense (166).

Verbal pronominal morphology:

Verbs agree for subject number. Otherwise, there is no agreement morphology (71, 88).

Means for encoding spatial relations:

There is a small set of elements (which have a phrasal distribution and so are probably best regarded as adpositions), one of which marks location and direction (114-5). Over a dozen relational nouns serve to make further spatial distinctions (114).

Other valence-affecting constructions:

No other valence-affecting constructions are mentioned.

Miscellaneous:

Awtuw has productive verb-verb compounding resembling serialization (48). Several more canonical serialization construction types are also described (152ff.) There are also about four elements which express associated motion (75).

5. Caquinte (Swift 1988).

Applicative constructions:

Caquinte has a wide variety of applicative constructions, varying in most cases according to the thematic role of the applicative object (discussed in detail on 70-77, along with some other valence-affecting morphology). The 'dative', marked by -ako, may refer to a variety of roles (recipient, content, conveyance, benefactive); a circumstancial applicative is marked by -βeNt; a second, specificially benefactive applicative marker is -noNt; -apitsa marks what is referred to as the 'separative', indicating occurrence of the action at some distance from, or to some distance from an object; the 'mediative' -akay may indicate comitative applicative constructions; the 'presencial' applicative construction, marked by -imo, has an additional object in whose presence the action takes place; the 'referencial' applicative construction, marked by -imeNt, is used in cases in which the action occurs around some participant, or with respect to a participant; finally, an instrumental applicative construction is marked by -aNt.

Head and dependent marking, morphological complexity:

a. head (example on 165)
b. head (62)
c. insufficient information.
d. head (no explicit discussion, but all sentences appear to have head marking for subject)
e. head (subject normally represented by verbal prefixes:61)
f. head (no explicit discussion, but all sentences appear to have head marking for object)
g. head (61, 63)

h. head (no explicit discussion, but all sentences appear to have head marking for indirect object)

i. head (61, 63).

Head marking: head+floating=8
Dependent marking: dependent=0
Morphological complexity: head+dependent+floating=8

Word order:

Insufficient information, though it is probably verb-medial, as in closely related Asheninca Campa (Nichols 1992:302).

Alignment:

No case morphology is discussed, so nouns and pronouns presumably pattern neutrally. Verbal agreement morphology shows split-intransitive phenomena (61).

Relative clause structure:

Relativization involves a relativizer attached to a verb which is identical to a main clause form except for the absence of agreement which would refer to the relativized entity. The head is external, there is a gap for the head in the relative clause, and this strategy may be used to relativize on subjects (with no distinction noted between S and A relativizations) and objects. Relative clauses appear to be postposed (34).

Verbal pronominal morphology:

Verbs agree with subjects, as well as with direct and indirect objects, marking up to three arguments simultaneously (61 and examples on 63-4).

Means for encoding spatial relations:

There is a generalized locative postposition, which expresses numerous spatial (and temporal) relations (96).

Other valence-affecting constructions:

The comitative applicative marker also may mark an indirect causative construction (72).

Miscellaneous:

There are three verbal elements which indicate associated motion (48-9).

6. Chichewa (Sam Mchombo, p.c.).

Applicative constructions:

The generalized applicative in Chichewa, marked by *-ir~-er*, may reference dative/goals, beneficiary/maleficiaries, instruments, locatives, and circumstantials.

Head and dependent marking, morphological complexity:

a. dependent

b. dependent
c. dependent
d. head
e. head
f. none
g. head
h. none
i. head=g

Head marking: head+floating=3
Dependent marking: dependent=3
Morphological complexity: head+dependent+floating=6.

Word order:

Basic word order is verb-medial.

Alignment:

Nouns and pronouns pattern neutrally and verbs pattern accusatively. Object agreement shows a primary object treatment of multiple objects.

Relative clause structure:

Relative clause verbs are postposed and non-finite, with a tonal pattern which distinguishes them from main clause verbs. The usual strategy makes use of a relative pronoun; in the case of subject relativization, the relative pronoun is accompanied by a subject pronominal verbal marker, and the relative pronoun may be absent (Mchombo 1999.:4-5). Object relatives involve essentially the same strategy, but either or both pronominal elements may be absent. Locatives are also accessible, and an enclitic version of the relevant locative class prefix may occur following the verb (cf. Bemba discussed in Chapter 4). Instruments and circumstantials are not accessible to this strategy without concomitant use of an applicative construction.

Verbal pronominal morphology:

Verbs may bear up to two pronominal agreement markers (subject and one object).

Means for encoding spatial relations:

There are a few highly-generalized prepositions and a wide range of relational nouns for indicating spatial relationships.

Other valence-affecting constructions:

There are morphological causative and passive constructions.

7. Chitimacha (Swadesh 1946).

Applicative constructions:

Chitimacha has a benefactive applicative ('indirective') marked by -aʔ (318, 325).

Head and dependent marking, morphological complexity:

a. none (333)
b. none (333)
c. none (312)
d. head (324) and optional dependent (331)
e. unclear, but probably just head (324)
f. head (324, 331)
g. unclear, but probably just head (324)
h. possibly dependent, but insufficient information (325)
i. insufficient information

Head marking: head+floating=4
Dependent marking: dependent=0
Morphological complexity: head+dependent+floating=4

Word order:

Order tends to be verb-final (332).

Alignment:

There is optional marking of subjects of 'active' verbs (by which it is not entirely clear that only transitive subjects are included) (331). Verbs pattern accusatively (324), although there is a small amount of split-S behavior (326).

Relative clause structure:

Relative clauses are postposed and appear to involve a finite verb, gap nucleus strategy. This strategy may be used for at least S, A, O, and locatives (334).

Verbal pronominal morphology:

Verbs are inflected for subject person and number (324). The discussion also makes it clear that objects are marked verbally (331).

Means for encoding spatial relations:

There is a class of about half a dozen polyfunctional postpositions/case suffixes, some of which indicate spatial relations (316, 328). There are apparently also some relational nouns (327).

Other valence-affecting constructions:

The language has a morphological causative (318).

Miscellaneous:

There are a number of directional elements associated with verbs (336).

8. Choctaw (Nicklas 1974, Ulrich 1986, Gordon 1987).

Applicative constructions:

Choctaw has several applicative constructions, described by Ulrich under the rubric of oblique agreement marking. This oblique agreement morphology is reanalyzable variously as combinations of either O or dative agreement markers and derivational elements; dative agreement markers appear to be largely reanalyzable in terms of an applicative marker. A benefactive applicative construction is marked by -(m)i (Ulrich:258-9). Locative applicative constructions are marked by aa (Ulrich:262). A more specific type of locative applicative, called the superessive, is marked by -on (Ulrich:267). Ablative applicatives are marked by -(m)aa (Ulrich:265). An instrumental applicative construction is marked by -isht---ishit- (Ulrich:274). A comitative applicative construction is marked by ibaa- (Ulrich:268). Finally, what appears to be a substitutive applicative construction is marked by alhtoba- (Nicklas:182).

Head and dependent marking, morphological complexity:

a. head (Ulrich:18)
b. head (Ulrich:18)
c. apparently none (Ulrich:17)
d. head (Ulrich:235) and dependent (Ulrich:16)
e. head (Ulrich:235) and dependent (Ulrich:16)
f. head (Ulrich:235) and dependent (Ulrich:16)
g. head (Ulrich:235) and dependent (Ulrich:16)
h. head (Ulrich:246)
i. head (Ulrich:246)

Head marking: head+floating=8
Dependent marking: dependent=4
Morphological complexity: head+dependent+floating=12

Word order:

Stated word order is SOV (Ulrich:16).

Alignment:

Nominals (and presumably pronouns) have an accusative alignment (Ulrich:16). Verbal agreement shows stative-active patterning (Ulrich:19).

Relative clause structure:

Choctaw relative clauses contain finite verbs which may have switch-reference morphology indicating their status as subordinate; switch-reference in these cases thus acts as a relativizer (Gordon 1987:72). Relatives appear to be either internally-headed, or they may have an external head (Gordon 1987:69), however, the examples given by Gordon involve dislocation of the relative clause, so it is difficult to judge the positioning of relatives with respect to an external head. The position of the head internal to the relative clause is expressed by a full NP or a gap. This strategy appears to be accessible only to subjects and objects, though it is possible for other arguments to gain access to it through the use of applicative constructions (see the examples in Broadwell 1986:38).

Verbal pronominal morphology:

Verbs show agreement for up to three arguments (Ulrich:236-246).

Means for encoding spatial relations:

There are four (potentially possessed) 'nouns of orientation' (Nicklas:49), which appear to be relational nouns. There are also a number of other spatial elements (about ten in number), which also appear to function as (possessed) relational nouns (207-8).

Other valence-affecting constructions:

There is a productive causative construction (Ulrich:137ff.)

Miscellaneous:

There are andative and venitive directional elements marked verbally, as well as elements which indicate that the action is directed towards or away from the speaker (Ulrich:276-7).

9. Dyirbal (Dixon 1972).

Applicative constructions:

Dyirbal has an applicative marker -mal~-mbal; with transitive bases, the applicative is instrumental and with intransitive bases, the applicative is comitative (95-6).

Head and dependent marking, morphological complexity:

a. dependent (42, 105ff.)
b. dependent (50, 105ff.)
c. insufficient information
d. dependent (42)
e. dependent (50)
f. dependent (42)
g. dependent (50)
h. dependent (dative:42)
i. dependent (dative:50)

Head marking=head+floating=0
Dependent marking=dependent=8
Morphological complexity=8.

Word order:

Word order is free (59).

Alignment:

Nouns pattern ergatively (42) and pronouns pattern accusatively (or split neutral/accusative in one dialect) (50). Verbs are neutral.

Relative clause structure:

The main means of forming relativizations is a postposed, externally-headed gap strategy marked by a non-finite form in -ŋu (99ff.) which appears to be restricted to relativization on absolutives. A similar strategy, with an aspectual distinction, is marked by a finite form and the relativizer -mi in one dialect (103). There is also a habitual participial form in -muŋa, essentially a headless relativization strategy to which only absolutives are accessible (81-82).

Verbal pronominal morphology:

There is no verbal pronominal morphology.

Means for encoding spatial relations:

There are a few (non-clitic) case markers (42, 57-58).

Other valence-affecting constructions:

There is an antipassive construction (65).

10. Epena Pedee (Harms 1994).

Applicative constructions:

Epena Pedee has an instrumental applicative construction, marked by the element -pʰe (90). A second construction ('affected object') may be an applicative construction of some sort, but the discussion is not sufficient to definitively characterize it as such (91-2).

Head and dependent marking, morphological complexity:

a. none (28, 60) or (optionally) dependent (44-5)
b. none (50)
c. none (23, 52)
d. dependent (ergative:9)
e. dependent (ergative:22)
f. dependent (absolutive:22)
g. dependent (absolutive:22)
h. dependent (dative:23)
i. dependent (dative:23)

Head marking: head+floating=0
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=6.

Word order:

Stated constituent order is SOV (11), with obliques typically placed after the verb (12).

<u>Alignment:</u>

Nouns and pronouns pattern ergatively (9, 22). Verbs show agreement with S/A in number, but otherwise are neutral (10). There is a direct object alignment for multiple objects (11, 23).

<u>Relative clause structure:</u>

Relative clauses are internally-headed, and as such a full NP instantiates the nucleus (166). The verb form is non-finite; it has a special form only found in subordinate clauses, and in some tenses, only in relatives (166). The singular subject present tense form of a relative clause verb is identical to that found in main clauses, however, (169). This strategy is used for S, O, and locatives (168).

<u>Verbal pronominal morphology:</u>

Verbs show agreement with S/A for number (10), and optional agreement for number with objects. The latter does not appear to be purely agreement, however, and may relate instead to completedness of the action, affectedness of the object, or the like.

<u>Means for encoding spatial relations:</u>

Epena Pedee has a set of what are described as postpositional clitic case markers (65ff.) for indicating case relations. There are several other particles which further specify location, many of which attach to two of the clitic case markers (70ff.), but which do not appear to be canonical relational nouns.

<u>Other valence-affecting constructions:</u>

The language has a morphological causative (89-90).

<u>Miscellaneous:</u>

Some verb serialization is noted (86). The language has an andative and a venitive (93).

11. West Greenlandic Eskimo (Fortescue 1984).

<u>Applicative constructions:</u>

West Greenlandic has a benefactive applicative construction marked by -ut(i)/-ssut(i) (213). For some verbal bases, this affix may also mark instrumental applicative constructions (214). There is another affix, -qatigi, which appears to be a comitative applicative construction marker (268). Finally, there are various other pieces of verbal morphology, usually translated as 'to have as one's means/time/place/reason for verbing' which take the means/time/place/reason participant as a direct object, and so also mark applicative constructions (91, 268).

<u>Head and dependent marking, morphological complexity:</u>

a. dependent and head (205-7)
b. head (205-7, 258-9)
c. dependent (303)
d. dependent and head (80, 210)
e. (dependent and) head (80)

f. dependent and head (80, 210)
g. (dependent and) head (80)
h. head or dependent (88-89, 211)
i. head (88-89) or (presumably) dependent

Head marking: head+floating=8
Dependent marking: dependent=7
Morphological complexity: head+dependent+floating=15.

Word order:

Stated neutral word order is SOV, though there is considerable variation (93).

Alignment:

Nouns and pronouns pattern ergatively (80). Verbal marking is probably best regarded as three-way. There are fused subject-object forms for transitive clauses, and the object marking portion of these is usually relatable to nominal possessive affixes (82), but there is no obvious relationship between either the object marking and the intransitive subject markers or the transitive subject markers and the intransitive subject markers (cf. 288-9).

Relative clause structure:

Relativization involves a non-finite ('participial mood') gap-nucleus strategy with the relative clause postposed to an external head (49-51). Different participial markers or verbal bases are required for relativization on different participants: objects (may) require passive participles (49), agents require antipassivized bases (54-55), and oblique entities may require applicativized bases (54).

Verbal pronominal morphology:

Verbs take pronominal agreement morphology for up to two participants, subject and object (82).

Means for encoding spatial relations:

There are a number of case suffixes, some of which express spatial relations (205ff.). The language also has a large number of relational nouns for this purpose (106-7, 209). The latter are described under the rubric of 'postpositions' (228ff.), but the fact that they are possessed and the sequence of possessor+postposition is inflected by case suffixes indicates that they do not change the categorial status of a spatial expression, and so are best regarded as a type of noun.

Other valence-affecting constructions:

There is a morphological passive construction (265) and an antipassive, traditionally called the 'half-transitive' form (266ff.). At least two morphological means of causativization are mentioned (268).

12. Halkomelem (Gerdts 1988, supplemented by Galloway 1993).

Applicative constructions:

There are four of what Gerdts refers to as 'advancement' affixes in Halkomelem. One of these, -əs, marks a recipient or dative/goal applicative construction. Another, -łc marks a benefactive applicative construction. -meʔ marks a circumstantial/reason (Gerdts' 'causal') applicative construction. And lastly, -n marks an allative applicative construction (23-24, 144).

Head and dependent marking, morphological complexity:

a. head (41) or dependent (41)
b. head (46)
c. none
d. floating (33)
e. floating (33)
f. head (33)
g. head (33)
h. head=f
i. head=g

Head marking: head+floating=6
Dependent marking: dependent=1
Morphological complexity: head+dependent+floating=7.

Word order:

Word order is VSO, but some speakers allow VOS (42).

Alignment:

Nouns are neutrally marked (39). Gerdts 1988 does not mention non-verbal pronominal forms, but Galloway's discussion for the related Upriver dialect indicates that such pronouns also pattern neutrally (172-173). Pronominal verb agreement is split between accusative marking for first and second persons (46) and ergative for third persons (49). Although basic ditransitives always involve applicative morphology to indicate the absolutive status of recipients, this use of applicative morphology appears to be obligatory, and so the language effectively has a primary object treatment of multiple objects (93).

Relative clause structure:

Subject (but not clearly including A) and object relatives are postposed, externally-headed, gap nucleus structures with finite verbs (59-60). Relativization on obliques (e.g. instruments and locations) requires nominalization of the relative clause verb, which is possessed by the relative clause subject (70-73).

Verbal pronominal morphology:

Main clause verbs take agreement for subject (in fact, a second position clitic) and one object (33).

Means for encoding spatial relations:

No prepositions are mentioned in Gerdts 1988, though the oblique case marker may be considered to be such. The only prepositional elements noted by Galloway 1993 are actually verbs (339).

Other valence-affecting constructions:

Other productive morphological voice categories include causative (28), antipassive (148), and passive (195).

13. Ika (Frank 1990).

Applicative constructions:

Ika has three applicative constructions. One (marked by *ŋ-* for first or second person and *i-* for third person) references benefactives and malefactives (70-71). The other (marked by *kʌ-* is a polyfunctional applicative which at least references goals and possessors (68-69). There is also an element *an-~ʌn-* which may be a kind of allative applicative when used in conjunction with verbs of motion (73).

Head and dependent marking, morphological complexity:

a. dependent (4)
b. dependent (4)
c. none (4, 32)
d. head (7)
e. head (pronominal:20) and dependent (ergative:21)
f. head
g. head (pronominal:20) and dependent (absolutive:21)
h. head=f
i. head and dependent=g

Head marking: head+floating=4
Dependent marking: dependent=4
Morphological complexity: head + dependent marking=8.

Word order:

Stated basic word order is SOV (3), though there is some flexibility.

Alignment:

There is split ergative/accusative marking of nominals (8). Verb morphology is largely accusative (7-8), though there is some split-S behavior (8-9). There is no discussion on treatment of pronoun subjects and objects. Objects are aligned in a primary object fashion (7).

Relative clause structure:

Relative clauses are internally-headed (thus, full NP nucleus) with a non-finite verb form (99). This strategy is used primarily for S and O, with rare instances of locative and

indirect object relativization (99-100). There are also nominalization strategies for relativizing on locatives (102-3).

Verbal pronominal morphology:

Verbs take prefixal pronominal morphology for S/A and O, marking up to two arguments.

Means for encoding spatial relations:

There are clitic case markers (called postpositions, 27ff.); these may be stacked up, so presumably some of them are not adpositons, but instead have a relational noun character. There are also a few other elements which appear to be more clearly of a relational noun sort (44).

Other valence-affecting constructions:

Ika has both morphological and analytic causative constructions (66).

Miscellaneous:

A minor category 'motion' indicates motion associated with performance of a verbal action (57).

14. Kalkatungu (Blake 1979).

Applicative constructions:

Kalkatungu has a generalized applicative construction marked by -nti which codes instrumental, locative, and circumstantial (causal) applicatives. The formative marking these constructions also appears to have a causativizing function with some intransitives (87-89). In addition, there is another element -ñcama which allows NPs which would normally be marked in the dative (including beneficiaries) to appear as absolutives, and would thus appear to be a benefactive/malefactive applicative (89-91)

Head and dependent marking, morphological complexity:

a. dependent (dative:45)
b. dependent (dative:45)
c. none mentioned
d. dependent (ergative:27) and/or head (bound pronominals:36)
e. dependent (ergative:31) and/or head (bound pronominals:36)
f. dependent (absolutive:27) and/or head (bound pronominals:36)
g. dependent (31) and/or head (bound pronominals:36)
h. dependent and/or head=f or separate (allative) dependent (38, 41-2)
i. dependent and/or head=f or separate (allative) dependent (38, 41-2)

Head marking: head+floating=4
Dependent marking: dependent=8
Morphological complexity: head+dependent+floating=12

Word order:

SV, AOV or AVO orders are all described as common (107), so word order appears to be split between verb-final and Vverb-medial.

Alignment:

Nouns and pronouns pattern ergatively (27-8). Verbal agreement patterns in an accusative fashion (35-7). In terms of case marking, objects show either a direct object alignment, or are not distinguished; in terms of verbal agreement, on the other hand, there is primary object alignment (38).

Relative clause structure:

Relative clauses are externally-headed with a relativizer/relative pronoun (it appears to be marked for accusative case internal to the relative clause); otherwise, the verb is finite. This strategy is used for relativizing on S and O. Relativizations on A and obliques must make use of the antipassive and applicative(s), respectively (100-102).

Verbal pronominal morphology:

Verbs show agreement for S/A and O, but usually for no more than one argument at a time, and the conditions for use of this morphology are not entirely clear (38).

Means for encoding spatial relations:

Kalkatungu has about six case markers in addition to those used to mark basic clausal relations, most of which have spatial semantics.

Other valence-affecting constructions:

There is an antipassive construction (27-28).

Miscellaneous:

The language has an andative and a venitive (92).

15. Kanuri (Hutchison 1981).

Applicative constructions:

Kanuri has a generalized applicative construction marked by -kə--gə (139ff.); the thematic roles applicative objects may assume include direction, beneficiary, locative, and comitative (141).

Head and dependent marking, morphological complexity:

a. head (47) or dependent (49)
b. dependent or head and dependent (197-8)
c. none mentioned
d. head (91)
e. head (91)
f. head (92)
g. head (92)
h. head=f (92) and dependent (259)
i. head=g (92) and dependent (259)

Head marking: head+floating=6
Dependent marking: dependent=4
Morphological complexity: head+dependent+floating=10.

Word order:

Basic word order is SOV with OVS also possible (7).

Alignment:

Nouns and pronouns pattern neutrally, though there is an agentive postposition (8, 215) which occurs in a passive-like grammatical relation alternation. Verbal marking shows an accusative pattern (91-2). Applicative objects are referenced by verbal marking rather than base objects (134), as are indirect objects of basic ditransitives (136), so the treatment of objects shows a primary object marking pattern; however, overt recipient objects are obliquely marked, which shows a direct object pattern (259).

Relative clause structure:

Kanuri relative clauses are postposed (217), and contain either a gap or an independent pronoun copy of the head (220-1) and a finite verb with no relativizer (217-8). This strategy is available to subjects (223), objects (224-5), and obliques, but the latter are more likely to require a pronominal copy internal to the relative clause (222, 226).

Verbal pronominal morphology:

Up to two arguments are marked on the verb (91-92).

Means for encoding spatial relations:

A pair of adpositional case markers express spatial relations (8), and there are a few (borrowed) prepositions (317-318)

Other valence-affecting constructions:

The language has a morphological causative, but Hutchison questions its productivity (148ff.) There is also a derivational form described as passive-reflexive, which produces agentless passives (145-147).

16. Karok (Bright 1957).

Applicative constructions:

Karok has a benefactive/dative applicative construction in -ihi (107) and an instrumental applicative construction, marked by -ara (106). There are several other verbal forms (e.g. motion onto a horizontal surface, motion onto a vertical surface, motion through and area, etc.) which would also appear to be applicative constructions, though it is difficult to definitively identify them as such.

Head and dependent marking, morphological complexity:

a. head (128)
b. head (56)
c. none mentioned

d. head (59)
e. head (59)
f. head (59)
g. head (59)
h. insufficient information
i. insufficient information

Head marking: head+floating=6
Dependent marking: dependent=0
Morphological complexity: head+dependent+floating=6

Word order:

Word order is described as extremely free (141-2).

Alignment:

A postposition termed 'agentive' is used for transitive subjects when the object is animate and expressed only by verbal morphology (129); this would appear to be an ergative marker in an otherwise neutral system. Verbal morphology is highly fusional and not easily characterized, but aspects of it reflect accusative patterning (58-64).

Relative clause structure:

Insufficient information.

Verbal pronominal morphology:

Verbal pronominal morphology may indicate up to two arguments: subject and object (59).

Means for encoding spatial relations:

There are a limited number of postpositions for indicating spatial relations (129ff.)

Other valence-affecting constructions:

A passive construction is mentioned (59), but this is not marked morphologically even if it is a real passive.

Miscellaneous:

There are instrumental affixes on the verb (87), and a large number of directional affixes (95ff.)

17. Kâte (Pilhofer 1933).

Applicative constructions:

Kâte has an applicative construction with mostly malefactive or general goal applicative objects, but whose semantics is highly dependent on the base verb's semantics (100-101). There is also apparently possessor raising (127).

<u>Head and dependent marking, morphological complexity:</u>

a. head (115)
b. dependent (54) or head (55)
c. none mentioned (48-50)
d. head (26) and dependent (51-2)
e. head (26) and dependent (44)
f. head (40-41) and dependent (51-52)
g. head (40-41) and dependent (44)
h. head (40-41)
i. head (40-41)

Head marking: head+floating=8
Dependent marking: dependent=5
Morphological complexity: head+dependent+floating=13

<u>Word order:</u>

The subject is described as always preceding the predicate (102), and the object is described as coming before the verb (125), so word order is presumably verb-final.

<u>Alignment:</u>

Nominal marking is ergative (44), as is pronominal marking (51). Verbal agreement follows an accusative pattern (51-2, 40-41). Examples showing multiple objects marked on verbs (43, 127) indicate that there is little to distinguish between multiple objects; they do occur in a fixed order, however (127).

<u>Relative clause structure:</u>

The discussion of relative clause structure is difficult to interpret, but it appears that relative clauses are postposed, gap nucleus constructions with finite forms and a relativizer identical to the ergative case marker, in the case of S and A relatives (142-4). An alternative strategy seems to involve the use of a (relative?) pronoun at the end of the relative clause, in which there is no relativizer; this strategy is available for S and O, at least (142-3).

<u>Verbal pronominal morphology:</u>

Up to three arguments may be coded by pronominal agreement morphology (26, 43)

<u>Means for encoding spatial relations:</u>

There are five adpostional elements (44, 46-48) which mark spatial relations. In addition, there are a large number of nominal elements which are marked by the adpositional elements to indicate location (123-125).

<u>Other valence-affecting constructions:</u>

No other valence-affecting constructions are mentioned.

<u>Miscellaneous:</u>

There is productive verb-verb compounding which resembles serialization (95).

18. Kharia (Biligiri 1965).

<u>Applicative constructions:</u>

Kharia has a benefactive applicative, marked by the suffix *-ka*; it is restricted to transitive bases (46)

<u>Head and dependent marking, morphological complexity:</u>

a. head (for some inalienably possessed nouns, 37) and dependent (80)
b. dependent (79)
c. none (77, but monosyllabic modifiers reduplicate to indicate attributive relationships)
d. head (pronominal agreement, 62)
e. head (pronominal agreement, 62)
f. none, or optional dependent (81)
g. none, or optional dependent (81)
h. none
i. none

Head marking: head+floating=3
Dependent marking: dependent+floating=4
morphological complexity=head+dependent=7.

<u>Word order:</u>

(S)OV is the basic order (99).

<u>Alignment:</u>

Nominal case marking is optionally accusative (81) or neutral (83). There is no explicit discussion of alignment patterning of independent pronominals, which would lead one to suspect that it is identical to that for other nominal elements. Verbal marking patterns accusatively. Multiple objects are not distinguished (82)

<u>Relative clause structure:</u>

Insufficient information.

<u>Verbal pronominal morphology:</u>

Verbs show suffixal pronominal agreement with S and A (62ff.)

<u>Means for encoding spatial relations:</u>

The language has clitic case markers which appear to be adpositions, though only one or two of these appear to be relevant for encoding spatial relations (81ff.)

<u>Other valence-affecting constructions:</u>

Kharia has a morphological causative (42ff.), and a passive (46-7).

<u>Miscellaneous:</u>

There is a verb-verb compounding construction reminiscent of serialization (48).

19. Lai (in consultation with Kenneth Van Bik).

<u>Applicative constructions:</u>

Lai has several applicative constructions discussed in detail in Chapter 1.

<u>Head and dependent marking, morphological complexity:</u>

a. head
b. none
c. none
d. head (pronominal marker) and dependent (ergative)
e. head (pronominal marker) and dependent (ergative)
f. head (pronominal marker) and dependent (absolutive)
g. head (pronominal marker) and dependent (absolutive)
h. head and dependent=f.
i. head and dependent=g

Head marking: head+floating=5
Dependent marking: dependent=4
Morphological complexity: head+dependent+floating=9.

<u>Word order:</u>

Basic word order is SOV with some variability.

<u>Alignment:</u>

Nouns and pronouns pattern ergatively. Verbal pronominal morphology patterns accusatively. Objects have a primary object patterning.

<u>Relative clause structure:</u>

Relative clauses are externally-headed with a gap nucleus, finite verb form, and relativizer(s) for S/A, O and also locative and instrument (with a distinct relativizer for the latter two). Internally-headed relative clauses, differing only in terms of the presence of a full noun in place of a gap, are also attested.

<u>Verbal pronominal morphology:</u>

Verbs take pronominal agreement for S/A and O, marking up to two arguments.

<u>Means for encoding spatial relations:</u>

Adpositions (clitic case markers) and locational nouns are the means for encoding spatial relations.

<u>Other valence-affecting constructions:</u>

Lai has a morphological causative and a semi-productive middle voice construction, but no passive.

Miscellaneous:

Lai has a large number of directional elements and also limited V-V compounding, reminiscent of serialization.

20. Maasai (Tucker and Mpaayei 1955, Payne et al. 1994).

Applicative constructions:

Maasai has one generalized applicative construction for benefactives, (animate) goals, and locations marked by *-aki~-oki* (129ff.) Another generalized applicative construction, marked by *-ie*, references instruments, datives/goals, comitatives, locatives, and circumstantials (141ff.)

Head and dependent marking, morphological complexity:

a. head and dependent (37ff.)
b. dependent (20) or head (40)
c. dependent (agree in number with head:12)
d. head (see examples on 71ff.) and dependent (tonal marking:Payne et al. 286-7)
e. presumably dependent
f. head (71ff.) and dependent (tonal marking:Payne et al. 286-7)
g. presumably dependent
h. insufficient information
i. possibly head? (114)

Head marking: head+floating=4
Dependent marking: dependent=7
Morphological complexity: head+dependent+floating=11

Word order:

Payne et al. note that word order is verb-intial (286).

Alignment:

According to Payne et al. 286-7, there is accusative alignment of nominals which is expressed tonally; one of the main points of this paper is to recast the system of verbal morphology in terms of inverse-marking, so verbal morphology is hierarchical in nature.

Relative clause structure:

Relative clauses in Maasai are externally-headed, postposed, and involve a gap nucleus with a non-finite verb form (special relative clause forms of verbal agreement morphology). This allows relativization on subject (presumably both S and A) and direct objects (106-7). Relativization on indirect objects involves a tonal difference (113-4).

Verbal pronominal morphology:

Verbs agree with subjects and one object (53ff, 71).

Means for encoding spatial relations:

Two prepositions, one of which is used to express spatial relations, occur (41). There are also a number of relational nouns (43).

Other valence-affecting constructions:

Maasai has a passive (79ff.), an antipassive (the 'intransitive' form:120ff.), and a causative (146-8).

Miscellaneous:

The language has what appears to be a cislocative (123-4), and a translocative (126-7).

21. Mohawk (Bonvillain 1973, Baker 1988, 1996).

Applicative constructions:

There are two verbal formatives which mark benefactive applicative constructions in Mohawk: -vni and -ʔs (204-205). From the examples, they both appear to have generalized dative semantics (including recipients, affected objects, true benefactives), so it is not clear what the difference is between them, besides cooccurrence with particular bases.

Head and dependent marking, morphological complexity:

a. head (25-6, 229-30)
b. head (25-26, 229-30)
c. no information
d. head (24)
e. head (24)
f. head (24)
g. head (24)
h. head=f (24)
i. head=g (24)

Head marking: head+floating=6
Dependent marking: dependent=0
Morphological complexity: head+dependent+floating=6.

Word order:

Word order is free (Baker 1988:444).

Alignment:

Nouns and pronouns have no case marking, and thus pattern neutrally. Verbal morphology shows split-S phenomena, though markers for S_A and S_O are not easily relatable to fused A-O markers (108 and 123). Transitive affixes pattern in a primary object fashion (67).

Relative clause structure:

According to Baker 1996 (164-5), the most common relative clause type is a gap nucleus construction with a finite verb form. There may or may not be a demonstrative or an invariant particle present indicating the relative status of the clause, as well. Both subject (A and S) and object are accessible to this strategy. There is also an internally-headed relativization strategy, for which what Baker terms a relative pronoun (but which appears simply to be an invariant relativizer, despite its obvious relatedness to an interrogative element) appears at the edge of the relative clause (163). Apparently, externally-headed relatives may also involve this relativizer (163), though the exact conditions for the use of one or the other of these strategies are not described.

Verbal pronominal morphology:

Verbs show agreement for up to two arguments: subject and one object (24).

Means for encoding spatial relations:

There is a set of five 'locative suffixes' (225-8) which express basic spatial relations. One of these has some allomorphic variation, but otherwise, there is no data which unambiguously demonstrates their status as suffixal.

Other valence-affecting constructions:

The language has a causative construction (202-3). There is a verbal form described as the 'passive aspect' (211), but it is not clearly an inflectional valence-affecting construction.

Miscellaneous:

There is a translocative marker (184), and a cislocative marker (192).

22. Motuna (Onishi 1994).

Applicative constructions:

Motuna has a generalized applicative construction marked by -jee (423ff.) Roles encoded by the applicative marker include dative/goals, allatives, static locatives, benefactives, purposes, and possessors.

Head and dependent marking, morphological complexity:

a. head and dependent (241)
b. dependent (132) and/or optional head (241ff.)
c. dependent (number agreement with head:141)
d. head and dependent (45-52)
e. head and dependent (128)
f. head and dependent (45-52)
g. head and dependent (128)
h. insufficient information=f (46)
i. insufficient information=g (46)

Head marking: head+floating=6
Dependent marking: dependent=7
Morphological complexity: head+dependent+floating=13

<u>Word order:</u>

Basic word order is verb-final with considerable variation (4).

<u>Alignment:</u>

Nominal and pronominal alignment is ergative (45-52, 128). Verbal morphology shows a stative-active treatment of arguments, but the markers for S_O differ from O markers in having an additional element identical to that of a third person dummy A suffix (283). The latter would thus appear to be transitive predicates with a dummy agent, and the whole system of verbal morphology takes on a more nominative-accusative morphological appearance.

<u>Relative clause structure:</u>

A relativization strategy which allows relativization on almost any participant type is postposed, externally-headed, gap relatives which may contain either finite or non-finite forms (523-5). Preposed, externally-headed, gap, finite/non-finite relativization allows relativization on any participant type except for A (525-7). Finally, internally-headed relativizations with finite verb forms may relativize on positions other than S and A (527-8)

<u>Verbal pronominal morphology:</u>

Verbs code up to two arguments (266).

<u>Means for encoding spatial relations:</u>

There are what appear to be relational nouns (82-3) and a number of case particles (44-5), some of which mark spatial relations.

<u>Other valence-affecting constructions:</u>

There is a productive morphological causative (417ff.)

23. Mutsun (Okrand 1977).

<u>Applicative constructions:</u>

Mutsun has a benefactive applicative construction marked by -mi (151).

<u>Head and dependent marking, morphological complexity:</u>

a. none, or optional head (179)
b. head (176ff.)
c. insufficient information
d. dependent (unmarked:144)
e. dependent (165)
f. dependent (objective:149)
g. dependent (165)
h. dependent=f
i. dependent=g

Head marking: head+floating=1
Dependent marking: dependent=4
Morphological complexity: head+dependent+floating=5

Word order:

According to Okrand, basic word order may not be determined on the basis of available evidence. It does appear (based on 334ff.) that order is verb-initial if the verb is stative intransitive, and otherwise order is verb-medial. A further restriction is that order is SOV if both S and O are pronominal (337).

Alignment:

Subjects are unmarked (144) and objects are marked by an 'objective case' (149), so nominals and pronominals exhibit accusative patterning. Verbs have no agreement morphology, and thus pattern neutrally. Multiple objects show no difference in case marking (149).

Relative clause structure:

Insufficient information.

Verbal pronominal morphology:

There is no verbal pronominal morphology noted.

Means for encoding spatial relations:

There is a small system of case markers, including a locative with various senses (154) and an ablative (157), and a personal (animate) locative (159)

Other valence-affecting constructions:

Mutsun has a 'mediopassive causative' (215-219) and an 'active causative' (219); the latter is a causative of the usual variety. There is a passive marked by three suffixes, depending on tense (279).

Miscellaneous:

There are four directionals: two andatives (237ff.) and two venitives (239).

24. Nadëb (Weir 1986, 1990).

Applicative constructions:

Nadëb has several applicative constructions arising from incorporation of postpositional elements into the verb complex. Included are ya- 'on top of', ha- 'dative', ga- 'inside', ma- 'by means of', ba- 'ablative'. A comitative applicative construction, marked by sii- also appears to be possible (1990:339). In glossing these here, I have retained the glosses of Weir 1986, but these are not always indicative of the full range of semantics that these elements may have.

<u>Head and dependent marking, morphological complexity:</u>

a. dependent (1990:323)
b. none (1990:324);
c. none
d. none
e. none
f. none
g. none
h. none
i. none

Head marking: head+floating=0
Dependent marking: dependent=1
Morphological complexity: head+dependent+floating=1.

<u>Word order:</u>

Basic consituent order OSV (1986:295).

<u>Alignment:</u>

Pronouns pattern neutrally, as do nouns (1990:329). Verbs bear no pronominal agreement, so they also pattern neutrally.

<u>Relative clause structure:</u>

All relativization in Nadëb is externally-headed and involves a gap in the relative clause; all available examples involve relatives preposed to the head. Only subjects, direct objects, and adverbials may be relativized on (1990:339). The usual strategy for subjects involves a finite verb with a relativizer, but the relativizer may be preempted by other verbal morphology appearing in the same position class (1990:339); relativization on objects involves simply the verb form without this relativizer. Incorporation or applicativization may make less central participants accessible to relativization (1990:339).

<u>Verbal pronominal morphology:</u>

There is no verbal pronominal morphology.

<u>Means for encoding spatial relations:</u>

Nadëb has several spatial adpositions (1986).

<u>Other valence-affecting constructions:</u>

The language has a morphological causative construction (1990:330), and various other (non-productive) transitivization constructions.

25. Nama Hottentot (Hagman 1977).

<u>Applicative constructions:</u>

Nama has two applicative constructions: -'u, marks a comitative applicative construction (77-8, called an 'accompanitive') and -pa marks an indirect or benefactive object applicative construction (78).

<u>Head and dependent marking, morphological complexity:</u>

a. dependent (possessive pronominal forms, 36–but these are probably just the general pronominal roots; 47-48 also describes a genitive construction which has dependent marking)
b. floating (genitive particle, 37)
c. none
d. dependent (no marking)
e. dependent (no marking)
f. dependent (75)
g. dependent (75) or head (79-81)
h. dependent (75)=f
i. dependent (75) or head (79-81)

Head marking: head+floating=3
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=9

<u>Word order:</u>

Discussion of sentence and VP structure (54, 61) makes it clear that order is SOV.

<u>Alignment:</u>

Nominal and pronominal alignment is accusative (76). Insofar as verbs only show pronominal marking for objects (79-81), verbs also pattern accusatively. Multiple objects are not differentiated in terms of case (75), but indirect objects precede direct objects in terms of linear order (76); the same order is seen between two verbal pronominal suffixes (81).

<u>Relative clause structure:</u>

Relative clauses are preposed to their external heads, have a finite verb form, and for core relations (subject, object, indirect object) typically contain gap nuclei. For oblique relations (objects of postpositions), it is also possible to form relative clauses using this strategy, but it is not uncommon to have a pronoun nucleus in such instances; the latter strategy may involve a postposed relative instead of a preposed one (124-125).

<u>Verbal pronominal morphology:</u>

Verbs may have (purely) pronominal markers (interchangable with independent pronominals, though with perhaps a higher degree of topicality attributed to the verbal pronominal) for up to two objects (79-81).

<u>Means for encoding spatial relations:</u>

There are about fifteen 'simple' postpositions (102), and some 'compound' postpositions consisting of concatenations of simple postpositions (103). Some of the latter come from noun root+postposition compounding, which would indicate that the first element is a locational noun, though locational nouns do not appear to be a productive form class (103-4).

<u>Other valence-affecting constructions:</u>

The language has productive (77) and non-productive causative (76) derivations. It also has a passive construction (81).

<u>Miscellaneous:</u>

Nama has verb-verb (69) and verb-postposition (71-2) compounding reminiscent of serialization. It also has a venitive and what looks like an incorporated instrumental, 'mouth' (72).

26. Namia (Feldpausch and Feldpausch 1992).

<u>Applicative constructions:</u>

The prefix *naka-* marks an instrumental/comitative applicative construction (56-57).

<u>Head and dependent marking, morphological complexity:</u>

a. dependent (19)
b. none or dependent (the latter for kin terms, 19)
c. none (24-25, 30-31)
d. none obligatory
e. none obligatory
f. none obligatory
g. none obligatory
h. none obligatory
i. none obligatory

Head marking: head+floating=0
Dependent marking: dependent=2
Morphological complexity: 2.

<u>Word order:</u>

Basic word order is SOV (9).

<u>Alignment:</u>

There is no discussion of alignment, but it appears to be neutral. What is called 'topic' may be an accusative marker in some uses (32), but it is difficult to judge from the discussion. Verbs show optional agreement for object number (39). If the 'topic' marker is an accusative, ditransitives treat objects in a direct object manner, or make no distinction between them (see examples on 32).

Relative clause structure:

Relative clauses involve a pre- or postposed, externally-headed, relative pronoun nucleus strategy in which the verb is finite and the relative pronoun is dislocated to the end of the clause (61-2).

Verbal pronominal morphology:

There is limited (and optional) agreement for number of the object (39), but otherwise, there is no verbal pronominal morphology.

Means for encoding spatial relations:

Clitic case markers (presumably postpositions) mark locations and goals (23). Oblique comitative/instruments are also marked by a postposition (56). Examples on 23, and 92-94 also suggest that there may be relational nouns, though they are not treated explicitly in this sketch.

Other valence-affecting constructions:

11 mentions a transitivizing formative, but there is little in the way of exemplification.

Miscellaneous:

Namia has verb-verb compounding reminiscent of serialization (18), and several directional elements (79).

27. Nez Perce (Rude 1985 unless otherwise noted).

Applicative constructions:

Nez Perce has a wide range of applicative constructions (176). There is an allative applicative construction marked by *-úu*, a comitative applicative construction is marked by *-t(i)wee*, an ablative applicative construction marked by *-'áapiik*, a benefactive applicative construction marked by *-'eni* or *-'ey*. A type of construction unique to Nez Perce, to my knowledge, called a 'competitor' applicative construction by Rude, is marked by *-so'*, and an equally specialized applicative construction, glossed as 'over' by Rude, is marked by *-ca'*.

Head and dependent marking, morphological complexity:

a. dependent (97)
b. dependent (97, 134)
c. dependent (142)
d. head (31-34, 105) and dependent (83, 89ff.)
e. head (31-34, 105)
f. head (31-34, 105) and dependent (93)
g. head (31-34, 105)
h. dependent (86)
i. insufficient information

Head marking: head+floating=4
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=10

<u>Word order:</u>

Rude (1982:464) describes word order as extremely variable and does not specify a basic order.

<u>Alignment:</u>

Rude 1986 explicitly refers to Nez Perce as ergative, though evaluating this claim from descriptions of the system can be complicated. It appears that there is an accusative/three-way split in noun and pronoun marking (three-way for third person, which has distinct S, A, and O; otherwise, it is, accusative). Verb marking is accusatively aligned for non-third person objects, but ergatively aligned for third person objects. Multiple objects have a primary object alignment in terms of case marking (93).

<u>Relative clause structure:</u>

Insufficient information.

<u>Verbal pronominal morphology:</u>

Nez Perce verbal pronominal morphology codes up to two arguments, subject and object (31-34).

<u>Means for encoding spatial relations:</u>

There is an extensive set of case marking suffixes (83ff.), a few of which are involved in expressing spatial relations (Rude explicitly argues that these are true case suffixes on 120-2).

<u>Other valence-affecting constructions:</u>

Other productive morphological voices include a causative (Aoki 1969:90), and an antipassive (Rude 1986:129); Nez Perce has a periphrastic passive (Rude 1986:130).

<u>Miscellaneous:</u>

Nez Perce has translocative and cislocative directionals (48-51), and extensive (lexicalized?) instrumental noun incorporation (Aoki 69:84ff.)

28. Ngalakan (Merlan 1983).

<u>Applicative constructions:</u>

The affix *bak-* marks a benefactive applicative construction (47ff.) With intransitive bases, *bata-* marks a malefactive applicative construction and with transitive bases, the same morphology marks a comitative applicative construction (47ff.) Finally, *re-* marks a comitative applicative construction (95).

<u>Head and dependent marking, morphological complexity:</u>

a. dependent and optional head (44)
b. head (73)

c. dependent (32)
d. head and dependent (41)
e. head (87-88)
f. dependent (41)
g. head (87-88)
h. head=f
i. head=g

Head marking: head+floating=4
Dependent marking: dependent=4
Morphological complexity: head+dependent+floating=8.

Word order:

Insufficient information.

Alignment:

Nouns and pronouns pattern ergatively (40-42, 71-72). Verbal alignment is complex, but is essentially split accusative/ergative (87-88). Multiple objects have a primary object alignment (47, 50-51).

Relative clause structure:

Ngalakan relative clauses are either of the externally-headed or the adjoined variety. They are postposed. The relative clause nucleus is instantiated by a gap, and the relative clause verb is finite with a relativizer/generalized subordinator. Any argument may be relativized on using this strategy as long as it is capable of being referenced on the verb (138-9).

Verbal pronominal morphology:

Up to two arguments (subject and object) may be marked on the verb (87-88).

Means for encoding spatial relations:

The language has case suffixes, some of which encode spatial relations (40), and it also makes use of spatial adverbs in indicating spatial relations (121-2).

Other valence-affecting constructions:

There are apparently morphological causatives, though their productivity is unclear (133).

Miscellaneous:

There is verb-verb compounding reminiscent of serialization (127-9).

29. Nunggubuyu (Heath 1984).

Applicative constructions:

Nunggubuyu has a benefactive/malefactive (and possessor raising) applicative construction marked by -aG- or -wa:G- (377ff.) and a comitative applicative construction marked by anᵞji- (381ff.).

<u>Head and dependent marking, morphological complexity:</u>

a. (marginal) head (222) and dependent (213, 546)
b. dependent and head (213, 225, 546)
c. dependent (152)
d. head (202) and dependent (199)
e. head (202) and dependent (199)
f. head (202) and dependent (199)
g. head (202) and dependent (199)
h. head=f and dependent (201-2)
i. head=g and dependent (201-2)

Head marking: head+floating=5
Dependent marking: dependent=9
Morphological complexity: head+dependent+floating=14

<u>Word order:</u>

Word order is described as flexible (2).

<u>Alignment:</u>

Nouns and pronouns pattern neutrally (200). Verbal morphology is organized in a hierarchical manner (362ff.) Multiple objects have a primary object alignment (202).

<u>Relative clause structure:</u>

Relativization involves often (but not exclusively) postposed (570) externally-headed gap relatives with finite verbs and a relativizer (560ff.) This strategy is accessible to any participant (563).

<u>Verbal pronominal morphology:</u>

Up to two arguments are marked by verbal pronominal morphology (202).

<u>Means for encoding spatial relations:</u>

There are a small number of case affixes, some of which have spatial semantics (199)

<u>Other valence-affecting constructions:</u>

The language has a productive morphological causative (393ff.)

30. Paumarí (Chapman and Derbyshire 1991).

<u>Applicative constructions:</u>

Paumarí has several applicative constructions, though their productivity is not entirely clear. There is a benefactive applicative construction marked by the combination *ka-...-hi* (302-5). Next, there is an auto-benefactive applicative construction marked by *ka-...-ha* (291). *ka-va-...-hi* marks an instrumental applicative construction (304). Finally, *va-* and *vi-* mark comitative, instrumental, and what are called theme ('regarding object') object advancements (295).

Head and dependent marking, morphological complexity:

a. head (256-7)
b. head (255-6)
c. dependent (255, 260)
d. dependent (250) and head (286)
e. dependent (250) and head (286)
f. dependent (250)
g. dependent (251, 271)
h. dependent=f (250-251)
i. dependent=g (250-251)

Head marking: head+floating=4
Dependent marking: dependent=5
Morphological complexity: head+dependent+floating=9

Word order:

Basic word order varies according to clause type. In intransitive clauses, VS order is most common (163). In transitive clauses SVO is most frequent (164), but OVS and SOV are also common (165).

Alignment:

There is marking of transitive subjects, but objects are also marked, so there is a three way distinction in nominal-marking (250). Pronouns appear to be marked accusatively since pronominal subjects do not take the transitive subject marker but pronominal objects do take the object marker (250-51). Verbs have a split accusative/ergative character (286). There is a primary object treatment of objects (166, 250-1).

Relative clause structure:

Relativization is by postposed, presumably externally-headed gap relatives containing a finite verb and relativizer. S/A, O, genitives, and (other) obliques are all accessible to this strategy (238).

Verbal pronominal morphology:

There is subject agreement (286).

Means for encoding spatial relations:

There are about four clitic case adpositions (250ff.), including a generalized oblique marker which attaches to a small (seven or eight) but prototypical set of relational nouns (274-5). Body parts may also be used as relational nouns for encoding spatial relations (253-4).

Other valence-affecting constructions:

There is a productive morphological causative (184, 292-5).

<u>Miscellaneous:</u>

There are numerous directionals of various sorts (307-8, 311-2ff, 315). There are also a number of compound stems involving the root 'liver' which would appear to be an old instrumental affix (230).

31. Quechua (Weber 1989 unless otherwise noted).

<u>Applicative constructions:</u>

Quechua has what appears to be a comitative applicative construction, marked by -*:shi* (154-155), and a benefactive applicative construction marked by -*pa:* (155ff.) or -*pa*. The first of these marks a beneficiary which is highly topical and an important discourse participant. In the case of the second marker, the beneficiary does not have to have this status (159).

<u>Head and dependent marking, morphological complexity:</u>

a. head (254) and dependent (254)
b. head (54-55)
c. none mentioned
d. head (10) and dependent (55, 176)
e. head (10) and dependent (179)
f. head (10) and dependent (55)
g. head (10) and dependent
h. dependent=f (55)
i. head=g (98)

Head marking: head+floating=6
Dependent marking: dependent=5
Morphological complexity: head+dependent+floating=11

<u>Word order:</u>

Word order is SOV (15).

<u>Alignment:</u>

Nominal marking patterns accusatively (11), verbal marking patterns accusatively (98). Multiple objects have a primary object patterning (98, 180).

<u>Relative clause structure:</u>

Weber 1983 describes relativization which involves an external head, a gap nucleus, and a non-finite (substantivized) verb. The choice of subordinate form depends to some degree on the aspect of the event contained within the relative clause (25), and to some degree on the role of the nucleus (one is restricted to relativization on subjects, and the others apparently are used preferentially for relativization on objects, indirect objects, and obliques:22-24). Relative clauses may be pre- or postposed, though the former is treated as more basic in some sense (36-7).

<u>Verbal pronominal morphology:</u>

Verbs have pronominal agreement for subject and one object (10).

<u>Means for encoding spatial relations:</u>

No real adpositions are noted, though there is an extensive nominal case system which might be regarded as adpositional in nature (56-57). There are also a number of relational nouns of a prototypical sort (256-7).

<u>Other valence-affecting constructions:</u>

Other productive morphological valence-affecting constructions include a causative (161), and passive(s) (233 ff.).

<u>Miscellaneous:</u>

There is a set of four directional suffixes (121), as well as what are probably a cislocative (135-136) and an andative (137).

32. Sandawe (Dempwolff 1916 unless otherwise noted).

<u>Applicative constructions:</u>

Sandawe has a benefactive/malefactive applicative construction, marked by -χ (22-23), and perhaps also an allative applicative construction marked by -$ts'e$ (van de Kimmenade 1954:28), though discussion of the latter is incomplete.

<u>Head and dependent marking, morphological complexity:</u>

a. none (18)
b. head (22, 23)
c. dependent (van de Kimmenade 1954:16)
d. no marking mentioned
e. head (22, 23)
f. no marking mentioned
g. head (22, 23)
h. insufficient information
i. head (22, 23, van de Kimmenade 1954:18)

Head marking: head+floating=4
Dependent marking: dependent=1
Morphological complexity: head+dependent+floating=5

<u>Word order:</u>

Subjects (16) and objects (17) precede the verb, so basic word order is verb-final.

<u>Alignment:</u>

Nouns and pronouns have no case marking, so presumably they pattern neutrally. Verbal marking involves considerable allomorphy, which neither Dempwolff nor van de Kimmenade seems to have fully explained, but it appears to be neutral, as well (26).

Relative clause structure:

Insufficient information.

Verbal pronominal morphology:

Verbs bear up to three (true) pronominal markers (van de Kimmenade 1954:27).

Means for encoding spatial relations:

There are a few local case markers noted for nouns (33-38), though their exact status is unclear from the discussion.

Other valence-affecting constructions:

Sandawe has two morphological causative constructions (van de Kimmenade 1954:29)

33. Secoya (Johnson and Levinsohn 1990).

Applicative constructions:

Secoya has a benefactive applicative construction marked by -cai (64).

Head and dependent marking, morphological complexity:

a. none (41)
b. none (41)
c. dependent (38) or none (37)
d. dependent (ergative:45) or none and head (66)
e. dependent (ergative:45) or none and head (66)
f. dependent (zero-marking or object marker:48)
g. dependent (zero-marking or object marker:48)
h. dependent=f, or animate allative (48)
i. dependent=g, or animate allative (48)

Head marking: head+floating=2
Dependent marking: dependent=7
Morphological complexity: head+dependent+floating=9.

Word order:

Insufficient information.

Alignment:

Agents may optionally be marked with an ergative case; objects may optionally be marked for an objective case. Thus, nominal relations are either ergative, three-way, or neutral. Verbal agreement shows an accusative pattern. There does not appear to be any difference in the treatment of multiple objects, except that indirect objects/secondary objects may sometimes be treated obliquely (48).

Relative clause structure:

35 describes a system of verbal noun morphology, distinguishing on the one hand between agentive, non-agentive, and locative/temporal forms, and on the other between completed and non-completed actions. These appear to fulfill the function of relativization (see 77ff.) This strategy then involves externally-headed, gap nucleus relativization, with a finite verb form and relativizer. An alternative strategy (78-9) involves simply using a bare verb stem with no relativizer, but it is not clear what positions in the relativization hierarchy are accessible to it.

Verbal pronominal morphology:

Verbs agree for third singular masculine vs. feminine, vs. all other subjects (66).

Means for encoding spatial relations:

Clitic case markers include the ergative marker, which also has source semantics, and allative and animate allative NP case clitics (46-48). There are also what are described as locative suffixes (31) and locative nouns (32-3), which do not appear to change the syntactic category of the element they are added to, and so would best be regarded as relational nouns.

Other valence-affecting constructions:

No other valence-affecting constructions are noted.

34. Shasta (Silver 1966).

Applicative constructions:

Shasta has a benefactive applicative construction marked by -yí-~yínt (159).

Head and dependent marking, morphological complexity:

a. dependent (184)
b. dependent (184, 201)
c. insufficient information
d. head (101-2)
e. presumably head
f. insufficient information
g. head, in some instances (130)
h. insufficient information
i. insufficient information

Head marking: head+floating=3
Dependent marking: dependent=2
Morphological complexity: head+dependent+floating=5

Word order:

Insufficient information.

Alignment:

There is no discussion of nominal or pronominal case phenomena for core grammatical functions, so presumably these are both neutral. Verbs bear subject agreement (101-2), and it appears that there may be some marginal split-ergative marking (130), but it is difficult to tell from the discussion. There is no information regarding the alignment of multiple objects.

Relative clause structure:

Insufficient information.

Verbal pronominal morphology:

Subject is marked (101-102), and there is in some cases indication of object (130), which appear to be conflated subject-object markers, so two arguments may be marked.

Means for encoding spatial relations:

There are several case suffixes, including a locative, directionals (hither and thither), and ablative (179).

Other valence-affecting constructions:

There may be an impersonal passive (130). There is also a generalized transitivizer which often has causative semantics (156-8).

Miscellaneous:

Shasta has several verbal motion adverbial elements which resemble directionals ('upwards motion', 'up and down motion', etc.) (142ff.)

35. Shipibo (Faust W. 1973 unless otherwise noted).

Applicative constructions:

Shipibo has three applicative constructions. -quin or -quiin marks a comitative applicative construction (70-71). A benefactive or malefactive applicative construction is marked by the affix -shon (71), and a specifically malefactive applicative is marked by -naan~-n (72).

Head and dependent marking, morphological complexity:

a. dependent (69)
b. dependent ('possessive pronouns':12)
c. none apparent (32)
d. dependent (ergative:32)
e. dependent (ergative:15, 31)
f. dependent (unmarked)
g. dependent (unmarked)
h. dependent=f
i. dependent=g (Loriot et al. 40)

Head marking: head+floating=0
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=6.

Word order:

SOV order, with some variation possible (37).

Alignment:

Nouns pattern ergatively (32ff.). Pronouns also have an ergative alignment (15, 31). Verbs show only minimal agreement (for number:11).

Relative clause structure:

Though the verb forms of relative clauses are described as participles, they are really identical with finite forms (Loriot et al. 57); verbs do not appear to show the full aspectual paradigm, however. Relativization otherwise involves an externally-headed, gap strategy (with an optional relative pronoun). Subjects (both S and A) or objects may be relativized on using this strategy (84-86, Loriot et al. 31-32). In most cases, relative clauses are postposed to an overt head.

Verbal pronominal morphology:

There is no verbal pronominal agreement morphology (7). There is a plural marker which is used in a purely pronominal manner (11).

Means for encoding spatial relations:

There is a large group of case suffixes (e.g. 42, 54-55, 57-62, 81) including ablatives and several locatives. These involve some allomorphy and there is no clear evidence that they should be analyzed as clitic adpositions. There are also several elements called adverbs (56-57), and examples on 61 and the description of them by Loriot et al. (38, 60-61) suggests that they may be dependents of case suffix/adpositions, and so might best be regarded as relational nouns.

Other valence-affecting constructions:

Shipibo has a morphological causative (70). 136-138 discuss other transtivization strategies of uncertain productivity. 146ff covers a number of formatives which detransitivize verbs, but their productivity is also unclear.

Miscellaneous:

The language has a cislocative (73), and an element which means 'to go and return' (31). 125 mentions some other directional elements involving upward or downward motion components. There are also a number of incorporated instrumental affixes (body parts) discussed on 144ff.

36. Shoshone (Dayley 1989).

Applicative constructions:

The Shoshone affix -ngkün marks an applicative construction which refers to dative/goal or benefactive participants (115-119).

Head and dependent marking, morphological complexity:

a. dependent (possessive:185-186)
b. dependent (possessive:130-131)
c. dependent (254, 262, 273)
d. dependent (subjective:26)
e. dependent (subjective:130-131)
f. dependent (objective:26)
g. dependent (objective:130-131)
h. dependent=f
i. dependent=g

Head marking: head+floating=0
Dependent marking: dependent=7
Morphological complexity: head+dependent+floating=7.

Word order:

Shoshone is essentially verb-final (13ff.), although some variation is possible.

Alignment:

Nouns and pronouns pattern accusatively (26, 130). Multiple objects receive no differential treatment (40). Verbal number agreement has the common stem-suppletive ergative pattern (72) or an accusative pattern (78-79); otherwise verbs are neutral.

Relative clause structure:

Relative clause verbs are marked with relativizers which correspond to same- and different subject subordinators (and which also indicate tense distinctions). Subject relatives are formed by means of the same-subject subordinator and object relatives are formed by means of the different subject subordinator (361); relative clause verbs also agree with the relative clause head in case (358). The relative clause head is external, and the relative clause nucleus may optionally be instantiated by a pronominal element which agrees in case and number with the head (357, 362). Relativization on obliques requires either a pronominal or full noun instantiation of the relative clause nucleus (368).

Verbal pronominal morphology:

Verbs agree with subjects and objects in number to some extent, but there is no pronominal morphology, strictly speaking.

Means for encoding spatial relations:

The language has a large number of postpositions, some of which do not indicate spatial relations and some of which do (192-193 and 209-210). In addition, there are a number of other elements described as postpositions which may be augmented by a variety of

elements which themselves appear to be postpositions (201-203). The augmentable postpositions are probably best regarded as relational nouns.

Other valence-affecting constructions:

The language has both morphological passive and antipassive constructions (50-51, 104-106, 111-112). When used with intransitives, the applicative marker discussed above forms causative verbs (112-114).

Miscellaneous:

There are several directional elements which may be associated with the verb (64ff.) The language also has a large number of incorporated instrumental affixes (92ff.)

37. Takelma (Sapir 1922).

Applicative constructions:

Takelma has several elements which mark what are either clearly, or most likely, applicative constructions. The element *wa-* marks what appears to be an instrumental applicative construction (91-2). A comitative applicative construction is marked by *-(a)gw* (137-141). A benefactive/dative applicative (Sapir's 'indirective') is marked by *-d(s)-* 141ff.); the causative (see below) is apparently used to form benefactive applicatives with transitive bases (145-148).

Head and dependent marking, morphological complexity:

a. head (231-2, 284)
b. head (231-2, 284)
c. none (256)
d. head (159, 284)
e. head (159, 284)
f. head (159, 284)
g. head (159, 284)
h. insufficient information
i. insufficient information

Head marking: head+floating=6
Dependent marking: dependent=0
Morphological complexity: head+dependent+floating=6.

Word order:

Text examples indicate Takelma has verb-final order, but there is no explicit discussion of word order.

Alignment:

Nouns and pronouns pattern neutrally (282). Verbs have essentially accusative alignment, though there is borderline split-S treatment (160-167, 284).

Relative clause structure:

Insufficient information.

<u>Verbal pronominal morphology:</u>

Verbs show pronominal agreement for up to two arguments (284).

<u>Means for encoding spatial relations:</u>

Verbal directional elements are also used as prepositional elements (86), as are body parts (73). At least some prepositional elements may also occur as postposed, possessed relational nouns (241). There are also a number of postpositional elements (243ff.)

<u>Other valence-affecting constructions:</u>

There is a causative (135-7), an antipassive (149-151), and a passive (180-1).

<u>Miscellaneous:</u>

There are a large number of incorporated instrumental body part elements in the verbal complex (72ff.) and a large class of verbal directional elements (86ff.)

38. Tepehua (Watters 1988).

<u>Applicative constructions:</u>

Tepehua has a dative/goal applicative (134) marked by -ni; in some cases -ni also has locative or benefactive semantics (152). ɬi:- is a generalized applicative marker which refers to substitutives, reason/circumstantial, ablative, and allatives (157-8). pu:- is likewise a generalized marker, indicating mainly locative and instrumental applicative constructions (174-5). Finally, t'a:- marks a comitative applicative construction (184).

<u>Head and dependent marking, morphological complexity:</u>

a. head (452)
b. head (452)
c. dependent (378)
d.head (285, 291)
e. head (285, 291)
f. head (285, 291)
g. head (285, 291)
h. insufficient information
i. some head marking (310)

Head marking: head+floating=7
Dependent marking: dependent=1
Morphological complexity: head+dependent+floating=8.

<u>Word order:</u>

Watters (12) notes a basic order of (S)VO.

279

Alignment:

Nouns are neutral (452). The patterning of independent pronominals is not discussed, as far as I can tell. Watters (84) observes that grammatical relations (and hence access to verb morphology) are determined in large part by a hierarchy.

Relative clause structure:

Relative clauses are postposed (12), and they appear to contain finite verb forms with an invariant relativizer, which Watters dubs a relative pronoun, possibly due to its obvious etymological relatedness to an independent pronominal. Otherwise, the information provided on relative clause structure is sketchy (467-472).

Verbal pronominal morphology:

Verbs may code three arguments (i.e. subject and up to two objects) under appropriate circumstances in beneficiary/recipient applicative constructions: one of the objects must be first or second person, and the other must be third person (309-310).

Means for encoding spatial relations:

There are two or three prepositions (473). Others are borrowed from Spanish (473), and there are some relational nouns (484).

Other valence-affecting constructions:

There are morphological causatives (187), a passive, and an antipassive (200).

Miscellaneous:

Tepehua has verb-verb compounding reminiscent of serialization (87ff.) There is also a wide range of incorporated instrumental nouns (215-217). The language has a directional element which indicates associated motion going and returning (248-249), and two elements indicating proximal and distal associated motion (276ff.)

39. Tukang Besi (Donohue 1995, Mark Donohue, p.c.).

Applicative constructions:

Tukang Besi has three applicative constructions. The first, marked by *-ngkene*, is a comitative applicative construction (218ff.). *-(VC)i*, the exact form of which varies according to the verbal stem's final consonant, marks locative applicatives with somewhat variable semantics (233ff.). Finally, a generalized applicative marker is *-ako*: benefactive, dative/goal, instrumental, purpose, and cause (221ff.) Chapter 10 contains an extensive discussion of these applicative constructions' semantics and morphosyntax.

Head and dependent marking, morphological complexity:

a. dependent (326-7)
b.head or dependent (123-4)
c. none
d. head and dependent (44, 56-7)
e. head (44, 56-7, 108)
f. head and dependent (44, 56-7)

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

g. head (44, 56-7, 108)
h. head=f and dependent=f (48, 56-7)
i. head=g (48, 56-7)

Head marking: head+floating=5
Dependent marking: dependent=4
Morphological complexity: head+dependent+floating=9

Word order:

Basic word order is verb initial (44).

Alignment:

Nominals are marked by adpositional elements (called articles), and what receives 'nominative' marking depends on cooccuring verbal cross-referencing morphology. If there is verbal object marking, the object is marked nominative. If there is no verbal object marking, the subject is marked nominative. Thus, depending on verbal marking, there would appear to be an ergative/accusative split in nominal marking. Alignment of verbal morphology is accusative (44). Objects of basic ditransitives are given a primary object treatment (48).

Relative clause structure:

Core arguments may be relativized on using a postposed, non-finite relative clause form (which differs according to the relative clause internal function of the head as S/A, O, or subcategorized instrumental) in conjunction with a gap nucleus and an external head (355-6). Internally-headed relatives (full noun instantiation internal to the relative and a finite verb) are possible for arguments which bear nominative case and either S or O function both in the relative and the main clause (374-376).

Verbal pronominal morphology:

Verbs bear markers for subject and (usually) object (44).

Means for encoding spatial relations:

There are between five and eight adpositional elements, some of which mark spatial relations (310).

Other valence-affecting constructions:

The language has morphological causative (Chapter 9) and passive constructions (264).

Miscellaneous:

There is serialization (49 and Chapter 8) and there is some instrumental incorporation (275).

40. Tzotzil (Aissen 1987 unless otherwise noted).

Applicative constructions:

Tzotzil has a recipient/benefactive applicative construction marked by -b(e) (104ff.)

Head and dependent marking, morphological complexity:

a. head (40)
b. head (43-44)
c. none?
d. head (40)
e. head (40-50)
f. head (40)
g. head (40-50)
h. head=f
i. head=g (107)

Head marking: head+floating=6
Dependent marking: dependent=0
Morphological complexity: head+dependent+floating=6.

Word order:

Basic word order is VOS (1).

Alignment:

Nouns (1) and pronouns pattern neutrally (de Delgaty and Sánchez 1996:391), and verbs are ergatively marked (2). In ditransitive clauses there is obligatory use of the recipient benefactive applicative construction, yielding an essentially primary object patterning of multiple objects (106-107).

Relative clause structure:

Insufficient information (5).

Verbal pronominal morphology:

Verbs agree with subjects and with one object (40).

Means for encoding spatial relations:

There are three prepositions and one relational noun (11).

Other valence-affecting constructions:

Other productive morphological voice oppositions include passive (61), and an antipassive (noted by Dayley 1983:108, but strangely, not by Aissen 1987).

41. Urubu-Kaapor (Kakumasu 1986).

Applicative constructions:

Urubu-Kaapor has a comitative applicative construction marked by -ru (394).

Head and dependent marking, morphological complexity:

a. none

b. head (369)
c. none (373-4:compounding of head and modifier)
d. dependent (368) and head (392)
e. dependent (379) and head (392)
f. dependent (368)
g. dependent (379)
h. dependent (394)
i. probably dependent (see examples on 383)

Head marking: head+floating=3
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=9.

Word order:

Word order is verb-final: SOV and OSV in transitive clauses (327-8), SV in intransitive clauses (331).

Alignment:

Nominal (and presumably pronominal) marking is accusative (368), though the 'accusative' marker is sometimes used in marking S and A (351). Verbs agree with subjects, so verbal alignment is essentially accusative (392). However, the treatment of stative verbs, discussed on 392-4, (for which only 3s subjects show verbal pronominal agreement, and in which case the agreement corresponds to the 3s possessor prefix,) suggests that verbal marking should at least be regarded as split accusative/stative.

Relative clause structure:

376-7 discuss two nominalizations which are used in relativizations on A or instruments vs. S and O, but discussion is insufficient.

Verbal pronominal morphology:

Verbs agree with one argument (392).

Means for encoding spatial relations:

There are several 'postpositions' (7, 382-4), which have nominal characteristics (e.g. noun classes), and so appear to be relational nouns.

Other valence-affecting constructions:

There is a productive morphological causative (341).

42. Wintu (Pitkin 1984).

Applicative constructions:

Wintu has a comitative applicative construction marked by -i·l (108-109). In addition, there is a benefactive applicative construction marked by -paq (113-114).

Head and dependent marking, morphological complexity:

a. dependent (216-217)
b. dependent (219) and head (215, 266)
c. insufficient information
d. head and dependent (152-3ff.)
e. head and dependent (152-3ff.)
f. dependent (216)
g. dependent (216)
h. insufficient information
i. insufficient information

Head marking: head+floating=3
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=9

Word order:

Insufficient information.

Alignment:

Substantives (nouns and pronouns) pattern accusatively (200). Verbs agree for subject person (136ff.), and therefore also have an accusative alignment.

Relative clause structure:

Insufficient information.

Verbal pronominal morphology:

Verbs show agreement for subject person (136ff.)

Means for encoding spatial relations:

There is a single locative case marker (200, 217-218).

Other valence-affecting constructions:

Wintu has a morphological causative construction (111) and a passive construction (115-116).

Miscellaneous:

The language has a large class of directional elements associated with verbs (82).

43.   Wolof (Diagne 1971 and Kevin Moore, p.c.).

Applicative constructions:

Wolof has at least two applicative constructions, and perhaps others. One of these is a benefactive applicative construction marked by -al. The other is a generalized applicative construction, marked by -e, which mostly refers to instrumental or locative objects, but also occasionally to manner and ablative objects.

Head and dependent marking, morphological complexity:

a. head or dependent
b. head
c. dependent (=relative pronoun)
d. head/floating
e. head/floating
f. none
g. dependent
h. none
i. dependent=g

Head marking: head+floating=4
Dependent marking: dependent=3
Morphological complexity: head+dependent+floating=7.

Word order:

Basic word order is verb-medial.

Alignment:

Nominals pattern neutrally and pronominals and verbs exhibit accusative alignment. Multiple objects are not distinct from each other.

Relative clause structure:

Relative clauses are postposed and externally-headed with a series of subordinate agreement markers used in conjunction with the relative clause verb and a relative pronoun. This strategy is available to S, A, and O, in addition to applicative objects. Another strategy, with what should probably be considered to be an invariant relativizer in addition to the machinery used in the first strategy, allows relativization on locations.

Verbal pronominal morphology:

Verbs are accompanied by pronominal elements which agree with the subject only.

Means for encoding spatial relations:

There is a class of prepositions containing two highly versatile elements, and a fairly large (around a dozen at least) class of relational nouns.

Other valence-affecting constructions:

There is a productive morphological causative construction.

Miscellaneous:

There are andative and venitive directional elements.

44. Yagua (Payne and Payne 1990).

Applicative constructions:

Yagua has an instrumental/comitative applicative construction marked by -ta (403ff.)

Head and dependent marking, morphological complexity:

a. head (348-9)
b. head (348-9)
c. dependent (454)
d. head (362)
e. head (362)
f. floating (365)
g. floating (365)
h. floating (365)
i. floating (365)

Head marking: head+floating=8
Dependent marking: dependent=2
Morphological complexity: head+dependent+floating=10

Word order:

Stated basic word order is verb-initial (259).

Alignment:

There is no grammatically-relevant marking of nominals, and independent pronominals are also neutral (369-70). Pronominal clitic morphology (which is obligatory, though not strictly associated with the verb) has a split-S pattern in the third person (253, 364). There is no detectable syntactic difference between non-subject arguments of trivalent verbs (255).

Relative clause structure:

Relativization is accomplished by a postposed, externally-headed strategy (342-3), to which subjects, objects, and obliques all have access (344-6). The relative clause verb form is finite, and the boundary between the relative and main clauses is marked either by a relativizer, or by a relative pronoun; the relative pronoun is marked for case if the item relativized on is a postpositional entity (342). Expression of the head internal to the relative clause by means of pronominal agreement clitics is possible, but usually omitted except in the case of the invariant relativizer (343).

Verbal pronominal morphology:

There is pronominal clitic morphology for up to three arguments, though this is distributed with respect to the whole clause, and not just the verb (253, , 255, 364).

Means for encoding spatial relations:

There are about thirty postpositions (378), and Payne 1990a distinguishes between concrete and abstract ones. Concrete postpositions are presumably relational nouns since they may have abstract postpositions suffixed to them (Payne 1990a:123). Abstract

postpositions are phonologically bound to preceding constituents and exhibit some allomorphic variation, but they presumably are clitic adpositions rather than true case suffixes.

Other valence-affecting constructions:

There is no passive construction, but there is a fairly productive anti-causative (278). Yagua has a productive morphological causative (284ff.)

Miscellaneous:

A variety of directional categories are marked verbally (397: action performed on arrival, action performed while moving to some location; 411: upwards and downwards motion, etc.)

45. Yavapai (Kendall 1976).

Applicative constructions:

Yavapai has a benefactive applicative construction marked by -(w)o. With intransitive bases, this suffix marks a causative (27).

Head and dependent marking, morphological complexity:

a. Insufficient information
b. head (59-60)
c. Insufficient information
d.dependent (subject marker:68) and head (5-8)
e. dependent (subject marker:58) and head (5-8)
f. dependent (zero-marking:42) and head (5-8)
g. dependent (zero-marking:42) and head (5-8)
h. dependent and head=f
i. dependent and head=g

Head marking: head+floating=5
Dependent marking: dependent=4
Morphological complexity: head+dependent+floating:9

Word order:

Word order is SOV (235).

Alignment:

Subjects (S and A) are marked for case. There is no case marking of direct or indirect objects (42). Thus, nominal and pronominal alignment is accusative. Parts of verbal morphology pattern neutrally (second and third persons), and other parts tend towards an inverse system (interaction of first person with second and third) (7-8). Multiple objects exhibit a primary object patterning (8).

Relative clause structure:

There is no concise summary of relative clause typology, but a consideration of the discussion and examples in Chapter 5 indicates that there are multiple strategies. First,

relativization on S and A is accomplished via a posposed (207), externally headed, gap nucleus structure in which the verb is finite with a relativizer (205-206). Object relatives involve a similar strategy, but for these, the verb is simply finite (209). A disfavored internal head + finite strategy may be used for relativization on non-core participants (218ff.)

Verbal pronominal morphology:

Verbs agree with subjects and one object (5-8).

Means for encoding spatial relations:

Yavapai has various elements, referred to as case affixes, including two glossed locative-directional (69) and another which expresses motion inside or into a point of reference (70). Chapter 2 discusses the distribution of two of these in non-nominal phrases, which would suggest that they are better treated as clitic case adpositions.

Other valence-affecting constructions:

It would appear there are causatives (referred to in passing on 74), in addition to the causative use of the benefactive applicative morphology with intransitive bases mentioned above.

46. Yawelmani (Newman 1944 and William F. Weigel, p.c.).

Applicative constructions:

Yawelmani has a comitative applicative construction marked by -mix (85-6). It also has what Newman terms an indirective, which is a generalized applicative marking dative/goal, benefactive, and allative applicatives (86-87). This construction is marked by -sit.

Head and dependent marking, morphological complexity:

a. dependent (229-30)
b. dependent (199-200)
c. highly marginal dependent
d. dependent (229-30)
e. dependent (195-6)
f. dependent (229-30)
g. dependent (196)
h. dependent=f (229-30)
i. dependent=g (201)

Head marking: head+floating=0
Dependent marking: dependent=6
Morphological complexity: head+dependent+floating=6

Word order:

Word order is free.

Alignment:

Nouns (195-6) and pronouns (229-30) pattern accusatively. Verbs are neutral.

Relative clause structure:

Relative clauses are either externally-headed, gap, or internally-headed structures with a non-finite verb form.

Verbal pronominal morphology:

There is no verbal pronominal morphology.

Means for encoding spatial relations:

A few case markers express spatial relations.

Other valence-affecting constructions:

Yawelmani has passive (1944:83) and causative constructions (90-95).

47. Yimas (Foley 1991).

Applicative constructions:

Yimas *taŋ-* marks a comitative applicative construction (303) with occasional benefactive semantics (307). A more consistently benefactive/malefactive applicative construction marker is *-ŋa* (308-311). *ira-* marks an allative applicative construction (311ff.) There are a few other elements which appear to be valence-increasers, but characterization of them in terms of standardly recognized thematic roles proves difficult; they also involve adverbial semantics which is not relevant to any applicativization that they may encode.

Head and dependent marking, morphological complexity:

a. dependent (177-178, 220ff.)
b. dependent (25, 177-178, 223)
c. dependent if separated from head, but class of true adjectives is extremely small (93-94)
d. head (193ff.)
e. head (193ff.)
f. head (193ff.)
g. head (193ff.)
h. head (208)
i. head (208)

Head marking: head+floating=6
Dependent marking: dependent=2
Morphological complexity: head+dependent+floating=8.

Word order:

SOV and OVS orders are common, but Foley claims no basic word order is distinguishable (369).

Alignment:

Nouns (90-92) and pronouns (111) pattern neutrally. Verbs have first and second person agreement markers organized on what looks like a tripartite basis (different markers for A, S, and O), but Foley casts this system in accusative terms. Third person pronominals in the verb pattern ergatively (209). Indirect object pronominals are distinguished from direct object pronominals in the third (but not first and second) person (208), so at least to some degree, Yimas has a direct object treatment of multiple objects.

Relative clause structure:

Relativizations in Yimas are described as being either finite or non-finite, the latter having a habitual or characteristic aspectual connotation (404). In both cases, relative clauses are externally-headed and their nucleus is instantiated by a gap. Finite relativizations, as described by Foley, actually are not finite in the sense used here, in that they may not bear pronominal markers for all arguments of the relative clause: the marker which would correspond to the nucleus is systematically absent (413-4). In addition to this difference from main clauses, what is described as a nominalizer (413) is also an obligatory comcommitant of such clauses. Finite relativizations may relativize on any core argument, or any locational or temporal expression (405); non-finite relativizations may only relativize on S or A (405). Relative clauses are usually postposed in Foley's examples, but this does not appear to be a categorical restriction.

Verbal pronominal morphology:

Trivalent (or applicative) verbs may bear up to three pronominal affixes (208).

Means for encoding spatial relations:

There are about five of what Foley terms 'free locationals' (105), which are similar to English locational adverbs. Yimas also has 'locational postpositions' (107), comparable to English prepositions, some of which are just in the process of being grammaticalized as postpositions from nouns. A few other postpositions (107) Foley claims are more like case markers in that their objects do not occur in the oblique case and their meanings are more abstract.

Other valence-affecting constructions:

There are productive morphological (direct and indirect) causatives (291).

Miscellaneous:

The language has productive serialization (321ff.) and several verbal directional elements (346ff.)

48. Yuchi (Wagner 1934).

Applicative constructions:

Yuchi has an instrumental applicative construction marked by *hi-* (357-8). *k'ɔ--* is perhaps a comitative applicative marker (337). 359-61 describes locative prefixes, some of which may be applicatives, most notably *Ti-* 'inside', *Ta-* 'on, on top of', and *po-* 'under', *kya-*

'through', Pɛ- 'over', 'above', *ya-* 'across', but it is difficult to tell for certain from the description.

Head and dependent marking, morphological complexity:

a. head (319)
b. head (337ff.)
c. none mentioned
d. head (324-5)
e. head
f. head (324-5)
g. head
h. head (332)
i. head

Head marking: head+floating=8
Dependent marking: dependent=0
Morphological complexity: head+dependent+floating=8

Word order:

Nominals precede the verbal complex (313), so word order is verb-final.

Alignment:

Case marking of nouns and independent pronominals does not occur, so these pattern neutrally. There is some split-S treatment in verbal marking (331); otherwise, verbal marking is accusative (325-31). Direct and indirect objects are marked by independent series of pronominal elements (332), and multiple objects show a direct object pattern.

Relative clause structure:

Relative clauses appear to involve a postposed finite verb form plus a relativizer with an external head and a gap; this strategy allows relativization on S/A, O, and at least some obliques (examples on 367-8). Use of the relativizer also appears to be optional (368), but exactly what difference is involved, if any, is unlear.

Verbal pronominal morphology:

Subject and object are always encoded by pronominal morphology (315).

Means for encoding spatial relations:

There are four (nominal) locative suffixes with highly general spatial semantics (324).

Other valence-affecting constructions:

Some causative-like morphological elements are discussed, but their productivity is unclear (347-49).

49. Zoque (Engel and Allhiser de Engel 1987).

<u>Applicative constructions:</u>

There is what appears to be a generalized applicative construction with somewhat opaque semantics marked by *co-*; the roles referred to by this construction include comitative, benefactive, and perhaps also reason or circumstantial (371). *nø-* marks a straightforward comitative applicative construction (372) and *-jay* marks benefactive and malefactive applicative constructions (392-3). In addition, the combination *nøc- -'øy* marks what appear to be locative applicatives, though the productivity of this combination is unclear (374-5).

<u>Head and dependent marking, morphological complexity:</u>

a. head and dependent (342-3)
b. head and dependent (342-3)
c. dependent (353)
d. dependent (ergative:344) and head (378-382)
e. head (378-382, 349)
f. dependent (absolutive:344) and head (378-382)
g. head (378-382, 349)
h. no information
i. no information

Head marking: head+floating=6
Dependent marking: dependent=5
Morphological complexity: head+dependent+floating=11.

<u>Word order:</u>

Various word orders appear to be possible (347-8), but the issue is not addressed explicitly.

<u>Alignment:</u>

Nouns pattern ergatively (344). Pronouns pattern neutrally (349). Verbal marking is somewhat syncretic, but the patterning which is discernible is neutral (378-82).

<u>Relative clause structure:</u>

The form called a participle appears to be a postposed finite verb with a relativizer (400), although this is not entirely clear. There is one relativizer used for absolutives (400-1), and another used for ergatives and possessors which is identical to the ergative case marker (401). The relative clause nucleus is instantiated by a gap. There is a separate relativizer used for locations (403).

<u>Verbal pronominal morphology:</u>

Verbs agree with up to two arguments, subjects and objects (378-382).

<u>Means for encoding spatial relations:</u>

There is a large set of clitic adpositions which may have either nouns or entire clauses as dependents (356-8).

Other valence-affecting constructions:

Zoque has causative (373) and passive voices (392).

Miscellaneous:

There is a verbal affix which indicates associated motion upwards (369). Zoque allows verb-verb compounding reminiscent of serialization (375-6).

50. Zuni (Newman 1965 unless otherwise noted).

Applicative constructions:

The Zuni 'indirective', marked by *ʔaC-*, where the character of the last consonant varies considerably in accordance with the initial consonant of the base it is attached to, appears to refer to a variety of participants: at least datives/goals, allatives, and locatives are included among the examples of its use (44).

Head and dependent marking, morphological complexity:

a. insufficient information
b. dependent (possessive pronoun:61)
c. none mentioned
d. head (S/O agreement for number only)
e. dependent (60) and head (number only)
f. head (S/O agreement for number only)
g. dependent (60) and head (number only)
h. insufficient information
i. insufficient information

Head marking: head+floating=3
Dependent marking: dependent=2
Morphological complexity: head+dependent+floating=5

Word order:

The most common word order is SOV (75).

Alignment:

There is reportedly a case distinction between subject and object, though the distinction is only marked optionally (Bunzel 1933:497-8); thus, nouns may be regarded as having either an accusative or a neutral alignment. Pronouns exhibit an accusative alignment (60). Verbs also have a minor ergative alignment in terms of number agreement, but otherwise are neutral (43, 45, 53).

Relative clause structure:

Relativization (discussed briefly by Bunzel 1933:492-3) appears to be accomplished by gap nucleus, possibly (whether verbs bear relevant number agreement for all arguments is unclear) finite verb forms, with relativizers which vary according to tense; at least subjects and direct objects are accessible to this strategy. All examples are headless, however, such

that it is difficult to determine the order that the relative clause would have with respect to an external head.

<u>Verbal pronominal morphology:</u>

Verbs agree with subjects (S and A) and for some predicates, with object, for number (43, 45, and 53) only.

<u>Means for encoding spatial relations:</u>

There are about five spatially oriented case clitics (66), which Bunzel 1933 (506-7) treats as postpositional; one of these may be attached to another one, so it is probably intermediate between postposition and relational noun.

<u>Other valence-affecting constructions:</u>

The language has a morphological causative (51).

<u>Miscellaneous:</u>

Bunzel 1933 notes that there is productive verb-verb compounding (441-2).

Bibliography

Aissen, Judith. 1983. Indirect object advancement in Tzotzil. Studies in Relational Grammar 1, ed. by David Perlmutter, 272-302. Chicago: University of Chicago Press.

Aissen, Judith. 1987. Tzotzil clause structure. Dordrecht: Kluwer.

Allen, Barbara J. and Donald Frantz. 1983. Advancements and verb agreement in Southern Tiwa. Studies in Relational Grammar 1, ed. by David Perlmutter, 303-314. Chicago: University of Chicago Press.

Alsina, Alex and Sam Mchombo. 1990. The syntax of applicatives in Chichewa: Problems for a theta theoretic asymmetry. Natural language and linguistic theory 8:493-506.

Alsina, Alex and Sam Mchombo. 1993. Object asymmetries and the Chichewa applicative construction. Theoretical aspects of Bantu grammar, ed. by Sam Mchombo, 17-45. Stanford: CSLI.

Aoki, Haruo. 1970. Nez Perce grammar. UCPL 62. Berkeley: UC Press.

Baker, Mark. 1985. The Mirror Principle and morphosyntactic explanation. Linguistic inquiry 16:373-416.

Baker, Mark. 1988a. Incorporation: A theory of grammatical function changing. Chicago: University of Chicago Press.

Baker, Mark. 1988b. Theta theory and the syntax of applicatives in Chichewa. Natural language and linguistic theory 6:353-389.

Baker, Mark. 1990. Elements of a typology of applicatives in Bantu. Current approaches to African linguistics 7, ed. by John Hutchison and Victor Manfredi, 111-124. Dordrecht: Foris.

Baker, Mark. 1991. On the relation of serialization to verb extensions. Serial verbs: Grammatical, comparative and cognitive approaches, ed. by Claire Lefebvre, 79-102. Amsterdam/Philadelphia: John Benjamins.

Baker, Mark. 1992. Thematic conditions on syntactic structures: Evidence from locative applicatives. Thematic structure: Its role in grammar, ed. by Iggy Roca, 23-46. New York: Foris.

Baker, Mark. 1996. The polysynthesis parameter. New York: Oxford University Press.

Barnes, Jonathan. 1998. Tsuu khaa tii hla?: Deixis, demonstratives and discourse particles in Lai Chin. Linguistics of the Tibeto-Burman Area 21.1:53-86.

Biligiri, Hemmige S. 1965. Kharia: Phonology, grammar and vocabulary. Poona: Deccan College Postgraduate and Research Institute.

Blake, Barry. 1977. Case marking in Australian languages. Canberra: Australian Institute of Aboriginal Studies.

Blake, Barry. 1979. A Kalkatungu grammar. Pacific Linguistics Series B, No. 57. Canberra: The Australian National University.

Böhm, Roger. 1986. Indirect object advancement: From Relational to Case Grammar (via Kalkatungu). Australian journal of linguistics 6:73-105.

Bonvillain, Nancy. 1973. A grammar of Akwesasne Mohawk. Ethnology Division Paper No. 8. Ottawa: National Museum of Man.

Bresnan, Joan and Jonni M. Kanerva. 1989. Locative inversion in Chichewa: A case study of factorization in grammar. Linguistic inquiry 20.1:1-50.

Bresnan, Joan and Lioba Moshi. 1990. Object asymmetries in comparative Bantu syntax. Linguistic inquiry 21:147-185.

Bright, William. 1957. The Karok language. UCPL 13. Berkeley: UC Press.

Broadwell, Aaron. 1986. Choctaw syntax and the binding theory of switch-reference. UCLA M.A. thesis.

Bruce, Les. 1984. The Alamblak language of Papua New Guinea (East Sepik). Pacific Linguistics Series C, No. 81. Canberra: The Australian National University.

Bunzel, Ruth L. 1933. Zuni. Handbook of American Indian languages, ed. by Franz Boas, Part 3, 385-515. Glückstadt, Hamburg, and New York: J. J. Augustin and Columbia University Press.

Capell, Arthur. 1930. The language of Inakona, Guadalcanar, Solomon Islands. Journal of the Polynesian Society 39:113-136.

Carochi, Horacio. 1645 (1983 reprint). Arte de la lengua mexicana. Edición facsimilar de la publicada por Juan Ruyz en la ciudad de México, 1645. Mexico City: Universidad Nacional Autónoma de México.

Chafe, Wallace. 1987. Cognitive constraints on information flow. Coherence and grounding in discourse, ed. by Russell Tomlin, 21-51. Philadelphia: John Benjamins.

Chafe, Wallace. 1994. Discourse, consciousness, and time: The flow and displacement of conscious experience in speaking and writing. Chicago: The University of Chicago Press.

Chapman, Shirley and Desmond C. Derbyshire. 1991. Paumarí. Handbook of Amazonian languages, ed. by Desmond C. Derbyshire and Geoffrey K. Pullum, Vol. 3, 161-352. Berlin: Mouton.

Chelliah, Shobhana L. 1997. A grammar of Meithei. Berlin: Mouton.

Chung, Sandra. 1976. An object-creating rule in Bahasa Indonesia. Linguistic inquiry 7:41-87.

Church, Eric. 1981. Le systeme verbal du Wolof. Documents Linguistiques, No. 27. Dakar: Departement de Linguistique Générale et de Langues Négro-Africaines de la Faculte des Lettres et Sciences Humaines de l'Universite de Dakar.

Cisse, Mamadou. 1994. Contes Wolof modernes. Paris: Ed. l'Harmattan.

Codrington, R.H. 1885. The Melanesian languages. Oxford: Oxford University Press.

Comrie, Bernard. 1981. Language universals and linguistic typology. Chicago: The University of Chicago Press.

Comrie, Bernard. 1985. Causative verb formation and other verb-deriving morphology. Language typology and syntactic description: Grammatical categories and the lexicon, ed. by Timothy Shopen, Vol. III, 309-348. Cambridge: Cambridge University Press.

Cooreman, Ann. 1987. Transitivity and discourse continuity in Chamorro narratives. Berlin: Mouton.

Craig, Colette. 1978. On the promotion of instrumentals in Mayan languages. Papers in Mayan linguistics, ed. by Nora England, 55-68. Columbia: Museum of Anthropology, University of Missouri.

Craig, Colette and Ken Hale. 1988. Relational preverbs in some languages of the Americas: Typological and historical perspectives. Language 64:312-344.

Croft, William. 1991. Syntactic categories and grammatical relations. Chicago: The University of Chicago Press.

Dayley, Jon. 1983. Voice and ergativity in Mayan languages. Studies in Mesoamerican linguistics, Survey Report 4, ed. by Alice Schlichter, et al., 5-119. Berkeley: Survey of California and Other Indian Languages.

Dayley, Jon. 1985. Tzutujil grammar. UCPL 107. Berkeley: UC Press.

Dayley, Jon. 1989. Tümpisa (Panamint) Shoshone grammar. UCPL 115. Berkeley: UC Press.

De Delgaty, Alfa H. V. and Agustín Ruíz Sánchez. 1986. Diccionario Tzotzil de Andrés con variaciones dialectales. Mexico: SIL.

De Guzman, Videa. 1987. Indirect objects in Siswati. Studies in African linguistics 18:309-325.

Dempwolff, Otto. 1916. Die Sandawe. Abhandlungen des Hamburgischen Kolonialinstituts, 34. Hamburg.

Diagne, Pathe. 1971. Grammaire de Wolof moderne. Paris: Presence Africaine.

Dixon, R.M.W. 1972. The Dyirbal language of North Queensland. Cambridge: Cambridge University Press.

Dixon, R.M.W. 1988. A grammar of Boumaa Fijian. Chicago: University of Chicago Press.

Donohue, Mark. 1995. The Tukang Besi language of Southeast Sulawesi, Indonesia. Australian National University Ph.D. dissertation.

Donohue, Mark. 1996. Variation in applicative structures: Case marking, agreement, and grammatical relations. Australian National University ms.

Donohue, Mark. 1997. Bajau: A symmetrical Austronesian language. Language 72.4:782-793.

Dryer, Matthew. 1983. Indirect objects in Kinyarwanda revisited. Studies in Relational Grammar 1, ed. by David Perlmutter, 129-140. Chicago: University of Chicago Press.

Dryer, Matthew. 1986. Primary objects, secondary objects, and antidative. Language 62:808-845.

Duranti, Alessandro and Ernest Byarushengo. 1977. On the notion of "direct object". Southern California occasional papers in linguistics: Haya grammatical structure, ed. by Ernest Byarushengo, et al., 45-71. Los Angeles: USC.

Durie, Mark. 1988. Verb serialization and "verbal-prepositions" in Oceanic languages. Oceanic Linguistics 27.1-2:1-23.

Engel, Ralph and Mary Allhiser de Engel. 1987. Diccionario Zoque de Francisco Leon. Mexico: Instituto Lingüístico de Verano.

Faust W., Norma. 1973. Lecciones para el aprendizaje del idioma Shipibo-Conibo. Peru: Instituto Lingüístico de Verano.

Feldman, Harry. 1986. A grammar of Awtuw. Pacific Linguistics Series B, No. 94. Canberra: The Australian National University.

Feldpausch, Tom and Becky Feldpausch. 1992. Namia grammar essentials. Namia and Amanab grammar essentials, ed. by John R. Roberts, 3-97. Ukarumpa via Lae: Summer Institute of Linguistics.

Foley, William. 1976. Comparative syntax in Austronesian. UC Berkeley Ph.D. dissertation.

Foley, William. 1991. The Yimas language of New Guinea. Stanford: Stanford University Press.

Foley, William. 1997. Polysynthesis and complex verb formation: The case of applicatives in Yimas. Complex predicates, ed. by Alex Alsina, Joan Bresnan and Peter Sells, 355-395. Stanford: CSLI.

Foley, William and Robert Van Valin. 1985. Information packaging in the clause. Syntactic typology and language description: Clause structure, ed. by Timothy Shopen, Vol. I, 282-364. Cambridge: Cambridge University Press.

Fortescue, Michael. 1984. West Greenlandic. London: Croom Helm.

Frank, Paul. 1990. Ika syntax. Studies in the languages of Colombia 1. Arlington: SIL and UT Arlington.

Galloway, Brent. 1993. A grammar of Upriver Halkomelem. UCPL 96. Berkeley: UC Press.

Garrett, Andrew. 1990. Applicatives and preposition incorporation. Grammatical relations: A cross-theoretical perspective, ed. by Katarzyna Dziwirek et al., 183-198. Stanford: CSLI.

Gary, Judith. 1977. Implications for universal grammar of object-creating rules in Luyia and Mashi. Studies in African linguistics 7:85-95.

Gary, Judith and Edward Keenan. 1977. On collapsing grammatical relations in universal grammar. Syntax and semantics 8: Grammatical relations, ed. by Peter Cole and Jerrold Sadock, 83-120. New York: Academic Press.

Gerdts, Donna. 1980. Causal to object advancement in Halkomelem. Chicago Linguistic Society 16:83-101.

Gerdts, Donna. 1988. Object and absolutive in Halkomelem. New York: Garland.

Gerdts, Donna. 1992. Morphologically mediated profiles. Berkeley Linguistics Society 18:322-337.

Gerdts, Donna. 1993. Mapping transitive voice in Halkomelem. Berkeley Linguistics Society 19, Special Session on syntactic issues in Native American languages, ed. by David A. Peterson, 22-34.

Gerdts, Donna and Lindsay Whaley. 1990. Locatives vs. instrumentals in Kinyarwanda. Berkeley Linguistics Society 16, Special Session on African language structures, ed. by Kathleen Hubbard, 87-97.

Givón, Talmy. 1971. On the verbal origin of the Bantu verb suffixes. Studies in African linguistics 2:145-163.

Givón, Talmy. 1975. Promotion, accessibility and case marking: Toward understanding grammars. Working papers on language universals 19:55-125.

Givón, Talmy. 1983. Topic continuity in discourse: An introduction. Topic continuity in discourse: A quantitative cross-language study, ed. by Talmy Givón, 1-41. Philadelphia: John Benjamins.

Givón, Talmy. 1984. Direct object and dative shifting: semantic and pragmatic case. Objects: Towards a theory of grammatical relations, ed. by Frans Plank, 151-182. London: Academic Press.

Gordon, Lynn. 1987. Relative clauses in Western Muskogean languages. Muskogean linguistics, UCLA occasional papers in linguistics 6, ed. by Pamela Munro, 66-80. Los Angeles: UCLA Department of Linguistics.

Hagman, Roy S. 1977. Nama Hottentot grammar. Language Science Monographs, Vol. 15. Bloomington: Indiana University Publications.

Harms, Phillip Lee. 1994. Epena Pedee syntax. Studies in the languages of Colombia 4. Arlington: SIL and UT Arlington.

Hartmann, Josef. 1980. Amharische Grammatik. Wiesbaden: Franz Steiner Verlag GMBH.

Haspelmath, Martin. 1995. The converb as a cross-linguistically valid category. Converbs in cross-linguistic perspective, ed. by Martin Haspelmath and Ekkehard König, 1-55. Berlin: Mouton.

Hawkins, John. 1994. A performance theory of order and constituency. Cambridge: Cambridge University Press.

Heath, Jeffrey. 1984. Functional grammar of Nunggubuyu. Canberra: Australian Institute of Aboriginal Studies.

Hodges, Katherine. 1977. Causatives, transitivity and objecthood in Kimeru. Studies in African linguistics 7:113-125.

Hopper, Paul. 1991. On some principles of grammaticization. Approaches to grammaticalization, ed. by Elizabeth Closs Traugott and Bernd Heine, Vol I, 17-35. Philadelphia: John Benjamins.

Hualde, José. 1989. Double object constructions in KiRimi. Current approaches to African linguistics 5, ed. by Paul Newman and Robert Botne, 179-189. Dordrecht: Foris.

Hutchison, John P. 1981. A reference grammar of the Kanuri language. Madison/Boston: University of Wisconsin African Studies Program and Boston University African Studies Center.

Hyman, Larry and Alessandro Duranti. 1982. On the object relation in Bantu. Syntax and semantics 15: Studies in transitivity, ed. by Paul Hopper and Sandra Thompson, 217-239. New York: Academic Press.

Ivens, Walter G. 1918. Dictionary and grammar of Sa'a and Ulawa, Solomon Islands. Carnegie Institute Publication 253. Washington, D.C.

Johnson, Orville E. and Stephen H. Levinsohn. 1990. Grammatica Secoya. Quito: Instituto Lingüístico de Verano.

Kakumasu, Jack. 1986. Urubu-Kaapor. Handbook of Amazonian languages, ed. by Desmond C. Derbyshire and Geoffrey K. Pullum, Vol. 1, 326-403. Berlin: Mouton.

Keenan, Edward. 1985. Relative clauses. Language typology and syntactic description: Complex constructions, ed. by Timothy Shopen, Vol. 2, 141-170. Cambridge: Cambridge University Press.

Keenan, Edward and Bernard Comrie. 1977. NP accessibility and universal grammar. Linguistic inquiry 8:63-100.

Kendall, Martha B. 1976. Selected problems in Yavapai syntax: The Verde Valley dialect. New York: Garland.

Kesteloot, Lilyan. 1983. Contes et mythes Wolof. Dakar: Nouvelles editions africaines.

Kimenyi, Alexandre. 1980. A relational grammar of Kinyarwanda. UCPL 91. Berkeley: UC Press.

Kisseberth, Charles and Mohammed Abasheikh. 1977. The object relationship in Chimwi:ni, a Bantu language. Syntax and semantics 8: Grammatical relations, ed. by Peter Cole and Jerrold Sadock, 179-218. New York: Academic Press.

Laughlin, R. 1977. Of cabbages and kings: Tales from Zinacantán. Washington, D.C.: Smithsonian Institution Press.

Lehmann, C. 1984. Der Relativsatz. Tübingen: Gunter Narr Verlag.

Loriot, James, Erwin Lauriault, and Dwight Day. 1993. Diccionario shipibo-castellano. Peru: Ministerio de Educacion and Instituto Lingüístico de Verano.

Lorrain, J. Herbert. 1907. A dictionary of the Abor-Miri language, with illustrative sentences and notes. Shillong: Eastern Bengal and Assam secretariat printing office.

Macdonald, R. Ross and Soenjono Darjowidjojo. 1967. A Student's reference grammar of modern formal Indonesian. Washington, D.C.: Georgetown University Press.

Machobane, Malillo. 1989. Some restrictions on the Sesotho transitivizing morphemes. McGill University Ph.D. dissertation.

Marantz, Alec. 1984. On the nature of grammatical relations. Cambridge: MIT Press.

Masunaga, Kiyoko. 1983. The applied suffix in Kikuyu. Current approaches to African linguistics 2, ed. by Jonathan Kaye et al., 283-295. Dordrecht: Foris.

Matisoff, James. 1972. Lahu nominalization, relativization, and genitivization. Syntax and semantics 1, ed. by John Kimball, 237-257. New York: Seminar Press.

Mchombo, Sam. 1999. On parasitic gaps in Chichewa. UC Berkeley ms.

Mchombo, Sam and Grigório Firmino. 1995. Double object constructions in Chichewa and Gitonga: A comparative analysis. Paper presented at the Eighth Niger-Congo Syntax and Semantics Workshop, Boston University.

Merlan, Francesca. 1983. Ngalakan grammar, texts and vocabulary. Pacific Linguistics Series B, No. 89. Canberra: Australian National University.

Morolong, Malillo and Larry Hyman. 1977. Animacy, objects and clitics in Sesotho. Studies in African linguistics 8:199-218.

Munro, Pamela. 1983. When 'same' is 'not different'. Switch-reference and universal grammar, ed. by John Haiman and Pamela Munro, 223-243. Philadelphia: John Benjamins.

Newman, Stanley. 1944. The Yokuts language of California. Viking Fund publications in anthropology 2. New York: Viking Fund.

Newman, Stanley. 1965. Zuni grammar. University of New Mexico publications in anthropology 14. Albuquerque: The University of New Mexico Press.

Ngonyani, Deo. 1995. Instrumental applicatives in Ndendeule and Swahili. Paper presented at the Eighth Niger-Congo Syntax and Semantics Workshop, Boston University.

Nichols, Johanna. 1992. Linguistic diversity in space and time. Chicago: University of Chicago Press.

Nichols, Johanna. 1993. Typological implications of lexical transitivity. UC Berkeley ms.

Nichols, Johanna, David A. Peterson, and Jonathan Barnes. 1999. Preferred-transitive and preferred-intransitive languages. UC Berkeley ms.

Nicklas, Thurston Dale. 1974. The elements of Choctaw. University of Michigan Ph.D. dissertation.

Norman, William. 1978. Advancement rules and syntactic change: The loss of instrumental voice in Mayan. Berkeley Linguistics Society 4:458-476.

Okrand, Marc. 1977. Mutsun grammar. UC Berkeley Ph.D. dissertation.

Onishi, Masayuki. 1994. A grammar of Motuna (Bougainville, Papua New Guinea). Australia National University Ph.D. dissertation.

Osburne, Andrea G. 1975. A transformational analysis of tone in the verb system of Zahao (Laizo) Chin. Cornell University Ph.D. dissertation.

Pawley, Andrew. 1972. On the internal relationships of Eastern Oceanic languages. Studies in Oceanic culture history, Vol. 3, ed. by R.C. Green and M. Kelly, 1-142. Honolulu: Department of Anthropology, Bernice Pauahi Bishop Museum.

Pawley, Andrew and Lawrence Reid. 1980. The evolution of transitive constructions in Austronesian. Austronesian studies: Papers from the Second Eastern Conference on Austronesian Languages, ed. by Paz Buenaventura Naylor, 103-130. Ann Arbor: The University of Michigan Center for South and Southeast Asian Studies

Pawley, Andrew and Malcolm Ross. 1993. Austronesian historical linguistics and culture history. Annual Review of Anthropology 22:425-59.

Payne, Doris. 1990a. The pragmatics of word order: Typological dimensions of verb initial languages. New York: Mouton.

Payne, Doris. 1990b. Morphological characteristics of lowland South American languages. Amazonian linguistics, ed. by Doris Payne, 213-141. Austin: University of Texas Press.

Payne, Doris, Mitsuyo Hamaya, and Peter Jacobs. 1994. Active, inverse and passive in Maasai. Voice and inversion, ed. by T. Givón, 283-315. Philadelphia: John Benjamins.

Payne, Doris and Thomas Payne. 1986. Yagua. Handbook of Amazonian languages, ed.by Desmond C. Derbyshire and Geoffrey K. Pullum, vol 2., 249-474. Berlin: Mouton.

Payne, Thomas Edward. 1992. The twins stories: Participant coding in Yagua narrative. UCPL 120. Berkeley: UC Press.

Perlmutter, David and Paul Postal. 1983. Some proposed laws of basic clause structure. Studies in Relational Grammar 1, ed. by David Perlmutter. Chicago: University of Chicago Press.

Peterson, David A. 1996a. Diachronic and typological aspects of applicative constructions. UC Berkeley Department of Linguistics Special Field Examination.

Peterson, David A. 1996b. Bantu objects and the drift towards primary objectivity. Chicago Linguistics Society 32:285-298.

Peterson, David A. 1997, to appear. The evolution of applicative constructions and Proto-Austronesian morphosyntax. Berkeley Linguistics Society 23.

Peterson, David A. 1998a. The morphosyntax of transitivization in Lai (Haka Chin). Linguistics of the Tibeto-Burman area 21.1:87-153.

Peterson, David A. 1998b. Obliques, ergatives, and subordination in Kuki-Chin-Naga and beyond: *naa~naak~naang* and (un)related marking. UC Berkeley ms.

Peterson, David A. 1999. On the distribution of instrumental applicatives in Bantu. UC Berkeley Historical Linguistics Group talk.
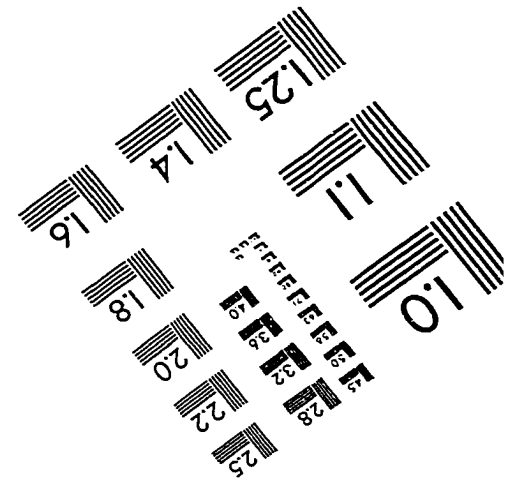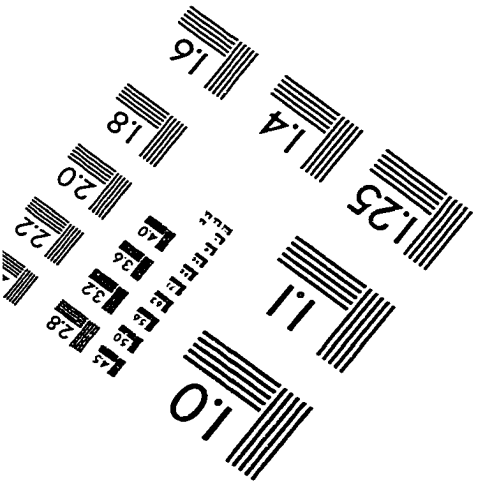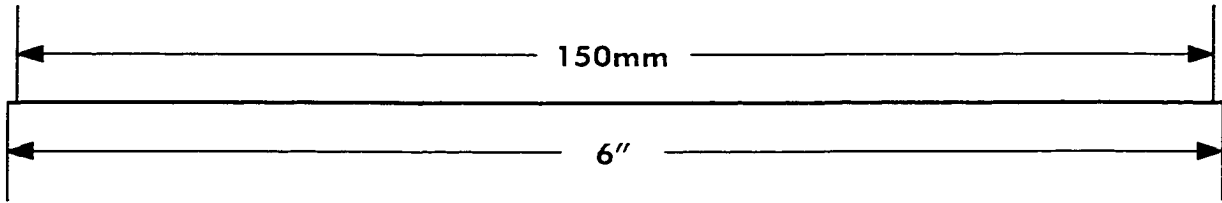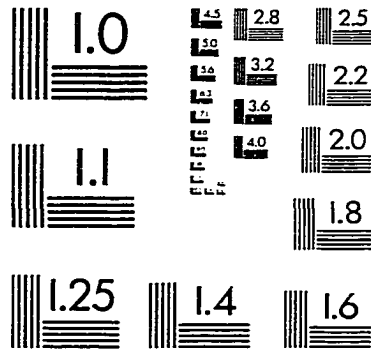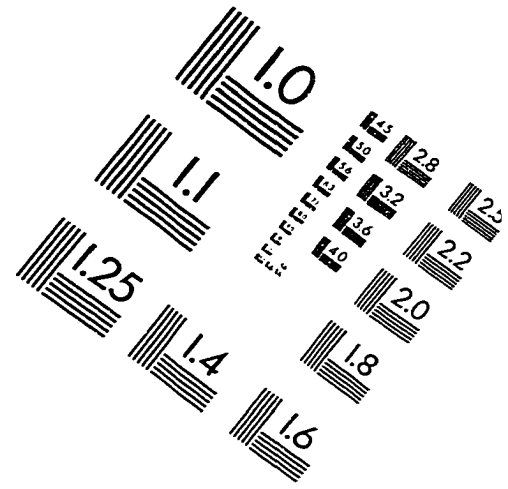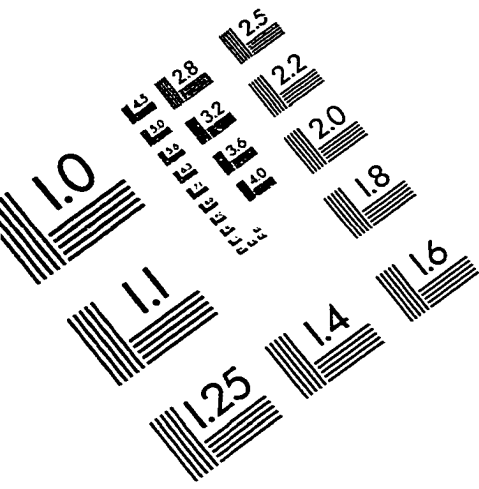
Pilhofer, G. 1933. Grammatik der Kâte-Sprache in Neuguinea. Vierzehntes Beiheft zur Zeitschrift für Eingeborenen-Sprachen. Berlin: Verlag von Dietrich Reimer.

Pitkin, Harvey. 1984. Wintu grammar. UCPL 94. Berkeley: UC Press.

Ray, S.H. 1926. A comparative study of the Melanesian island languages. Cambridge: Cambridge University Press.

Rehg, Kenneth. 1981. Ponapean reference grammar. Honolulu: University Press of Hawaii.

Ross, Malcolm. 1995a. Reconstructing Proto-Austronesian verbal morphology: Evidence from Taiwan. Austronesian studies relating to Taiwan, Symposium Series of the Institute of History and Philology, Academia Sinica, Number 3, ed. by Paul Jen-kuei Li, et al., 727-791. Taipei: Academia Sinica.

Ross, Malcolm. 1995b. Some current issues in Austronesian linguistics. Comparative Austronesian dictionary: An introduction to Austronesian studies, Part 1, Fascicle 1, ed. by Darrell T. Tryon, 45-120. Berlin: Mouton.

Rude, Noel. 1982. Promotion and topicality of Nez Perce objects. Berkeley Linguistics Society 8:463-483.

Rude, Noel. 1985. Studies in Nez Perce grammar and discourse. University of Oregon Ph.D. dissertation.

Rude, Noel. 1986. Topicality, transitivity, and the direct object in Nez Perce. International journal of American linguistics 52:124-153.

Rude, Noel. 1991. Verbs to promotional suffixes in Sahaptian and Klamath. Approaches to grammaticalization, ed. by Elizabeth Traugott and Paul Hopper, Vol II, 183-199. Philadelphia: John Benjamins.

Rude, Noel. 1992. Dative shifting in Sahaptin. International journal of American linguistics 58:316-320.

Rugemalira, Josephat. 1993. Runyambo verb extensions and constraints on predicate structure. UC Berkeley Ph.D. dissertation.

Sapir, Edward. 1922. The Takelma language of southwestern Oregon. Handbook of American Indian languages, ed. by Franz Boas, Part 2, 1-296. Washington, D.C.: Smithsonian Institution, Bureau of American Ethnology.

Schachter, Paul. 1976. The subject in Philippine languages. Subject and Topic, ed. by Charles Li, 491-518. New York: Academic Press.

Schachter, Paul. 1990. Tagalog. The world's major languages, ed. by Bernard Comrie, 936-958. New York: Oxford University Press.

Schwartz, Arthur. 1975. Wolof: A language with no direct object. Journal of West African languages 10.2:219-267.

Seiter, William. 1979. Instrumental advancement in Niuean. Linguistic inquiry 10:595-621.

Shibatani, Masayoshi. 1990. The languages of Japan. Cambridge: Cambridge University Press.

Shibatani, Masayoshi. 1996. Applicatives and benefactives: A cognitive account. Grammatical Constructions, ed. by Masayoshi Shibatani and Sandra Thompson, 157-194. Oxford: Oxford University Press.

Silver, Shirley. 1966. The Shasta language. UC Berkeley Ph.D. dissertation.

Stapleton, Walter Henry. 1903. Comparative handbook of Congo languages. Yakusu, Stanley Falls, Congo Independent State: "Hannah Wade" Printing Press.

Starosta, Stanley, Andrew Pawley, and Lawrence Reid. 1982. The evolution of focus in Austronesian. Papers from the Third International Conference on Austronesian Linguistics, vol. 2. Pacific Linguistics Series C, No. 75, ed. by Amran Halim, et al., 145-170. Canberra: The Australian National University.

Swadesh, Morris. 1946. Chitimacha. Linguistic structures of Native America, Viking Fund publications in anthropology 6, ed. by Harry Hoijer, et al., 312-26. New York: Viking Fund.

Swift, Kenneth E. 1988. Morfologia del Caquinte (arawak preandino). trans. by Elena Townsend Diez-Canseco and Marlene Ballena Davila. Yarinacocha, Peru: Instituto Lingüístico de Verano.

Thiesen, Wesley. 1996. Gramatica del idioma bora. Yarinacocha, Peru: Instituto Lingüístico de Verano.

Thompson, Sandra. 1990. Information flow and dative shift in English discourse. Development and diversity: Language variation across time and space, a festschrift for Charles-James N. Bailey, ed. by Jerold Edmondson et al., 239-253. Arlington: SIL and UT Arlington.

Trithart, Mary. 1976. Relational Grammar and Chichewa subjectivization rules. UCLA M.A. thesis.

Ulrich, Charles. 1986. Choctaw morphophonology. UCLA Ph.D. dissertation.

Van de Kimmenade, Martin. 1954. Essai de grammaire et vocabulaire de la langue Sandawe. Micro-Bibliotheca Anthropos 9. Posieux and Fribourg.

Visser, F. Th. 1963. An historical syntax of the English language: Part 1, Syntactical units with one verb. Leiden: E. J. Brill.

Wagner, Günter. 1933. Yuchi. Handbook of American Indian languages, ed. by Franz Boas, Part 3, 293-384. Glückstadt, Hamburg, and New York: J. J. Augustin and Columbia University Press.

Watters, James. 1988. Topics in Tepehua grammar. UC Berkeley Ph.D. dissertation.

Watters, James. 1989. The syntax of applicatives in Tepehua (Totonacan). Paper presented at the LSA annual meeting.

Weber, David John. 1983. Relativization and nominalized clauses in Huallaga (Huanuco) Quechua. UCPL 103. Berkeley: UC Press.

Weber, David John. 1989. A grammar of Huallaga (Huanuco) Quechua. UCPL 112. Berkeley: UC Press.

Weir, E. M. Helen. 1986. Footprints of yesterday's syntax: Diachronic development of certain verb prefixes in an OSV language (Nadëb). Lingua 68:291-316.

Weir, E. M. Helen. 1990. Noun incorporation in Nadëb. Amazonian linguistics, ed. by Doris Payne, 321-363. Austin: University of Texas Press.

Willet, Thomas. 1981. Advancements to direct object in Southeastern Tepehuan. SIL (University of North Dakota Session) work papers 25:59-74.

Wise, Mary Ruth. 1971. Identification of participants in discourse: A study of aspects of form and meaning in Nomatsiguenga. SIL Publications in Linguistics 28. Norman: SIL and the University of Oklahoma.

Wolff, John. 1973. Verbal inflection in Proto-Austronesian. Parangal kay Cecilio Lopez: Essays in Honor of Cecilio Lopez on his seventy-fifth birthday, ed. by Andrew B. Gonzalez, 71-91. Quezon City: Linguistic Society of the Philippines.

Yamashita Smith, Tomoko. 1998. The middle voice in Lai. Linguistics of the Tibeto-Burman Area 21.1:1-52.

IMAGE EVALUATION
TEST TARGET (QA—3)

150mm

6″