

Argument Structure of Klamath Bipartite Stems

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1. Klamath

1.1 The Klamath-Modoc Language

Klamath, with its southern dialect Modoc, is a Plateau Penutian language of south-central Oregon; its closest relatives are Molala and the Sahaptian languages (Nez Perce and Sahaptin). While the Penutian hypothesis remains controversial (though the evidence for it is substantial; see DeLancey and Golla 1997), the relationship of the "Plateau Penutian" languages--Klamath-Modoc, Sahaptian, Molala, and possibly Cayuse--is supported by substantial evidence (Aoki 1963, Rude 1987, DeLancey, Genetti and Rude 1988, DeLancey 1992, Berman 1996) and is now accepted even by more conservative scholars (Goddard 1996:6, Campbell 1997:121, 318-20).

Klamath-Modoc is effectively extinct, with only a few relatively fluent speakers still living, and no significant body of semi-speakers. The primary documentation is that of Gatschet (1890) and Barker (1963a, b, 1964); this documentation is the basis for the work reported here.

1.2 Outline of Klamath structure

Klamath, like a number of other North American languages, shows extremely free word order. Barker (1964:339-42) checked all 24 possible permutations of the four words in the following sentence:

- (1) hoot Naas lilhanks slin
DEM one deer shoot
'He shot one deer.'

Informants clearly rejected only four possibilities, and found all of the following completely acceptable and normal:

- (2) hoot slin Naas lilhanks
 Naas lilhanks hoot slin
 Naas slin lilhanks hoot
 lilhanks Naas hoot slin
 slin hoot Naas lilhanks
 slin hoot lilhanks Naas

Note that not only are SOV, SVO, OSV, and VSO orders all equally acceptable, but the two elements of the NP *Naas lilhanks* 'one deer' can occur in either order, or be discontinuous. All of these and other word-order patterns are well-attested in texts (Underriner 1996).

There is no indexation or cross-reference of arguments in the verb. The case-marking system of ordinary nouns consists of four marked cases: genitive {?am}, object {as}, locative {dat}, and instrumental {tgi}:

- (3) hiswag 'man'
 hiswak'am 'man's'
 hiswak'as 'man (Object)'
- qday 'stone'
 qday?am 'of a stone'
 qdayyat 'on, under, etc., a stone'
 qdaytgi 'with a stone'

Case marking is always according to a nominative-accusative pattern, but there are syntactically and morphologically distinct systems for ordinary nouns, pronouns, kin terms, adjectives, and demonstratives (for details see Rude 1988). Ordinary nouns take pragmatic object marking, i.e. direct objects are case-marked only when highly referential, typically human. These take the object marker |as|. Adjectives take both subject and object marking, both of which appear to be optional or determined by factors as yet unidentified. The subject suffix for adjectives is |i|, the object marker |a|. Pronouns, kin terms, and demonstratives are obligatorily marked for accusative case. The object marker for kin terms is |a|. Pronouns take the object marker |s|, with some irregular forms. Demonstratives have irregular object forms characterized by an |n| element. Several of these systems are exemplified in the following example (Barker 1963a):

- (4) ge-n ni-s sa k'ecc'-a blo?a:k c'leya
 this-OBJ I-OBJ they small-OBJ piece.of.fat give
 'They gave me this little piece of fat.'

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gen, *k'ecc'a*, and *blo?a:k* belong to the same functional NP 'this little piece of fat'. *blo?a:k* is not sufficiently discourse-prominent to merit case marking, but both the adjective *k'ecc'a* and the demonstrative *gen* are marked as objects. Note that the pronominal indirect object *ni* 'I' also takes object marking.

It is widely assumed that extremely free constituent order of the sort exhibited by Klamath must necessarily be accompanied by some fairly explicit form of argument marking or indexation, but Klamath shows that the correlation is not absolute. Clauses with more than one full NP argument are uncommon in text, but since animate objects are marked, it is usually not hard to determine semantic roles, especially in context:

- (5) *sqel'am'c sdoli: taby'-a mna c'asga:y'a:k- s*
Old Marten advise y.bro.-OBJ his Little Weasel-OBJ
'Old Marten told his younger brother Little Weasel'

ton'ip wilisik yamnas sqel ?en- a,
five sack beads Marten take away-INDIC
'Marten took five sacks of beads,'

c'asga:y cis ton'ip'-anti: wilisik yamnas ?en- a.
Weasel also five- PART sack beads take -INDIC
'Weasel also took five sacks of beads.'

In the first clause, with two human participants (Marten and Weasel are myth characters, and thus human for all discourse-pragmatic purposes), there are two coreferential nouns referring to the object in an appositive construction, and both are case-marked; in the next two clauses, with a human actor and an inanimate object, there is no case marking, but the interpretation of the sentences is nevertheless clear.

1.3 Bipartite Stems

The most striking fact about Klamath verbs is that most verb stems are bimorphemic. This phenomenon is found in several languages of western North America (Jacobsen 1980, DeLancey 1996, 1999); I adopt the term "bipartite stem" from Jacobsen's seminal article on the phenomenon as manifested in the Hokan language Washo.

Parts of the Klamath system can be very loosely described in terms of "instrumental prefixes" and "locative-directive suffixes", both familiar notions in North American linguistics. For example, the stem /*nqew'a*/ 'break in two with a round instrument' consists of an independent stem {*qewi*'} 'break in two' and a bound initial element {*n-*} 'with a round instrument'; /*wdomkanga*/ 'swim around here and there' consists of a motional stem {*wdom*} 'swim' and a locative-

directive element {okang} 'around, here and there'. But in fact the system has a more precise and detailed structure than this (DeLancey 1991a, 1999).

Barker (1963b, 1964) presents a position class analysis of bipartite stems, recognizing four classes of components: initial "classificatory stems", locative-directive suffixes, and two types of stem--one typically requiring a classificatory initial, the other occurring both with and without. Since, as we will see, only certain subsets of the "classificatory stems" are actually classificatory, I adopt another terminological suggestion of Jacobsen's, and refer to Barker's "classificatory stems" as "lexical prefixes" or LP's. In fact, there are three different categories of bipartite stem, corresponding to three more-or-less distinct types of LP. These can be roughly distinguished by their combinatorial properties, though with some fuzziness around the edges of the categories, and can further, with a handful of lexical exceptions, be quite neatly distinguished by differences in argument structure.

2. Bipartite Stems and Argument Structure

2.2 Change-of-state verbs

The first category of bipartite stem is illustrated by the example /nqew'a/ 'break in two with a round instrument'. Stems of this type are built on a set of independent stems which, when unprefixes, are intransitive verbs denoting a change of state:

- (6) /ca:y'a/ 'become split, gashed'; /gatt'a/ 'break in two (intr.)'; /p'ak'a/ 'break into pieces, shatter (intr.)'

As simple, monomorphemic stems, these change-of-state stems are always intransitive, and describe a change of state in their single argument:

- (7) sciqtGis-ti: boq'e:wis ?a gatt'-atk
 bridle-PARTITIVE leather DEC break-STAT
 'The leather of the bridle is broken.'

With an initial LP drawn from a specific subset of the LP's which corresponds to what Americanist linguists since Sapir have called "instrumental prefixes", they are transitive:

- (8) /nca:y'a/ 'split or gash s.t. with a round instrument'
 /wgatt'a/ 'cut in two with a long instrument wielded radially; chop down'
 /mp'ak'a/ 'smash, break to pieces with a round instrument'
 /wp'ak'a/ 'smash, break to pieces with a long instrument wielded radially'

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- (9) he: cik ?ins q'ay s?ab-i:-wapk, coy hon
 if CONT 2nd/1st NEG tell-BEN-FUT then that

mi-s ni ye=qew'i-wapk.
 2nd-OBJ I w.foot=break.in.two-FUT

'If *you* won't tell me, I'll **stomp you in two**.' [Old Grizzly speaking to Awl, threatening to step on him and break him in half.]

The subject argument of such a transitive stem is unproblematically an Agent; the object argument, as well as the subject of the intransitive construction, is what a Theme (the argument which is in or undergoes a change of location or state; see DeLancey 1991b).

Note that the relation between the argument structure of the intransitive and transitive corresponds precisely to that of labile or "ergative" verbs of the *break* class in English and many other languages. The analysis of these verbs in Klamath is in some ways less problematic than in a language like English, where the same verb stem occurs both intransitively and transitively. In Klamath we can argue that the change-of-state stem, the second element of these bipartite stems, brings with it a Theme argument slot, and that the LP then adds an Agent slot. How this is done is not completely clear. At first blush it seems that these LP's classify an Instrument. While it would not work in traditional Case Grammar, a case can be made that Instruments in fact occur only together with Agents, in which case an indirect mechanism could be proposed by which the lexicalization in the verb stem of an Instrument necessarily implies an Agent.

At best this would be cumbersome, however, and there are reasons for avoiding a claim that verbs can lexically require an Instrument argument. And there is evidence that these prefixes lexicalize a type of action rather than a type of object. For example, Barker glosses the prefix {kt} as 'hit with the fist, kick', but among the stems formed with this element we find several which do not contain that semantic element, for example:

- (10) kten- 'throw (a spear, dart)'
 kteqwe:L- 'slide downhill (as a log, avalanche)'
 ktoc'i:p'- 'slide out of a tubular object (as lead out of a pencil)'

All of these, as well as the more common 'hit, kick' senses, can be subsumed under a broader sense of 'force applied by a long object (such as an arm or leg) in the axial dimension'. Besides providing a unified interpretation of the forms which include {kt}, this analysis explains the coexistence in the language of two "instrumental prefixes" referring to action with a long or stick-like instrument. For {kt} contrasts with the {w} prefix (see the examples in (7)); the contrast can be seen in the following minimal pair:

- (11) /kbol'a/ 'hit in the stomach'
 /wbol'a/ 'hit in the stomach with a stick'

/kbol'a/ implies force applied axially; the verb suggests, for example, a punch. /wbol'a/ implies force applied radially; the verb suggests swinging a stick and hitting someone in the stomach.

While it is not clear that we can completely dispense with the semantic notion of shape classification of instruments and still adequately describe the semantics of all attested bipartite stems, it is clear that the dimension of type of action is part of the semantics of this set of lexical prefixes. On this interpretation, the argument structure of these stems is completely straightforward: an intransitive form like /qew'-/ lexicalizes a process leading to a change of state; a transitive form like /wqew'-/ then adds to this lexical reference to an action on the part of an Agent, thus describing a transitive event. This structure, then, directly expresses the logic of Chafe's (1970) categorization of transitive verbs like *break* as Process + Action.

2.3 CLS + LDS stems

The change-of-state system is a minor variation on a pattern familiar from other languages, and quite likely universal. There is another, larger class of bimorphemic stems which are more exotic. These consist of a lexical prefix and a locative-directive suffix (LDS):

(12)	<u>on top</u>	<u>in water</u>	<u>underneath</u>
living object:	ksawal-	ksew-	ksodi:l-
round object:	lawal-	lew-	lodi:l-
long object:	?awal-	?ew-	?odi:l-

In stems of this type the lexical prefix is a classifying element referring to a category of object; the second element describes motion, location or path on the part of that object. These stems are indifferently stative, eventive intransitive, or transitive, according to context; thus most of Barker's glosses for full verb forms have the proviso "intransitive also". Some examples from text illustrate the labile transitivity of Classifying LP + LDS stems:

- (13) coy honk ga?as ks=aqa:q-damn-a
 now NARR thus living.obj=on.lap-over.and.over-DEC
 'Now he was lying around in her lap this way.'

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- (14) cakl'a-dat ks=iGog-a sa ?aysis-as
basket-LOC living.obj.=put.in-INDIC 3pl Aisis- OBJ
'They put Aisis into a large basket.'

The verb in each clause consists of the lexical prefix {ks} 'living object' plus a locative-directive suffix; (13) shows such a verb in a stative use, (14) one used transitively.

When the clause has a distinct NP corresponding to the path or location indicated by the LDS, this is marked as locative:

- (15) coy honk na:nok Ge:s cewam'- am
then DEM.OBJ all ipos Old Antelope-GEN

?i=Gog- a mna-tant y'agi- dat
pl.=in.container-INDIC 3sPOSS-OBL.LOC basket-LOC

'Then [she] put all Antelope's ipos into her basket.'

- (16) s?as?abam'c qtan- a ks=elwy-ank
Old.Grizzly sleep-IND living.obj.=by.fire-HAVING

loloqs-dat
fire-LOC

'Old Grizzly slept, lying by the fire.'

While the COS stems do not pose the same analytic problem as their English equivalents, these bipartite stems--which do not have any direct counterpart in English--are problematic, in that exactly the same verb form may have both intransitive and transitive argument structures. But these bipartite stems are transparently easy to describe in terms of a simple set of case roles--the two parts of the verb lexicalize, respectively, a Theme and a Loc.

2.4 Compound stems

There is a third, less cohesive, category of bipartite stem, exemplified by the likes of:

- (17) /howwal/ 'run, jump on top'
/howwa/ 'run, jump into water'

These have a locative-directive suffix as the second element, but the lexical prefix is drawn from a motley residual set of morphemes which do not show the charac-

teristic semantic or syntactic behavior of either the Instrumental or Theme-classifying subcategories. The bulk of these have meanings related to manner of motion or position, e.g.

- (18) {c^v} 'sg. sit, slide'
 {tg^v} 'sg. stand'
 {lw^vlw} 'pl. stand'
 {g^v} 'go, move of one's own volition'
 {hod} 'sg. run, jump';

Bipartite stems formed on one of these are typically intransitive, with no alternate transitive use:

- (19) he: mi-s sli-wapk, Gleg-atk gintak,
 if 2nd-OBJ shoot-FUT sg.die-STAT even

?i hot-tgal-ba l-ank sli-wapk honk-s.
 2sg jump-get.up-back-having shoot-FUT DEM-OBJ

"If he shoots you, even if you're dead, you'll jump back up and shoot him."

- (20) Glewy-ank g-oWaskc-a lmeys-?as gelwipc-ok
 quit-having go-away-IND Thunder-OBJ visit-PURP

c'asga:y'a:k-s ha-ks-akc'wi-tk.
 Weasel-OBJ REFL-living.obj-narrow.place-STATE

'Leaving there, he went off to visit the Thunders, with Little Weasel in his pocket.'

The relation between the subject and the LDS is the same as with the Theme-classifying stems, i.e. the verb predicates of its subject motion or location defined by the LDS. I have a few examples of stems of this type used transitively:

- (21) coy mi-s ni g-alamn-bag-wapk.
 then 2nd-OBJ I go-behind-CIS-FUT
 'And I'll come following you.'

The object marking on *mi* 'you' shows that the clause is transitive. Presumably this transitivity is an unsystematic consequence of the lexical semantics associated with |g-alamn| 'go-behind' = 'follow'. But the vast majority of stems of this type (e.g. /g-ena/ 'go', /g-apc'a/ 'go out of sight', /g-ewa/ 'go into water', etc., are always intransitive.

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A handful of other LP's combine with LDS's to form intrinsically transitive stems, with the transitivity deriving from the intrinsically transitive semantics of the LP. For example, the LP {lw^v} refers to clothing; all attested bipartite stems with this element are transitive, referring to clothing or unclothing someone (e.g. /lwoči:pa/ 'undress s.o.' ({oči:p} 'sliding down off a tubular object'), /lwota/ 'put a garment on someone' ({otŋ} 'on, against, attached to')).

2.5 Stem Categories and Argument Structure

Thus the inventory of systematic bipartite stem types is as follows (for more details and description of non-systematic patterns see DeLancey 1999):

Instrumental LP + COS stem

Classifying LP + LDS

Motion LP + LDS

For these regular patterns most of the argument structure can be derived compositionally.

A change-of-state stem has a single NP argument slot, for a Theme. Instrumental LP's and the motional miscellaneous LP's specify an activity, and thus provide an Agent slot. Thus Instrumental LP + COS stems have an Agent and a Theme argument, with Agent realized as subject and Theme as object. A stem like /wp'ak'a/ 'smash, break to pieces with a long instrument wielded radially' derives its argument structure compositionally--the change-of-state stem |p'ak'| takes a Theme argument, and the "instrumental" |w| 'wielding a long instrument radially' provides a slot for an Agent.

LDS's specify a Location, and thus necessarily have a NP argument slot for a Theme. Classifying LP's refer to a Theme, but have to be in construction with a second element which provides a syntactic slot for it, i.e. they do not license an argument, rather they occupy an argument slot. Thus the argument structure of Classifying LP + LDS stems in their intransitive use falls out directly from their lexical structure.

The exception to strict compositionality is Classifier + LDS stems like /l-odi:l-a/ 'round object underneath'. Both elements of the stem name, rather than simply licensing, an argument: |odi:l| names a Location, which then requires a Theme. (Since Location and Theme are relational concepts, it is impossible to have one without the other (DeLancey 1991b, 1997b)). The LDS thus licenses both Theme and Location arguments, and specifies the category of the Location; the classificatory lexical prefix then specifies the category of the Theme. But nothing in the formal structure of the stem correlates with the possibility of adding an Agent argument.

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