

## K'ichee' Problem — Stephen Wechsler

Observe the following one-word sentences of the Mayan language K'ichee' (thanks to Nora England for data and explanation):

1. k-at-b'iin-ik  
IMPF-2SG.ABS-walk-INTR  
'you (sg.) walk'
2. k-at-u-chap-o  
IMPF-2SG.ABS-3SG.ERG-grab-TRANS  
's/he grabs you (sg.)'

(IMPF: imperfective aspect; ABS: absolutive; ERG: ergative; INTR: the intransitive finite ('plain') marker; TRANS: transitive finite ('plain')).

K'ichee' has two sets of pronominal inflections, Absolutive and Ergative. Absolutive markers are used for the subjects of intransitive verbs (and non-verbal predicates), and the objects of transitive verbs.

3. Absolutive pronominal inflections  
1sg in-  
2sg at-  
3sg  $\emptyset$   
1pl oj-  
2pl ix-  
3pl e ~ e' ~ eb'

Ergative markers are used for subjects of transitive verbs, and possessors of nouns. The phonological form depends on whether it is followed by a consonant or vowel, as shown here:

4. Ergative pronominal inflections  

	/ _C	/ _V
1sg	nu- ~ in-	w- ~ inw-
2sg	a-	aw-
3sg	u-	r-
1pl	qa-	q-
2pl	i-	iw-
3pl	ki-	k-

The final suffix in 1-2, called the status suffix, encodes transitivity and finiteness: *-ik* is used for an intransitive verb and *-o* for a transitive verb. (The status suffix is omitted in certain non-final positions. Both *-ik* and *-o* are for finite clauses, as opposed to

“dependent” status. This problems set deals only with finite forms.) The initial prefix *k(a)-* seen in examples 1 and 2 marks imperfective aspect.

Here are some paradigms (morpheme boundaries are shown only for a few forms):

(i) -b'iin ‘walk’

k-in-b'iin-ik ‘I walk’  
 k-at-b'iin-ik ‘you walk’  
 ka-b'iin-ik ‘s/he walks’  
 kojb'iinik ‘we walk’  
 kixb'iinik ‘you (pl) walk’  
 keb'iinik ‘they walk’

(ii) -chap ‘grab’

k-in-u-chap-o ‘s/he grabs me’  
 katuchapo ‘s/he grabs you’  
 kuchapo ‘s/he grabs him/her’  
 kojuchapo ‘s/he grabs us’  
 kixuchapo ‘s/he grabs you (pl)’  
 ke'uchapo ‘s/he grabs them’

(iii) -to ‘help’

x-nu-to'-o/xinto'o ‘I helped him/her’  
 xato'o ‘you helped him/her’  
 xuto'o ‘s/he helped him/her’  
 xqato'o ‘we helped him/her’  
 xito'o ‘you (pl) helped him/her’  
 xkito'o ‘they helped him/her’

(*x-* is the past perfective prefix.) Here are some examples with argument NPs:

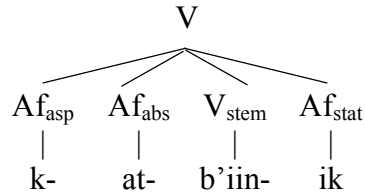
5. Aninaq k-e-b'iin ri ixoqiib'.  
 rapidly IMPF-3PL.ABS-walk DEF women  
 ‘The women walk rapidly.’

6. X-e'-u-chap ka'iib' kuuk ri tz'i'.  
 PPRF-3PL.ABS-3SG.ERG-grab two squirrel DEF dog  
 ‘The dog grabbed two squirrels’

7. X-u-chap jun kuuk ri nu-taat.  
 PPRF-3SG.ERG-grab one squirrel DEF 1SG.ERG-father  
 ‘My father grabbed a squirrel.’

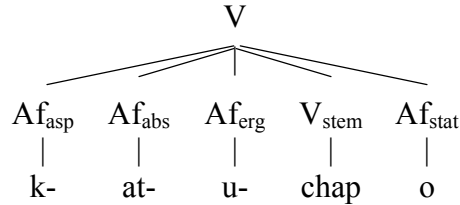
(PPRF: past perfective aspect.) Based on the foregoing, we will assume the following sublexical (morphemic) structures for the intransitive verb in example 1 and the transitive verb in example 2, respectively:

8.



'you (sg.) walk'

9.



's/he grabs you (sg.)'

Some morpheme entries:

*k-* Af<sub>asp</sub> (↑ASP) = impf

*b'iin* V<sub>stem</sub> (↑PRED) = 'walk<(↑SUBJ)>'

*chap* V<sub>stem</sub> (↑PRED) = 'grab<(↑SUBJ)(↑OBJ)>'

*ik-* Af<sub>stat</sub> (↑FIN) = +  
¬(↑OBJ)

*-o* Af<sub>stat</sub> (↑FIN) = +  
(↑OBJ)

*u-/r-* Af<sub>erg</sub> ...

*at-* Af<sub>abs</sub> ...

The constraining equations associated with the status suffixes encode (in)transitivity by prohibiting or requiring an OBJ function.

**Task I.** Complete the analysis of examples 1 and 2 by providing entries for the pronominal inflections (*u-/r-* and *at-*) and adding functional annotations to the sublexical c-structures in 8 and 9. (You may modify the above entries if needed.) Calculate the f-structures.

In addition to their role in marking the subjects of transitive verbs, ergative markers can appear on nouns to mark the possessor. Here are some possessed nouns:

C-initial stem

nu-teem	‘my chair’
a-teem	‘your chair’
u-teem	‘his/her chair’
qa-teem	‘our chair’
i-teem	‘your (pl) chair’
ki-teem	‘their chair’

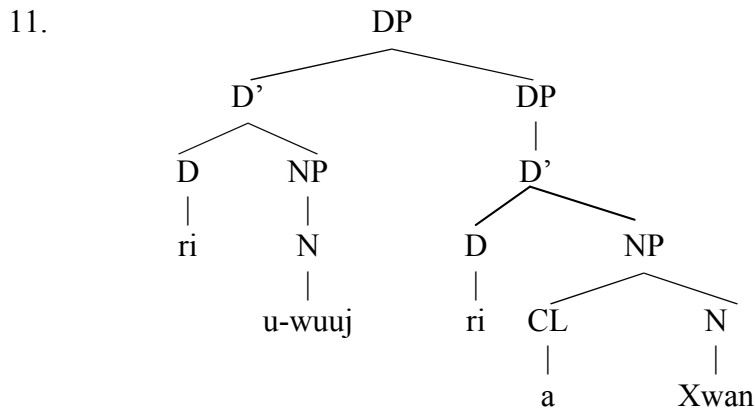
V-initial stem

w-ab’iix	‘my cornfield’
aw-ab’iix	‘your cornfield’
r-ab’iix	‘his/her cornfield’
q-ab’iix	‘our cornfield’
iw-ib’iix	‘your (pl) cornfield’
k-ab’iix	‘their cornfield’

A full phrase (here, *a Xwan*) optionally expresses the possessor:

10. ri	u-wuuj	ri	a	Xwan	
	DEF	3sg-book	DEF	CL	John
	‘John’s book’				

(CL: classifier; *a* is the classifier used for names.) Let us posit a DP analysis of nominals like 10: the determiner (if any) is the head; the possessor phrase (*a Xwan*) appears in the specifier of DP; and the main noun (*uwuuj*) is the complement of D.



As in the Navajo problem, we will assume that common nouns allow a variant lexical entry in which the noun governs a POSS function. (Presumably the noun in 13 is derived from 12 by a general lexical rule.) Further lexical entries follow.

12. tz’ii’	N	(↑PRED) = ‘dog’
		(↑PERS) = 3

13. tz’ii’	N	(↑PRED) = ‘dog-of<(↑POSS)>’
		(↑PERS) = 3

<i>a</i>	CL	(↑CLASS) = <sub>c</sub> name
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<i>Xwan</i>	N	(↑PRED) = ‘John’
		(↑CLASS) = name

<i>ri</i>	D	(↑DEF) = +
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Ergative markers also appear on prepositions to mark the object of the preposition, as illustrated in these examples:

14. r-umaal      ri      k'uch  
     3SG.ERG-by    DEF    buzzard  
     'by the buzzard'

15. w-umaal  
     1SG.ERG-by  
     'by me'

16. r-uuk'          jun      ikaj  
     3SG.ERG-with one    axe  
     'with an axe (instrumental)'

17. w-uuk'  
     1SG.ERG-with  
     'with me (comitative)'

Let's assume these prepositions have a PRED feature and govern an object; e.g. the PRED value for the  $P_{\text{stem}}$  *umaal* is 'by<(↑OBJ)>'.

**Task II.** Propose analyses of possessives and PP's by providing the following for the inflected word *nuteem* 'my chair' and examples 10, 14, and 15: (i) lexical entries for the morphemes; (ii) c-structures, including functional annotations; (iii) the sublexical (morphemic) structures, including functional annotations; and (iv) f-structures.

[Hint: The hint for this problem is essentially the same as for the Navajo problem. Note that a given pronominal inflection can serve multiple functions. Absolutive inflections function as subject (of an intransitive V) or object (of a transitive V). Ergative inflections mark: the subjects of transitive verbs; possessors of nominals; and objects of prepositions. Try to keep the specifications for the morphemes constant across these different functions by allowing the context itself to determine the grammatical function.]

**Task III.** Propose c- and f-structures for 18 and 19.

18. ri      u-tz'ii'          ri      a-taat  
     DEF    3SG.ERG-dog    DEF    2SG.ERG-father  
     'your father's dog'

19. ri      u-tz'ii'          ri      u-taat                  ri      a      Xwan  
     DEF    3SG.ERG-dog    DEF    3SG.ERG-father      DEF    CL      John  
     'John's father's dog'

**Task IV.** As shown in the table in 3 above, the 3<sup>rd</sup> person singular Absolute pronominal inflection is a ‘zero morpheme’: that is, when no overt Absolute marker appears on the verb, the absolute argument (subject of intransitive or object of transitive) is interpreted as 3<sup>rd</sup> person singular. Can you think of a way to capture this without positing a silent morpheme? Illustrate your proposal with an analysis of the form *ka-b’iin’-ik* (IMPF-walk-INTR ‘s/he walks’). [Hint: Think of how we represent null pronouns in agreement-poor languages like Malayalam, Korean and Japanese.]