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EQUI-SUBJECT CLAUSE UNION

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Many languages (generally labeled "polysynthetic")
exhibit complex verbs in which the subjects of the
underlying predicates realized in the verb complex
must be understood as coreferential. Examples from a
few languages follow:[1]

Micmac (Algonkian)

(1) getu-liey-∅   'I want to go.'
     want-go- 1

(2) getu-lie-n
     want-go-2   'You want to go.'

Blackfoot (Algonkian)

(3) nít-ssáak-a'po'taki
     1 - try - work   'I tried to work.'

Southern Tiwa (Tanoan)

(4) te-nakiani-beow-a
     1 - arise-want-pres 'I want to get up.'

Japanese [Kuno 1973.138]

(5) John wa   nihongo o hanas-e-ru
     J. topic Japanese obj speak-able-pres
     'John can speak Japanese.'

(6) Boku wa   gohan o· tabe-ta - i
     I   topic meal   obj eat-want-contin
     'I'm anxious to eat a meal.'

Tübatulabal (Shoshonean) [Voegelin 1935]

(7) wá·hay-íba'-át
     work-want-pres   'He wants to work.'

Eskimo [Webster 1968]

(8) tautuk-kumiñak̬-tuŋa
     see   -able- indic:1 'I can see.'

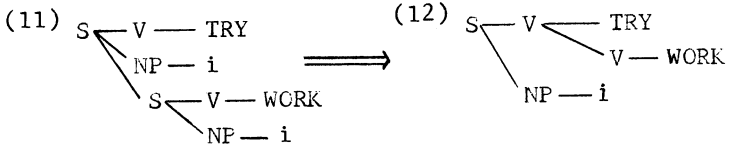### Lahu (Tibeto-Burman) [Matisoff 1973]

(9) mâ- tɔʔ -e- gâ
     neg-out-go-desid   'I don't want to go out.'

Capanahua (Panoan)

(10) haa ta ho - kaci'ki -ipi- š -ki
     3 decl come-want-past-   3-decl
     'He wanted to come.'

There is generally good reason to derive such

single-clause structures from complex underlying
structures which contain a sentential complement. For
example, Blackfoot (3) is assumed to arise from a
structure like (11):

(11)
$$S \diagdown V — TRY$$
$$NP — i$$
$$S \diagdown V — WORK$$
$$NP — i$$

$\Longrightarrow$

(12)
$$S \diagdown V \diagdown TRY$$
$$V — WORK$$
$$NP — i$$

(12) then arises by deletion of the downstairs subject
by Equi-NP deletion (henceforth 'Equi'), followed by
predicate raising and pruning to give a single clause
structure with a complex verb.

Recently, relational grammar (RG) has replaced
predicate raising by clause union, which consolidates
clauses in one step. However, it has still been
assumed, I believe, that Equi applies in a structure
such as (11) before the union is formed.[2]

However, of the languages from which the illus-
trations above are drawn, those with which I have had
some experience show no evidence for the operation of
Equi into complements other than those which are con-
solidated with the matrix clause. Here I distinguish
between a structure-affecting rule of deletion (Equi)
and the constraint against repetition of coreferential
NPs that is the functional equivalent of obligatory
pronominalization. Thus while (13) has only one
occurrence of nóta'sa, there is no more reason to say
that an NP has been deleted in the complement of (13)
than to say one has been deleted in the purpose clause
of (14) or the "adverbial" clause of (15):

(13) iikstaa-wa n-óta's -a m-aáxk- sooy'-ssi
     want - 3 my-horse-3 3-might-eat - conj
     'My horse wants to eat.'

(14) nit-sstsipíss-aawa n-óta's-a m-aáxk-it-okska's-si
     1-whip-3   my-horse-3 3-might-then-run-conj
     'I whipped my horse so he would run.'

(15) iixt-omatap-okska'si-wa n-óta's-a nit-sstsipíss-
     result-begin-run-3   my-horse-3 1-whip-3

     aa-xsi
       conj
     'My horse began to run because I whipped him.'

Observe that in all three examples (13)-(15), the sub-
ordinate verb still agrees with the third person NP
nóta'sa.[3] The lack of repetition of nóta'sa in (14)
and (15) is the Blackfoot functional equivalent of

English pronominalization (Frantz 1971.127), and the same constraint accounts for the single occurrence of nóta'sa in (13).

Because languages like Blackfoot make no use of Equi in sentences such as (13), we are forced to restrict application of Equi to just those derivations in which the following step is clause union. On the other hand, if we make the collapsing of coreferential subjects a consequence of clause union, no such special constraint need be added to the grammars of these languages. Thus I propose that in addition to other changes clause union accomplishes, it collapses coreferential subjects into one,[4] the resultant NP functioning as subject of the resultant verb complex. In what follows, I will use the term <u>Equi-subject Union</u> to refer to such clause unions.

Variations on Equi-subject Union (ESU)

When comparing the output of ESU in different languages, we find at least two important ways in which they differ. First of all, the component predicates may combine to form one surface structure word, as in (1)-(10), or remain separate words as in the Zuni example which follows:

    (16) ho' ido-n   iha
          1:subj eat-sub want/intend:pres
          'I want to eat.'

(The claim that the derivation of (16) involves clause union rather than simple Equi is based primarily on differences between such examples and those with complements which clearly retain their clause status in Zuni.[5] Hopefully, it will not be necessary to recognize a "quasi-clause" (Postal 1974) status in Zuni.) This difference between combining the two verbs as one word or leaving them as two words is, of course, paralleled in causative unions; cf. Turkish (17) and French (18) causative unions (examples from Aissen 1974):

    (17) Hasan kasab-a   et-i   kes-tir- di.
         H. butcher-dat meat-accus cut-caus-past
         'Hasan had the butcher cut the meat.'

    (18) J'ai   laissé chanter l'hymne à Jean
         I:have let   sing   anthem dat J.
         'I let Jean sing the anthem.'

And if I am correct in considering Zuni (16) to be an example of clause union, then we cannot even say that any given language will treat all clause unions alike with respect to one-word vs. two-word verb output, for Zuni causative unions give a single word complex verb:

(19) Aktsek'i bitsu:di-ya' mi'l ido-k'ya-kkya.
    boy   pig-obj   corn eat-cause-past
    'The boy caused the pig to eat the corn.

    The second and heretofore largely unrecognized
way in which the output of ESU can differ from language
to language involves a set of properties which can per-
haps all be lumped under the question, "Which predi-
cate remains 'live'?". According to Perlmutter (lec-
ture, summer 1975), the downstairs predicate in causa-
tive constructions such as the French example (18)
above has become a 'dead' verb; among other things,
this is said to be responsible for the fact that the
clitic le in (20) cannot immediately precede boire
but must precede the 'live' verb laisserai, even
though the same clitic can immediately precede boire
in (21) which has not undergone clause union:

    (20) Je le laisserai boire à Claude.
        'I will let Claude drink it.'

    (21) Je laisserai Claude le boire.
        [same meaning as (20)]

I am reasonably confident that for causative clause
unions, the upstairs predicate (CAUSE, ALLOW, etc.)
will universally be live after union. And I think the
terminology ('live' vs. 'dead' verb) is useful even for
those cases where the two predicates combine as one
word, as we shall see next.
    To show this, we concentrate on one major feature
of clause structure, transitivity, in two representa-
tive languages, Micmac and Southern Tiwa. Each of
these languages has both transitive and intransitive
inflectional paradigms. Looking first at Micmac, we
compare a few forms of an intransitive verb (22), and a
transitive verb with animate object (23):

    (22)   liey   'I go'
           lien   'you go'
           liet   'he goes'

    (23)   pema:lk   'I carry him'
           pema:lul   'I carry you'
           pema:lit   'he carries me'

And we find that when such verb roots are combined with
getu- 'want' the resultant complex verb retains the
transitivity of the downstairs verb; thus (24) shows
intransitive inflection and (25) has transitive affix-
es:

    (24)   ketu-liey-∅   'I want to go.'
           want- go-1

(25) ketu-pma:1-k
      want-go-1:3   'I want to carry him.'

Turning now to Southern Tiwa, we first compare an intransitive verb (26) with one that takes affixes from the transitive set (27):

(26) te-iani-hi
      1-arise-future   'I'll get up.'

(27) ti-diru - tuwi-hi[6]
      1:3-chicken-buy-fut   'I'll buy a chicken.'

But when we combine these with 'want', the resultant clause union has an intransitive verb in both cases, at least with regard to the affixes it takes:

(28) te-nakiani - beow - a
      1 - arise - want-pres 'I want to get up.'

(29) te-diru-kum- beow-a[7]
      1 -chicken-buy-want-pres
      'I want to buy the chicken.'

A check on sentences containing beow 'want' without clause union indicates that it always takes the intransitive set of affixes; e.g. (30):

(30) te-nabeow- a i a-diru - tuwi -hi-'i
      1-want-pres 2 2:3-chicken-buy-fut-sub
      'I want you to buy the chicken.'

So it is the upstairs predicate, in this case beow, which determines transitivity in the Southern Tiwa clauses formed by ESU. (And so far as I have been able to determine, this is true of all cases of ESU in the Tanoan family.)

We can account for this difference in output of ESU, i.e. upstairs verb determines transitivity in some languages (e.g. Tanoan) while the downstairs verb determines union transitivity in others (e.g. Algonkian), if we say that in the former the upstairs verb remains live, while in the latter the downstairs verb remains live.

Of course there will be other properties of live verbs as opposed to dead ones, especially when they remain as separate words. For example, referring back to Zuni (16), we see on the basis of which verb is marked for tense, ESU leaves the upstairs verb live in that language.

Surface Order

The kinds of derivations and surface relations that arise within RG offer hope that surface word order can be predicted by both language particular and uni-

versal ordering principles which make reference to RG
concepts such as subject, direct object, indirect
object, chômeur, dead verb, etc. (Perlmutter lecture,
summer 1975).

Of the languages represented in (1)-(10), all but
Micmac and Blackfoot are verb-final languages, and so
an expected correlation of greater scope with 'later'
in the sentence (i.e. there is an inverse relation be-
tween linear precedence and scope) would correctly pre-
dict that an upstairs predicate would occur later in
the sentence than a downstairs predicate. In Algon-
kian languages, as in English, higher scope generally
is directly related to linear precedence. Thus we
would expect on this basis to consistently find the
upstairs predicate occurring earlier in the sentence
than the lower predicate; and this is what we found in
Blackfoot (3) and Micmac (1), (2), (24), and (25). So
thus far it looks as if the relation between scope and
order is universally preserved after clause union.

However, Blackfoot causatives are an exception to
this statement, as we see in (31):

(31) nít-sooy-átts-aawa n-oxkó-wa
      1 - eat-cause- 3   1-son-3
      'I made my son eat.'

Recall that it is apparently universally true that in
causative unions the upstairs predicate remains live,
while in Algonkian ESU the downstairs predicate re-
mains live. And for Blackfoot, at least, this diff-
erence between causative and Equi-subject unions corre-
sponds to a difference between surface orderings which
have the upstairs predicate following or preceding the
downstairs predicate. Thus it looks as if a general
principle for Blackfoot can account for both the ESU
and causative union verb orderings: a dead verb is
positioned to the left of, and attached to, the live
verb.[8]

The intersection of ESU and causative union

Thus far I have discussed ESU in contrast to
causative union. But certainly causative sentences
which meet the equi-subject constraint are semantically
possible:

(32) 'I made myself work.'

(33) 'He made himself eat.'

Yet the expected Blackfoot equivalents are unaccepta-
ble:[10]

(34) *nit-á'po'taki- átts-ooxsi
      1 - work-cause - reflex

(35) *á-ooyi- átts- ooxsi-wa
      dur-eat-cause -reflex-3

I have been unable to elicit any reflexive causatives
in Blackfoot. This could conceivably be due to some
aspect of the meaning or presuppositions of -attsi
which I do not understand, but if not, the lack of
reflexive causatives in Blackfoot might be explainable
in terms of a conflict between two principles proposed
in this paper. I have said that with causative unions,
the upstairs predicate remains live, while with ESU
the downstairs predicate remains live in Blackfoot.
But with a causative that involves coreferential up-
stairs and downstairs subjects, the two principles
require conflicting outputs. The Blackfoot resolution
of this conflict may just be that there is no accept-
able output (and hence such situations must be express-
ed in Blackfoot by other than the causative construc-
tion).11

Summary of tentative conclusions

Unlike causative clause unions, in which the up-
stairs predicate (CAUSE) universally remains the live
verb, Equi-subject unions will leave either the up-
stairs or downstairs predicate live, on a language-
specific basis. The relative surface order of this
live predicate and the dependent dead predicate will be
determinable by general principle for a given language.
The syntax (transitivity, inflection,9 behavior with
regard to subsequent syntactic processes, etc.) of the
resultant clause will be a function of the live predi-
cate.

NOTES

1   Greg Thomson has contributed indirectly to this
paper through discussion of its topic with me, espec-
ially where Blackfoot is concerned, as well as directly
by comments on the paper itself.
    The sources of data are indicated by accompanying
reference, or were generously provided by the following
researchers: Micmac from Watson Williams; Southern
Tiwa from Barbara Allen; Capanahua from Eugene Loos;
Zuni from Curtis Cook. Blackfoot data are from my own
and Greg Thomson's research. Abbreviations used in the
glosses include: obj = objective case; dat = dative
case; accus = accusative case; 1 = speaker; 2 = addres-
see; 3 = third person; decl = declarative; indic =
indicative; neg = negative; desid = desiderative; sub =
subordinator; pres = present tense; fut = future;
contin = continuative.

2   This was the course followed in Frantz 1971, where

a rule called "proposition consolidation" was preceded by the equivalent of Equi.

3   The conjunct (conj) inflection is used in non-suppositional subordinate clauses (Frantz 1971.26-28); coreference plays no role in its distribution.

4   I would make the same kind of claim for unions in which the downstairs subject is coreferential with the upstairs object, but they are beyond the scope of this paper.

5   Unlike complements of iha , complements of predicates without the 'like-subject' constraint: 1) can be extraposed; and 2) show no evidence of Equi when upstairs and downstairs subjects are coreferential.

6   Non-human object noun incorporation is apparently obligatory. But note that the verb still requires transitive prefixes agreeing in class and number with the object (Allen and Gardiner, in preparation).

7   A number of verbs have suppletive allomorphs when combined with other verb roots; in this case tuwi ~ kum 'buy'. This is how I choose to treat beow ~ nabeow in (29) and (30), though it is possible that the na of (30) is an incorporated dummy (note that the object complement is extraposed).

8   This is reminiscent of a more general proposal made by Greg Thomson (personal communication) before he had heard of RG's clause union rule. An alternative hypothesis, also proposed by Thomson (about 1973), which could account for the position of the causative suffix in Blackfoot is that all (but not only) morphemes which are of derivational effect are stem-final in Blackfoot.

9   A methodological note: Where number is signalled by suppletion in the verb, this is not a reliable test of whether or not that verb is live, for current research in Zuni and the Tanoan languages indicates that such verb allomorphy makes reference to the arguments (terms) of a predicate before union or any other process affects the underlying grammatical relations.

10   Some reflexives of causatives do however seem to be understandable, in the sense that hearers can tell me in English what I seem to be trying to communicate. E.g. on hearing (34), one person responded with "You mean you employed yourself?".

11   After this paper was completed, Greg Thomson found that his informant accepts reflexive causatives as possible Blackfoot constructions. So for that speaker at least, the causative union principle takes precedence

over ESU.

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