# Aztec causative/applicatives in Space Grammar 

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## 0. Introduction

In general, the verb of initially transitive clauses of Southern Tiwa will have passive morphology if the intial subject is unspecified. This paper' proposes an 'impersonal passive' analysis of such clauses when they are embedded as subject of a certain class of predicates, here represented by nat'aratawe 'be difficult'; see (2)?
(1) Nat'arata-we-m [ hliarade ф-'u'u-miki-hi-'i].
hard-be-pres lady 3s:3s-baby-feed-fut-sub
'It's hard for the lady to feed the baby.'
(2) Nat'aratawem [ $\varnothing$-'u'u-mike-hi-'i ]. 3s-baby-feed:pass-fut-sub
'It's hard to feed the baby.'
(3) Hliarade $\varnothing$-'u'u-miki-hi.
lady $3 s: 3 s$-baby-feed-fut
'The lady will feed the baby.'
(4) 'U'ude (hliarade-ba).
baby 3s-feed:pass-fut lady-instr
'The baby will be fed (by the lady).'
In (1), the downstairs subject is specified, so the downstairs clause (in brackets) does not have to be passive; it is identical to the
clause of (3), except for the presence of the subordination marker -'i in (1). However, in (2) the downstairs subject is unspecified, and the downstairs verb is necessarily passive; compare (4), an unembedded passive. ${ }^{3}$

## 1. Three Analyses

Working within the relational grammar framework, we compare three multistratal analyses of the downstairs clause in (2): 1. a regular passive analysis; 2. an impersonal passive analysis involving only demotion of a subject; and 3. an impersonal passive analysis involving advancement of a phonologically null dummy. We will show that although each of the first two analyses accounts for certain facts about the embedded clauses we are concerned with here, only the third analysis accounts for them all.

We begin by presenting analyses $1-3$.
1.1 Regular passive, in which initial direct object (DO) is a final subject (S). (See Perlmutter and Postal, 1977, for a universal definition of passive.) The stratal diagram for the downstairs clause of (2) under this analysis is as follows:

1.2 Spontaneous chomage, in which the unspecified initial $S$ is simply demoted to final chomeur, and the initial DO is also final DO. ${ }^{4}$ (The passive stem registers the demotion.)

Stratal diagram for the spontaneous chomage analysis of (2):

1.3 Dummy advancement, in which a (silent) dummy ( $D$ ) is a noninitial DO and advances to $S$. (See Perlmutter 1978, especially note 3.)

Stratal diagram for the dummy advancement analysis of (2):


## 2. The Evidence

We will show the superiority of the dummy advancement analysis over each of the other two analyses one at a time. We begin by comparing the dummy advancement analysis with a regular passive analysis, and present facts which only the dummy advancement analysis handles.
2.1 Arguments favoring the dummy advancement analysis over the regular passive analysis:
A. Animate final S's of Southerm Tiwa are never incorporated (Allen, Gardiner, and Frantz, 1984); cf. (5) and (6).
(5) 'U'un i-mu-che-ban.
babies 3p-see-pass-pst
'The babies were seen.'
(6) *I-'u'u-mu-che-ban.

3p-baby-see-pass-pst
Compare also the regular passive in the downstairs clauses of (7) and (8), which show that the incorporation constraint is in effect in embedded clauses.
(7) Nat'aratawem 'u'un i-mu-che-hi-'i hliarade-be hard babies 3p-see-pass-fut-sub lady-instr
'It's hard for the babies to be seen by the lady.'
(8) *Nat'aratawem i-'u'u-mu-che-hi-'i hliarade-ba.
hard 3p-baby-see-pass-fut-sub lady-instr
Given these facts, the regular passive analysis, in which 'babies' is a final S, incorrectly predicts that (9) will be bad. The dummy advancement analysis allows (9) because 'babies' is not a final $S$ under that analysis.
(9) Nat'aratawem i-'u'u-mu-che-hi-'i.
hard 3p-baby-see-pass-fut-sub
'It's hard to see the babies.'
B. Inanimates cannot be the final $S$ of a passive; v.(10). Thus the regular passive analysis incorrectly predicts that (11) will be bad, for under that analysis 'breads' is final $S$ of the downstairs clause.
(10) *U-p'akhu-k'are-ban.

3p(inan)-bread-eat:pass-pst
('The breads were eaten.')
(11) Nat'aratawem u-p'akhu-k'are-hi'i.
hard 3p-bread-eat:pass-fut-sub
'It's hard to eat (the) breads.'

Under the dummy advancement analysis, 'bread' is not the final $S$ of the downstairs clause of (11), so it does not violate the constraint illustrated in (10).
C. The downstairs verb is passive even when reflexive; v. (12). Under the regular passive analysis this means that in the downstairs clause the advancee is putting itself en chomage (not allowed for in some versions of the Chomeur Law), as shown in (13). Under the dummy advancement analysis, however, the dummy is the advancee and puts the initial 1 en chomage, as shown in (14).
(12) Nat'aratawem be-khwiat-e-hi-'i.
hard refl-hit-pass-fut-sub
'It's hard to hit oneself.'


### 2.2 Arguments favoring the dummy advancement over the spontaneous chomage analysis:

A. Elsewhere in the language, verb agreement shows a dual vs. plural number contrast only for final $S$; cf. (15) - (18). Comparing (19) and (20), we see that there is a contrast between dual and plural number of the initial DO of the downstairs clause. This would seem to indicate that this nominal is a final $S$. But given the evidence previously presented against the regular passive analysis, we are left with attempting to account for this number contrast under either the dummy advancement or the spontaneous chomage analysis. While neither of these analyses straightforwardly predicts this number contrast (the initial DO of the downstairs clause is not a final $S$ under either analysis), the dummy advancement analysis requires a less ad hoc statement, for under that analysis the agreement rule can account for the facts by making use of the 'brother-in-law' relation ${ }^{5}$, which is posited to be universally available based on evidence from a number of languages.

That is, the verb in the dummy advancement clause agrees with the brother-in-law of the final $S$. Under the spontaneous chomage analysis, the agreement rule must be complicated to say that the dual vs. plural number contrast is extant for final DO just in case there is no final $S$.
(15) Hliaran imim-'u'u-mu-ban.
ladies 3d:3p-baby-see-pst
'The ladies (2) saw the babies.'
(16) Hliaran ibi-'u'u-mu-ban.
$3 p: 3 p-$
'The ladies $(>2)$ saw the babies.'
(17) 'U'un in-mu-che-ban hliaran-ba
babies 3d-see-pass-pst ladies-instr
'The babies (2) were seen by the ladies.'
(18) 'U'un i-mu-che-ban hliaran-ba. 3p-
'The babies (>2) were seen by the ladies.'
(19) Nat'aratawem in-'u'u-mu-che-hi-'i. 3d-baby-see-pass-fut-sub
'It's hard to see the babies (2).'
(20) Nat'aratawem i-'u'u-mu-che-hi-'i.

3p-
'It's hard to see the babies (>2).'
B. As was shown in Allen and Frantz, 1978, an IO which advances to DO must not be final DO unless advancement to $S$ is not possible, i.e. blocked by the constraint against putting first or second person nominals en chomage. We refer to this as the 'non-initial DO constraint'. For example in (22), which involves advancement of an IO to DO (compare (21)), ${ }^{6}$ the non-initial $D O$ is final $D 0$ because advancement to $S$ is not possible, as this further advancement would put the second person nominal en chomage.
(21) Ku-t'am-a 'uide-'ay.

2s:C-help-pres child-to
'You are helping the child.'
(22) Ow-t'am-a 'uide.

2s:3s/C-help-pres child
'You are helping the child.'
But in (24) (compare (23)), the non-initial D0 is necessarily final S, because advancement to $S$ is not blocked by the constraint against putting first or second person nominals en chomage.
(23) Yede seuanide u-t'am-a t'aynin-'ay.
that man $3 \mathrm{~s}: \mathrm{C}$-help-pres people-to
'That man helps people.'
(24) Yede seuanide-ba iw-t'abe-we t'aynin.
that man-instr 3p/C-help:pass-pres people
'That man helps people.' (more literally: 'People are helped by that man.')

Given these facts, observe now what prediction the spontaneous chomage analysis makes about IO to DO advancement in the embedded clauses which are the topic of this paper. As shown in diagram (25), the spontaneous chomage analysis of the dowstairs clause of (27) involves a final D0 which is not the initial DO, because under that analysis there is no DO to $S$ advancement. Thus under the spontaneous chomage analysis, sentence (27) violates the non-initial 2 constraint, and so that analysis wrongly predicts that (27) will be bad. The dummy advancement analysis, on the other hand, involves no final DO in the downstairs clause, as shown in (26) and so does not predict that (27) will be bad.

(27) Nat'aratawem t'aynin iw-t'abe-hi-'i.
hard people $3 p / C$-help:pass-fut-sub
'It's hard to help people.'
3. Summary

We have compared what seem to be, within the relational grammar framework, the only reasonable analyses of the downstairs clause in sentences such as (2): the regular passive analysis (DO advances to S), a spontaneous chomage analysis (S demoted), and dummy advancement analysis (non-initial, phonologically null dummy advances to S). We have presented arguments favoring the dummy advancement analysis over each of the other two analyses. Southern Tiwa thus provides additional support for the dummy advancement analysis as a rule of universal grammar, and for the inclusion of 'silent' dummies in linguistic theory.

## Footnotes

${ }^{1}$ Southern Tiwa is a Tanoan language. The analysis presented here is based on research by Barbara Allen and Donna Gardiner on the language spoken at Isleta Pueblo in New Mexico. The authors are grateful to Gardiner and to David Perlmutter for helpful discussion of the topic of this paper, as well as for input to analysis in general of this fascinating language. We also have benefited from comments by Paul Postal and Steve Marlett on earlier drafts.
${ }^{2}$ Verb prefixes agree with final subject and final direct object (Allen and Frantz, 1978). $\phi$ - represents the significant absence of a prefix. In glosses, the numerals 1, 2, and 3 abbreviate first, second, and third person, respectively; s, d, and $p$ abbreviate singular, dual, and plural, respectively. Other abbreviations include: $D=$ dummy; $D 0=$ direct object; fut = future; instru = instrumental; $10=$ indirect object; pass = passive; pres = present tense; pst $=$ past tense; $\mathrm{S}=$ subject; sub = subordinator; $U N=$ unspecified.
${ }^{3}$ Allen and Gardiner, 1981, present arguments that sentences such as (4) are passive, and describe the formation of passive verb stems; one of the most common processes involves replacement of final /i/ by /e/, as seen for the verb miki 'feed'.
${ }^{4}$ See Comrie, 1977, for the proposal that such an analysis should be allowed within universal grammar. Such an analysis would violate two proposed laws of relational grammar, the 'Motivated Chomage Law' and the 'Final 1 Law' of Perlmutter and Postal (1983).
${ }^{5}$ It is apparently more often the case than not, that verbs agree with the first nominal put en chomage by a dummy (and commonly called the brother-in-law of the dummy) rather than agree with the dummy itself. The best known case is that of English there as final S. For example, compare (i), in which there has put flaws en chomage in the downstairs clause, and is an ascendee as final S of the upstairs clause; yet are believed agrees with flaws, the brother-in-law of there.
(i) There are believed to be flaws in your device.
't'am 'help' is one of the strange verbs discussed in Allen, Gardiner, and Frantz, 1981, which is morphologically transitive even without an overt DO, and furthermore, acts as if this 'phantom' initial DO is inanimate plural (a C in the three-way classification of number and gender combinations in Tanoan languages). Thus in (21) the verb prefix agrees with the final $S$ and with this phantom DO. In (22), the verb prefix agrees with the final S, final DO, and the (phantom) initial DO, as it would with a verb (such as wia 'give') that takes overt initial DO's (see Allen and Frantz, 1978).

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