

CAUSATIVE CLAUSE UNION IN
KUNUZ NUBIAN

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0. INTRODUCTION :

This work is an attempt to characterize causative clause union (CCU) in Kunuz Nubian (KN), an Eastern Sudanic dialect (cf. Greenberg 1966) that is spoken in Southern Egypt. It will be shown that KN CCU involves the union of two clauses into a single clause. Such constructions violate proposals made by Perlmutter and Postal (1974) and Gibson and Raposo (1986) concerning the grammatical relation (GR) of the dependents of the complement or downstairs clause in the union stratum. The discussion reveals that some basic laws of relational Grammar (RG) (i.e., the stratal uniqueness law (SUL) and the motivated chomage law (MCL) are violated KN CCU allows the presence of two nominals bearing the final 2-relation in the same stratum (union stratum).

The discussion in this paper is conducted in the framework of RG as developed by Perlmutter and Postal (1974). It is organised as follows : Section 1 introduces us to the theory of RG and deals with the treatment of CCU in RG. Section 2 contains some facts of KN that are to be needed in Section 3 where CCU in KN is treated.

1. AN OUTLINE OF RG :

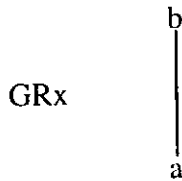
The framework used in discussing KN CCU is RG, as proposed and developed by Perlmutter and Postal (1974). RG is different from existing theories of syntax (e.g. Case Grammar (Filmore (1968) in that it takes grammatical relations such as subject (1), direct object (2), indirect object (3), obliques (Obl) and chomeurs (Cho) as primitives of the linguistic system (cf. Perlmutter and Postal 1983). It further distinguishes between terms and non-terms. Terms include 1s, 2s and 3s; non-terms consist of obliques and chomeurs.

In RG, syntactic structure should reflect the following properties (cf. Perlmutter 1980 : 198) :

- (1) a. The elements that bear grammatical relations to each other.
- b. The grammatical relation that relates one element to the other.
- c. The levels at which each element bears a grammatical relation.

These three properties are represented by three devices (Perlmutter 1980 : 198) : the elements with GRs are shown by a set of nodes. The GR that holds between elements is indicated by R-signs. These two devices are shown in (2) where the linguistic element **a** bears the GR_x relation to **b** the nodes **a** and **b** stand for nominals bearing GRs whereas GR_x stands for GRs :

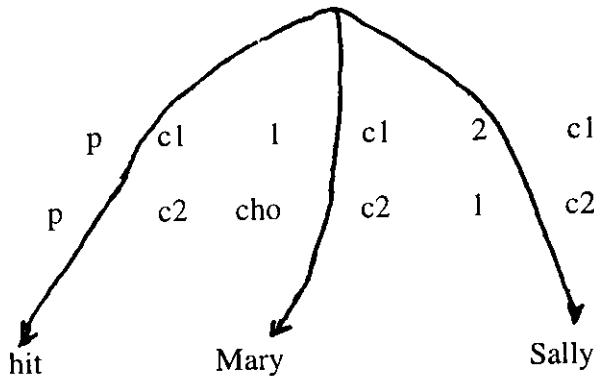
(2)



It is property (c) of the syntactic structure that sets RG apart from other theories (cf. Filmore (1968) : Dik (1981)). RG recognizes the presence of more than one syntactic level in some clauses. This is indicated by coordinates that specify the levels at which elements bear GR to each other. An example showing the levels is given in (3a) of which the Relational Network is (3b) :

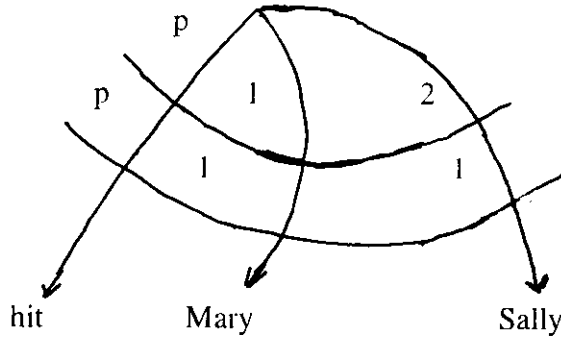
(3) a. Sally was hit by Mary.

b.



(3b) can have a more simplified representation; this is shown in the stratal diagram (4). Other than explicitness, stratal diagrams do not have any theoretical advantage over the Relational Network in (3b) :

(4)



As can be seen in (4), the nominal **Sally** has two GRs : a 2-relation in the initial stratum and 1-relation in the second or final stratum. By the same token, the nominal **Mary** bears a-1-relation in the initial stratum and a cho-arc in the final one.

1.1 CCU IN RG :

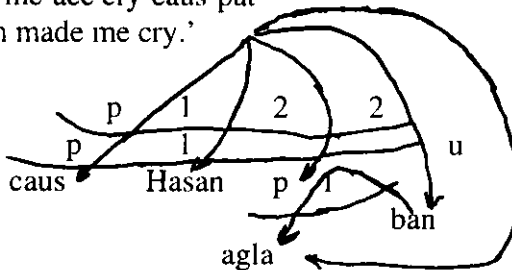
RE accounts for several clause structures : advancements, ascensions and CCU. Here we concentrate on CCU. A causative construction has greater valence by one than the non-causative counterpart, the causer being the added argument. This characterization assumes that a CCU construction is the result of collapsing two clauses into a single clause. Such a construction has been attested in several languages (e.g. French, Turkish (Aissen 1974, Comrie 1976, 1983) : Tzotzil (Aissen 1976); Hebrew (Cole and Sridhar 1977); Chamoro (Gibson 1980, Gibson and Raposo 1986). For example, the following Turkish sentences (Aissen 1974 : 325) involve CCU : the complement clause, which bears a 2-relation prior to the union, has no GR after union, as shown in (5) :

(5) a. Hasan boni aga-la-t-ti

Hasan me-acc cry-caus-pat

'Hasan made me cry.'

b.



Thus a causative construction has two levels : biclausality and monoclausality. Evidence for these two levels has been accumulated in the literature discussing CCU.

The discussion of CCU raises some important questions concerning the dependents of the complement or downstairs clause in the union stratum. That is, what GRs are assigned to the nominals of the complement clause in the union stratum ? According to Perlmutter and Postal (1974) 's hypothesis ('the ergative analysis of CCU'), the GR held by the dependent of the complement or downstairs clause in the union clause is determined by the following rule :

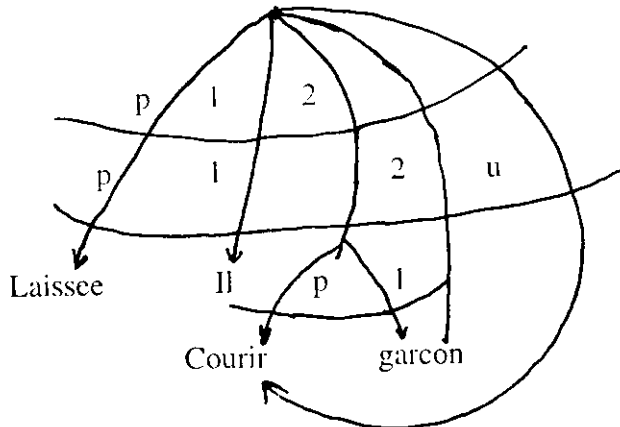
(6) Clause union rule :

In a causative construction, an intransitive downstairs final 1 becomes 2 in the union clause; a final 1 of a transitive downstairs clause ends up as 3 in the union stratum.

This rule predicts that the derived GR of the downstairs final 1 (subject) is 2 (DO) if the downstairs clause is intransitive; if the downstairs clause is transitive, then its final 1 becomes 3 in the union clause. This is illustrated by the following French examples (Gibson and Raposo 1986 : 296) :

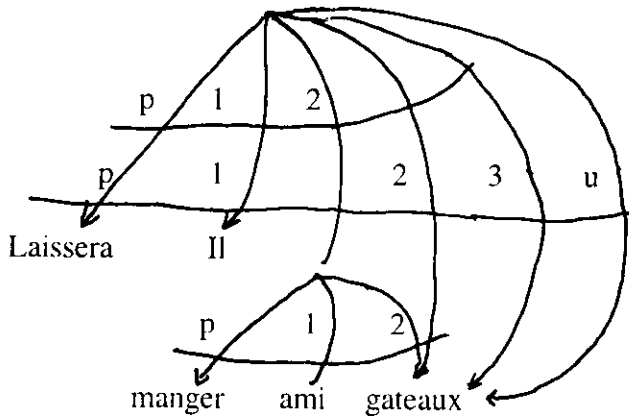
- (7) a. Il laisse courir les garçon
 he lets to-run the kids
 'He lets the kids run.'

b.



- (8) a. Il laissera manger les gateaux a son amie
 he will-let to-eat the cakes to his friend
 'He will let his friend eat the cakes.'

b.



In (7) the nominal **les garçon** holds the final 2-relation in the union clause; this is because it is the final 1 of the underlying intransitive downstairs clause. In (8) the nominal **son ami** is the final 3 of the resulting clause for it holds a final 1-arc in the underlying transitive clause.

Italian (Cole and Sridhar 1977 : 701) is also shown to conform to Perlmutter and Postal's hypothesis concerning the fate of the downstairs clause dependents in the union clause :

(9) a. Maria fa si che Gianni (Sbj)

Mary makes that Johnny
scriva
write

b. Maria fa scrivere Gianna (Do)

Mary makes to-write Johnny
'Mary makes Johnny to write.'

(10) a. Maria fa si che Gianni (Sbj) scriva la lettera

Mary makes that Johnny write the letter

b. Maria fa scrivere la lettera (DO) a Gianni (IO)

Mary makes to-write the letter by Johnny
'Mary makes Johnny write the letter.'

Gibson (1980) 's work on Chamoro reveals that Perlmutter and Postal (1974) 's hypothesis is not adequate enough to incorporate all languages. Chamoro is an obvious counterexample. In Chamoro CCU, "the complement 1 is a 2 of the union stratum, irrespective of the

structure of the embedded or complement clause" (Gibson and Raposo 1986 : 312) :

- (11) a. Maipi i kafe
hot the coffe
'The coffe is hot.'
- b. Hu n'a-maipi kafe
1sg caus hot coffe
'I heated the coffe.'
- (12) a. In taitai esti na lebblu
lpl read this LK book
'We read the book.'
- b. Ha na'-taitai hami ma'estru ni esti ni lebblu
3sg caus read lpl teacher obl this LK book
'The teacher made us read the book.'

Gibson and Raposo (1986 : 312) give arguments showing the final 2-hood in the union stratum of the nominal **kafe** which is the final 1 of the downstairs intransitive clause (cf. 11) and the nominal **hami** which is the final 1 of the downstairs transitive clause (cf. 12). Such a situation led to the reformulation of the clause union rule proposed by Perlmutter and Postal (1974) in such a way that it would account for the new data supplied by languages such as Chamoro. Gibson and Raposo propose the inheritance principle (1986 : 328) :

(13) The inheritance principle

If the predicate in a complement clause **b** bears the Union GR in the same clause, then a nominal bearing a final GRx in **b** bears the same GRx or the cho GR at the union stratum of the clause union construction.

This can be more clearly rephrased (cf. Gibson and Raposo 1986 : 299) : the dependents of the complement clause directly inherit the GR they hold in the final stratum of the main or unstairs clause from the complement clause. The only exception to this principle is the embedded (downstairs) 1, which may bear a 2 or 3-relation in the union clause. Other apparent exceptions to the inheritance principle directly follow from its interaction with such RG laws as the SUL¹ and the MCL².

In this section I have given an outline of the RG theory, the framework within which KN CCU is discussed.

2. PRELIMINARY FACTS :

In this Section, I will discuss the facts that are significant for the statements in the following sections.³ Such facts include verb agreement, passive and raising. The morphological facts used as evidence in the discussion of KN CCU are given in Abdel-Hafiz (1989) and, therefore, we need not repeat them here.

2.1 VERB AGREEMENT :

In KN, nominals that head final 1-arcs cue agreement on the verb. If there is no agreement or the wrong agreement, the clauses are not grammatical e.g.,

(14) a. ay ne : r-bu-r { $\begin{matrix} i \\ *u \end{matrix} \}$

I sleep-stat-prs-1sg/*2sg
'I am sleeping.'

b. er ti : -g ja : nos-s- { $\begin{matrix} u \\ *i \end{matrix} \}$

You cow-acc sell-pst 2sg/*1sg
'You sold the cow.'

c. tir ne : r-bu-r---- { $\begin{matrix} a \\ *i \end{matrix} \}$

they sleep-stat-prs-3pl/*1sg
'They are a sleep.'

A nominal that heads a final 2-arc cues agreement on the verb, as in the following :⁴

(15) a. ay buru : -g nal- (*ir) -s-i
I girl-acc see-plobj-pst-1sg
'I saw the girl.'

b. tir to : -k jom- (*ir) -s-a
they boy-acc hit-plobj-3pl
'They hit the boy.'

c. burw-i : -g issig- * (ir) -s-i
girl-pl-acc ask-plobj-pst-1sg
'I asked the girls.'

- d. kulw-i : -g inj-* (ir)(-s-a
stone-pl-acc carry-plobj-pst-3p
'They carried the stones.'

However, nominals bearing the chomeur or oblique relation cannot cue agreement on the verb; for example, the clauses in (16) would be ungrammatical if the oblique nominal cues agreement on the verb :

- (16) a. id e : n-gi ossi-cci-n dogor jom- (*ir) -s-u
man woman-acc leg-pl-Gen on hit-plobj-pst-3sg
'The man hit the woman on the legs.'
b. tir ti : -g kulw-i : gen jom- (*ir) -s-a
they cow-acc stone-pl-Inst hit-plobj-pst-3pl
'They hit the cow with the stones.'
c. buru kacci-cci-kir nog- (*ir) -s-a
girl house-pl-Dir go plobj-pst-3pl
'The girl went to the house.'

The examples given above are all monoclausal. KN also has some constructions involving a biclausal structure : an upstairs clause and a down-stairs clause. If the downstairs clause is non-finite (e.g. infinitival), the final I (of the downstairs clause) must agree with the verb in number : the agreement marker is -w if the final I is plural; otherwise no marker would appear on the verb :

- (17) a. buru : -g beddi-s-i nog-an
girl-acc beg-pst-1sg go-Inf
'I begged the girl to go.'
b. burw-i : -g bedd-ir-s-i mog-w-an
girl-pl-acc beg-plobj-pst-1s go-plsbj-Inf
'I begged the girls to go.'

On the basis of the preceding examples, I propose the following rule for verb agreement :

- (18) The verb agreement rule :⁵
Only final 1s and final 2s
cue agreement on the verb.

2.2 PASSIVE :

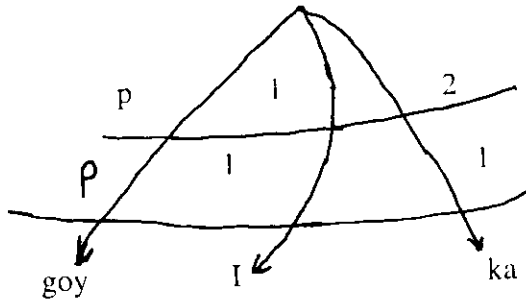
KN has two types of passives, personal passive and impersonal passive. Here we are concerned with the former type (personal passive) which involves a clause consisting of a final 1 and a final 2.⁶ Personal passives are illustrated by (19) – (22b) :

- (19) a. ay ka : -g goy-s-i
I house-acc build-pst-1sg
'I built the house.'
- b. ka goy-takki-s-u
house build-pass-pst-/sg
'The house was built.'
- (20) a. buru e:n-gi nal-s-u
girl woman-acc see-pst-3sg
'The girl saw the woman.'
- b. e: n nal-takki-s-u
woman see-pass-pst-3sg
'The woman was seen.'
- (21) a. id ti: -cci-g goj-ir-s-u
man cow-pl-acc slay-plopj pst-3sg
'The man slaughtered the cows.'
- b. ti: cci goc-cakki-s-a
cow-pl slay-pass-pst-3pl
'The cow were slaughtered.'
- (22) a. e: nkade : -gvu : kk-os-s-u
woman dress-acc wash-def-pst-3sg
'The woman washed the dress.'
- b. kadevu : kki-takk-os-s-u
dress wash-pass-def-pst-3sg
'The dress was washed.'

What distinguishes the passive sentences (i.e., (19) - (22b)) from the corresponding active ones (19) – (22a) is the presence of the verbal suffix – **takki** on the verb in the (b) clauses but not in the (a) clauses. Also, the nominal bearing the final 2-relation shows up as 1 in the (b) clauses. As a result, the initial 1 is placed on chomage.⁷ These facts

indicate the passive occurred in clauses like (19) – (22b). Thus the stratal diagram associated with a clause like (19) would be (23).⁸

(23)



In the previous examples (19) – (22), it has been shown that a nominal that heads a final 2-arc is I in a passive. However, nominals that do not head a final 2-arc can not advance to I in KN :

(24) a. aye: n-gi ka : -r el-s-i
 I woman-acc house-loc find-pst-1sg
 'I found the woman.'

b. *kae: n-gi el-takki-s-u
 house woman-acc find-pass-pst-3sg
 'The dress the woman was found in.'

(25) a. idti: -g kandi-ge gov-v-u
 man cow-acc knife-Instr slay-pst-3sg
 'The man slaughtered the cow with the knife.'

b. *kandi ti: -ggoc-cakki-s-u
 knife cow-acc slay-passpst-3sg
 'The knife the cow was slaughtered with.'

In *(24) – (25b) the nominals bearing the oblique relation (e.g. Locative or Instrumental) are allowed to advance to I; these clauses are, therefore rendered ungrammatical.

Thus the passive rule in KN can be stated in the final stratum as follows :

(26) Passive Rule :

Only final 2s can advance to I in a passive.

2.3 RAISING

KN has both raising to subject and raising to object (cf. Abdel-Hafiz 1985). Raising to subject is triggered by such predicates as **bine** 'seem', **imkin** 'probable', **aki:d** 'certain etc. (Abdel-Hafiz 1985 : 82); raising to object is triggered by predicates such as **hesb** 'believe', **nal** 'see', **oyir** 'know', **erje** 'expect' etc. (Abdel-Hafiz 1985 : 82). In both cases a downstairs nominal ascends to 1 or 2 in the upstairs clause, leaving behind a matching pronominal copy in the complement of downstairs clause.⁹

In KN raising constructions, only a downstairs final 1 or final 2 can ascend to a position in the upstairs clause :¹⁰

- (27) a. **bine** : -s-u to : d buru : -g ka : -r nal-s-u
 seem-pst-3sg boy firl-acc house-loc see-pst-3sg
 'It seemed that the man saw the girl at home.'
- b. **to:d** **bine** : -s-u (ter) buru : -g ka : -r nal-s-u
 boy seem-pst-3sg he firl-acc house-loc see-pst-3sg
 'The boy seemed to have seen the girl at home.'
- c. **buru** **bine** : -s-u to : d (tekki) ka : -r nal-sU
 girl seem-pst-3sg boy her house-loc see-pst-3sg
 'The girl seemed to have been seen by the boy.'

Other nominals may not ascend; for example, the nominal **ka : -r** which heads an oblique-arc (locative) in a clause like (27c) cannot ascend in the upstairs clause :¹¹

- (28) ***ka** **bine** : -s-u to : d buru-g tender nal-s-u
 house seem-pst-3sg boy girl-acc it-loc see-pst-3sg
 'The house seemed the boy saw the girl in it.'

The ascension rule in KN can be stated as follows :

- (29) KN ascension rule :
 Only final 1s and final 2s can ascend.

In this section I have gone through KN basic facts that are needed for the discussions; these facts include verb agreement passive and raising. In the following section I discuss KN CCU.

3. KN CCU :

KN causative phenomenon can be illustrated by clauses like (30b) and (31b) which are the causative counterparts of (30a) and (31a), respectively :¹²

(30) a. burw-i ne : r-s-a

girl-pl sleep-pst-3pl

'The girls slept.'

b. id burw-i: -gne: r-kidd-ir-s-u

man girl-pl-acc sleep-caus-plobj-pst-3sg

'The man caused the girls to sleep.'

(31) a. to: d buru: -get-s-u

boy girl-acc marry-pst-3sg

'The boy married the girl.'

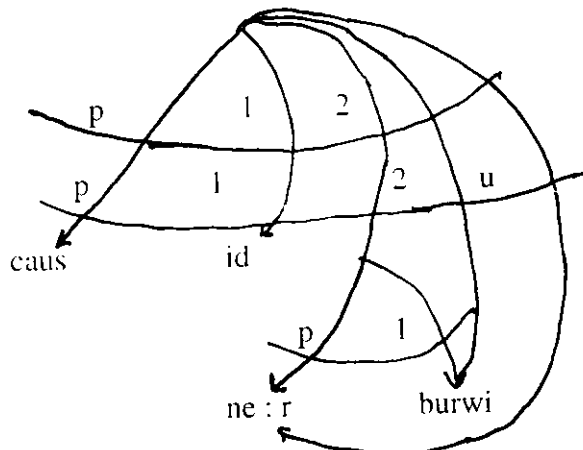
b. id to: -k buru: -get-kiddi-s-u

man boy-acc girl-acc marry caus-pst-3sg

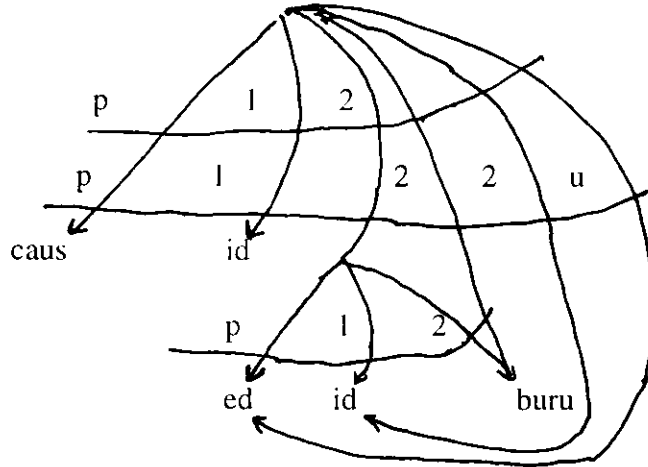
'The man caused the boy to marry the girl.'

By examining clauses like (30) – (31), I can state that KN CCU operates on a biclausal structure : a main or upstairs clause of which the predicate is the causative verb and a complement or downstairs clause, as evidenced by the GR that the downstairs clause holds to the upstairs clause prior to union. After union the two join to form a single clause (union clause) and the downstairs clause no longer bears a GR since we are now dealing with a single clause. This can be illustrated in (32) – (33) which are the stratal diagrams of (30b) and (31b) respectively :

(32)



(33)



As a consequence of union in clauses like (30b) and (31b), the downstairs clause dependents assume GRs in the union clause, that is, they are no longer the dependents of the downstairs clause (cf. section 3.3). The causee bears the 2-relation in the union clause irrespective of the underlying downstairs clause where it held a 1-arc prior to union.¹³ Other nominals maintain their downstairs clause GRs in the union clause.

A preliminary characterization of CCU in KN can be stated along the following lines :

(34) A preliminary characterization of CCU in KN :

- a. A causative construction is the result of the union of two clauses into a single clause.
- b. The final 1 of a downstairs clause (intransitive or transitive) becomes 2 in the union clause.

This characterization is not the final word on KN CCU but it is a hypothesis that needs further testing; there are several questions that we must answer before we adopt (34) as a final characterization of CCU in KN :

1. How do we know whether CCU in KN results from the fusion of two clauses into a single clause ? Is there any evidence for the biclausality and monoclausality of such constructions ?
2. How do we know whether the causee is a 2 in the union clause and what becomes of the other dependents of the downstairs clause ?

3. Does this characterization conform to the proposals of Perlmutter and Postal (1974) and Gibson and Raposo (1986) ?

The following sections are dedicated to answer these questions and pave the way for an adequate characterization of CCU in KN in the universal perspective.

3.1 EVIDENCE FOR BICLAUSALITY :

KN causative clauses like (30) – (31b) are based on a biclausal structure : the embedded or downstairs clause and the upstairs clause. Their union results in a single or monoclausal structure where the dependents of the downstairs clause are mapped onto the upstairs clause.

In the following discussion attempt will be made to establish the biclausal source of KN causative clauses. In order to substantiate the biclausal source of such clauses as (30b) and (31b), I provide evidence regarding the superiority of such a hypothesis to another analysis — the monoclausal analysis — that claims that clauses like (30b) and (31b) have never been biclausal; their input — like the output — is monoclausal. The arguments are drawn on w-agreement and the order of morphemes.

(a) W-agreement :

In KN causative clauses that have the verbal suffix **-an** or **-as**, the verb manifests agreement with nominals like **buru: -g** (35a), **burw-i-gi** (35b) and **it-ti** (36b); the agreement marker is **-w** if this nominal is plural :

- (35) a. id buru: -g ne: r- (*w) -s-u
man girl-acc sleep-plsobj caus-pst-3sg
'The man caused the girl to sleep.'
- b. ogj-i burw-i : -g ne : r- *(w) -as-s-a
man-pl girl-pl-acc sleep plsobj-caus-pst-1pl
'The men caused the girls to sleep.'
- (36) a. id to : -k burw-i : -g ed- (*w) -as-s-u
man boy-acc girl-pl-acc marry-plsobj-caus-pst-3sg
'The man made the boy marry the girls.'

- b. ogj-i ton-i : -g burw-i : -g ed- *(w) -as-s-a
 man-pl boy-pl-acc girl-pl-acc marry-plsbj-caus-pst-lpl
 'The men made the boys marry the girls.'

There is no way for the monoclausal analysis which claims that clauses like (35) – (36) have never been biclausal to account for the fact that the nominal **burw-i: -g** in clauses like (35b) triggers w-agreement whereas the name nominal in (36a) can not cue w-agreement on the verb. The condition can not be stated in terms of the final GR (i.e., direct object in their respective clauses).

In contrast, the biclausal analysis (adopted here) would account for KN w-agreement phenomenon by claiming that only nominals that hold the final I-relation in the complement or downstairs clause cue w-agreement on the verb. Thus the nominal **burw-i: -g** in clauses like (35b) cues agreement (w-agreement) on the verb since it is the only nominal that bears the final I-relation in the downstairs clause. In (36a) the nominal **burw-i: -g** is a final 2 in the downstairs clause and it can not cue w-agreement on the verb. Thus only an analysis that recognizes the biclausal source of KN causatives can account for w-agreement¹⁴.

(b) ORDER OF MORPHEMES :

A further argument for the biclausal analysis of clauses like (30b) and (31b) is the order of the causative morpheme with respect to the agreement morpheme. According to the Mirror Principle (Baker 1985), the order of morphemes resulting from morphosyntactic operations reflects the order in which the syntactic rules applied. Thus in KN the verbal suffix **-an** occurs outside the (-w) agreement morpheme as shown in (35) – (36). The monoclausal analysis can not, in a principled way, account for the way these morphemes are ordered. According to this analysis, the order in which the morphemes in question appear is accidental.

In contrast, the biclausal analysis adequately explains the reason why the verbal suffix **-an** and the agreement suffix occur the way they do. The former is outside (i.e. follows) the latter, thus showing the order of application of the agreement rule and the causative rule : the agreement rule occurs in the downstairs clause (prior to Union) where the final I cues agreement on the downstairs verb. This is followed by the causative rule.

Thus we have established the biclausal source of KN causatives. It has been shown that an alternative analysis (the monoclausal analysis) which denies the biclausal source of KN causatives is explanatorily inadequate for it fails to account for such facts as w-agreement and the order of morphemes.

3.2 EVIDENCE FOR THE MONOCLAUSALITY OF KN CCU :

In this section, I will discuss and provide evidence for the fact that a KN causative clause like (30) and (31) constitutes a single clause.¹⁵ The evidence is based on the fact that such constructions contain a single predicate.

(a) ARGUMENT 1 :

In KN predicates of a biclausal structure are allowed to separate from each other by open class elements (e.g. adverbs); for example, the equi construction (cf. Abdel-Hafiz 1985), which has a biclausal structure, allows the separation of the downstairs and the upstairs predicates :

- (37) a. it-ti beddi-s-i ta: -r-an
man-acc beg-pst-lsg come-prs-Inf
'I begged the man to come.'
b. it-ti beddi-s-i asalgi ta : r-an
man-acc beg-pst-lsg tomorrow come-prs-Inf
'I begged the man to come tomorrow.'

In (37) the predicates of the two clauses are separated by an open class member (asalgi). According to the biclausal analysis, KN causative clauses have a biclausal structure but no monoclausal structure at any level. If this hypothesis is sound, clauses like (30-31) should be able to have an open class member (e.g. an adverb) between the two predicates. This, however, is not the case :

- (38) a. id burw-i : -g ne : r-kidd-ir-s-u
man girl-pl-acc sleep-caus-plobj-pst-3sg
'The man made the girls sleep.'

- b. *id burw-i : g ne : r wi : lgi kidd-ir-s-u
 man firl-pl-acc sleep yest. caus-plobj-pst-3sg
 'The men made the girls sleep yesterday.'

- (39) a. id to : -k buru : -g et-kiddi-s-u
 man boy-acc girl-acc marry-caus-pst-3sg
 'The man made the boy marry the girl.'

- b. *id to : -k buru : -g ed mando kiddi-s-u
 man boy-acc girl-acc marry there caus-pst-3sg
 'The man made the boy marry the girl there.'

The biclausal analysis would have difficulty explaining why clauses like (37b) are grammatical whereas those in (38 – 39b) are not. The only answer available to this type of analysis is an ad hoc one : the predicates of a biclausal structure are not separated if the upstairs predicate is a causative verb.

In contrast, the monoclausal analysis would claim that clauses like (37b) are grammatical since the predicates do not constitute a unit; they are the properties of different clauses. Clauses like (38 – 49b) are ungrammatical since the predicates now constitute a unit that should not be interrupted¹⁵.

(b) ARGUMENT 2 :

Another argument for the monoclausal output of KN CCU is based on inflection. In KN, verbs must take tense and agreement markers (cf. Abdel-Hafiz 1989). Each predicate of a construction that operates on a biclausal structure would have its own tense and agreement markers :

- (40) a. ay to : -k hesbe-s-i bo : d-s-u
 I boy-acc believe-pet-1sg run-pst-3sg
 'I believed the boy to have run.'
- b. *ay to : -k hesbe bo : d-s-u
 I boy-acc believe run-pst-3sg
 'I believed the boy to have run.'

A clause like (40), which involves raising to object, is not grammatical since the predicate of the upstairs clause does not carry tense and agreement markers.

Given this, if — as claimed by the biclausal analysis — clauses like (30 – 31b) are biclausal rather than monoclausal, then they should allow each predicate to carry tense and agreement affixes :

- (41) a. *id burw-i : -g ne : r-s-a kiddi-s-u
man girl-I-acc sleep-pst-3pl caus-pst-3sg
'The man made the girls sleep.'
- b. id birw-i : g ne : r-kiddi-s-u
man girl-pl-acc sleep-caus-pst-3sg
'The man made the girls sleep.'
- (42) a. *id to : -k buru : -g et-s-u kiddi-s-u
man boy-acc girl-acc marry-pst-3sg caus-pst-3sg
'The man made the boy marry the girl.'
- b. id to : -k buru : -g et-kiddi-s-u
man boy-acc girl-acc marry cause-pst-3sg
'The man made the boy marry the girl.'

There is no way for the biclausal analysis to account for the fact that the predicates in clauses like (41) – (42) behave differently than the predicates of clauses like (40 a-b) where each predicate has its own tense and agreement markers. In order to account for this difference, the biclausal analysis would have nothing to offer but ad hoc statements : two predicates of which the higher predicate is causative would share tense and agreement markers.

In contrast, the monoclausal analysis does not have any difficulty explaining the difference between clauses like (41) – (42) and clauses like (40) : in clauses like (41) – (42) the causative verb (**-kiddi**) and the downstairs predicate must constitute a single inseparable unit whereas the predicates in clauses like (40 a-b) are independent entities. Thus the reason why clauses (41) – (42) behave in this way is accounted for by the monoclausal analysis without reference to ad hoc statements that would complicate the grammar of KN.

Thus I have attempted to give evidence for the monoclausal output of KN CCU. It has been shown that the monoclausal analysis is more valuable than an analysis that imposes a biclausal analysis for the output of KN CCU. It accounts for various KN phenomena that can not be explained without resort to adhocity.

3.3 THE GR OF THE DEPENDENTS OF THE DOWNSTAIRS CLAUSE IN THE UNION CLAUSE :

In this section I will deal with the grammatical relations borne by the downstairs clause dependents in the union clause. It has just been pointed out (cf. section 1.1) that Perlmutter and Postal (1974) propose a rule 'the ergative analysis of CCU' that predicts the GR held by a dependent of the downstairs clause in the union clause :

(43) Clause union rule :

In a causative construction an intransitive downstairs final 1 becomes 2 in the union clause; a final 1 of a transitive downstairs clause ends up as 3 in the union stratum. All other nominals bear the emeritus relation.

Here it will be shown that KN does not adhere to this rule : a final 1 of an intransitive as well as a transitive downstairs clause will surface as 2 in the union stratum, as shown in clauses like (44 – 47b) :¹⁶

(44) a. to bo : d-s-u

boy run-pst-3sg
'The boy ran.'

b. to : -k bo : t-kiddi-s-a

boy-acc run-caus-pst-3pl
'They caused the boy to run.'

(45) a. id mando te : b-i

man there stand-3sg
'The man is standing there.'

b. it-ti mando te : b-kiddi-s-a

man-acc there stand-caus-pst-3pl
'They made the man stand there.'

(46) a. e : n it-ti jom-s-u

woman man-acc hit-pst-3sg
'The woman hit the man.'

b. e : n-gi it-ti jom-kiddi-s-i

woman-acc man-acc hit-caus pst-lsg
'I caused the woman to hit the man.'

- (47) a. buru kac-ci egir-s-u
girl horse-acc ride-pst-3sg
'The girl rode the horse.'
- b. id buru : -g kac-ci egir-kiddi-s-u
man girl-acc horse-acc ride-caus-pst-3sg
'The man made the girl ride the horse.'

Nominal that do not bear a term-relation (obliques and chomeurs) inherit the GR they held before union :

- (48) a. id ka : -r a : g-s-u
man house-loc stay-pst-3sg
'The man stayed at home.'
- b. it-ti ka : -r ag-iddi-s-i
man-acc house-loc stay-caus pst-lsg
'I caused the man to stay at home.'

Clauses like (44 – 47b) show that the causee (i.e. the downstairs clause final 1) bears the final 2-relation in the union clause irrespective of the type of clause that is embedded (intransitive or transitive). This is confirmed by such KN facts as verb agreement, passive and raising. A nominal bearing a final 2-relation undergoes such rules (cf. Section 2). Thus if the causee is a final 2 in clauses like (44b) and (46b), it should be able to advance to 1 (subject) under passive, to object-agree with the verb and to raise to (1 or 2) if embedded under a raising trigger. That this is the case can be seen in (49 a-b) (passive), (50 a-b) (agreement) and (51 a-b) (raising) :

- (49) a. to bo : t-kiddi-takki-s-u
boy run-caus-pass-pst-3sg
'The boy was made to run.'
- b. e : n it-ti jom-kiddi-takki-s-u
woman man-acc hit-caus-pass-pst-3sg
'The woman was caused to hit the man.'
- (50) a. ton-i : g bo : t-kidd- *(ir)-s-a
boy-pl-qcc run-caus-ploj-pst-3pl
'They caused the boys to run.'
- b. e : -cci-g it-ti jom-kidd- *(ir)-s-i
woman-pl-acc man-acc hit-caus ploj-pst-lsg
'I caused the woman to hit the man.'

- (51) a. to : -k hesbe-s-i (tir) bo : t-kiddi-s-a
boy-acc believe-pst-lsg (they) run-caus-pst-3pl
'I believed the boy to have been caused to run.'
- b. e : n-gi hesbe-s-i it-ti jom-kiddi-s-i
woman-acc believe-pst-lsg man-acc hit-caus-pst-lsg
'I believed the woman to have hit the man.'

The facts (passive, verb agreement, and raising) presented here clearly indicate that the causee in clauses like (44b) and (46b) bears the final 2-relation in the union stratum.

The fact that the nominal that bears the final 1-relation in a downstairs transitive clause ends up as 2 in the union stratum violates Perlmutter and Postal (1974)'s proposal as given in (43). This might be easily accounted for by Gibson and Raposo (1986)'s proposal :

- (52) Downstairs final 1 ends up as 2 or 3 depending on language specific preference. Other nominals inherit their GR in accordance with RG laws such as SUL and Motivated Chomage Law.

The GR of the dependents of the downstairs clause in the union stratum is determined by the principle in (52) which has been basically motivated by facts reported in such a language as Chamorro (Gibson 1980) where the downstairs final 1 (of any clause) ends up as 2 in the union stratum and the GR borne by the other nominals is in line with the SUL and the Motivated Chomage Law.

The fact that the downstairs final-in KN, irrespective of the transitivity of the clause, shows up as 2 in the union stratum is accounted for by the principle proposed by Gibson and Raposo (1986). However, the GR borne by the downstairs final 2 in the union clause is not in line with this proposal : the downstairs final 2 is not chomeurized in the union clause, as predicted by the Motivated Chomage Law (cf. note 2). This results in a stratum where two nominals (i.e., the causee and the downstairs final 2) bear the 2-relation, thus violating the SUL (cf. note 2) which prevents two or more nominals from bearing the same GR in the same stratum.¹⁷ In clauses like (46b) and (47b) the downstairs clause final 2 (e.g. **it-ti** in (46b) which should be placed en chomage in conformity to the Motivated Chomage Law maintains its GR in the union thus indicating that there are two nominals that have the same GR in the same stratum. The evidence is based on the fact that

such nominals behave as final 2; for example, the nominal **it-ti** in clauses like (46b) can advance to 1 in a passive (53a), agree in number with the verb (53b), and can raise to object (53c) :

- (53) a. id e : n-gi jom-kiddi-takki-s-u
man woman-acc hit-caus-pass-pst-3sg
'The man was caused to be hit by the woman.'
- b. e : n ogj-i : -g jom-kidd-ir-s-i
woman man-pl-acc hit-caus plobj-pst-lsg
'I caused the woman to hit the men.'
- c. it-ti hesbe-s-i e : -n gi (tekk) jom-kiddi-s-i
man-acc believe-pst-lsg woman-acc him hit-caus-pst-lsg
'I believed the man the woman hit him.'

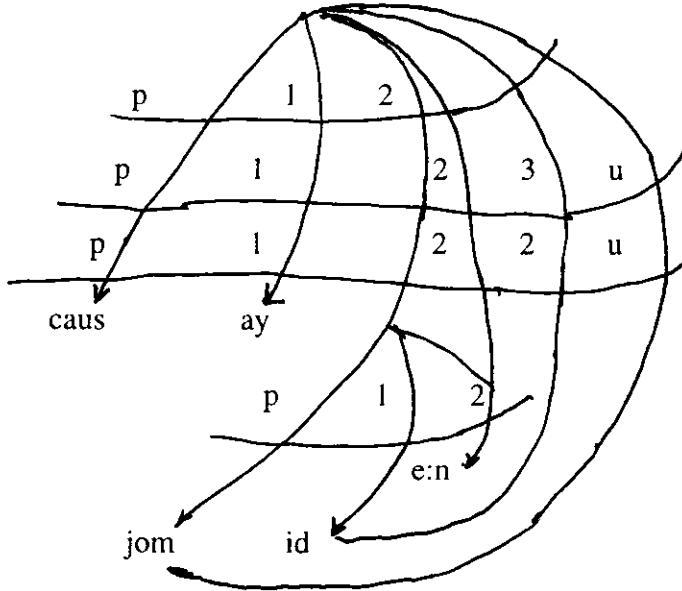
3.4 AN ALTERNATIVE ANALYSIS :

The KN facts discussed above constitute violations of RG laws. Such violations have always been encountered by alternative analyses. In order to maintain the clause union rule as explicated in Perlmutter and Postal (1974), and the other RG laws (e.g. the SUL and the Motivated Chomage Law), Perlmutter and Postal propose the Invariant Output Hypothesis (cf. Cole and Sridhar 1977 : 700) which claims that :

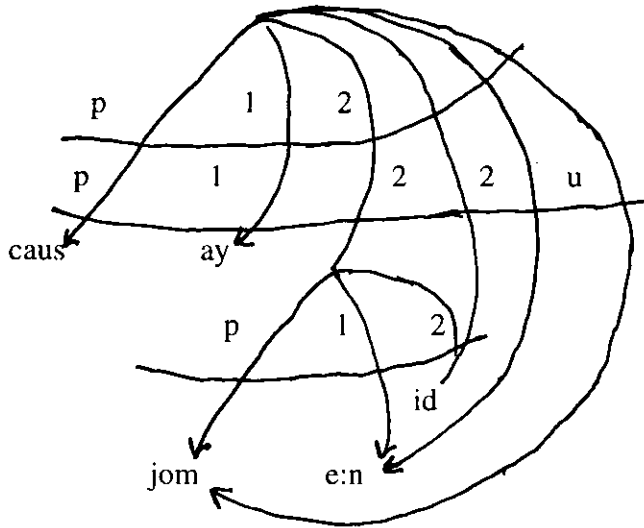
Clause Union (CU) specifies the derived grammatical relation of the complement subject in the same way in all languages. All divergences among languages in terms of the surface grammatical relation of the phrase are due to the application of some other rule affecting grammatical relations either prior to or subsequent to the application of CU.

KN causative clauses like (46b) and (47b) can be analyzed in such a way that the clause union rule and the SUL can be maintained. Thus it might be claimed that in KN clauses like (46b) the final 1 of the downstairs transitive clause ends up as 3 (IO) in the union stratum. This is immediately followed by advancement to 2. Thus a clause like (46b) would have the stratal diagram (54) rather than (55) :

(54)



(55)



This analysis seems promising and feasible for KN which has obligatory 3-to-2 advancement (cf. Abdel-Hafiz 1985).

However, there is an incorrigible problem with this analysis. If KN causative clauses like (46b) involve advancement after union, we should expect the nominal bearing the initial 2-relation (**id**) in the union clause to be a chomeur; it should not have the properties of a final 2.

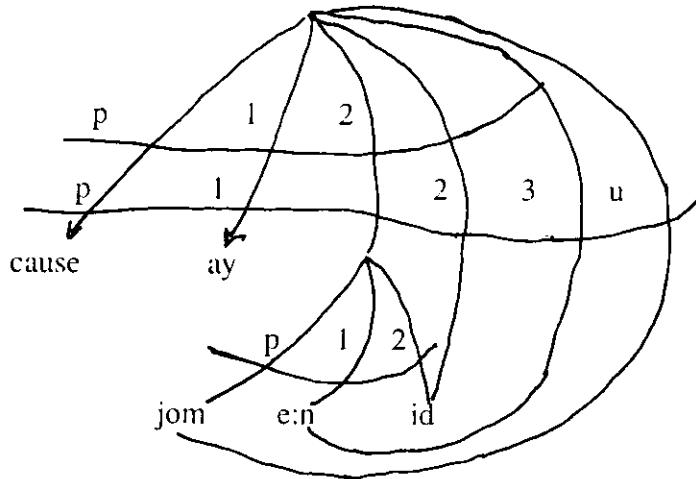
This is the fate of the initial 2 in 3-to-2 advancement, for example, the nominal **kita:b**, which bears the initial 2-relation in clauses like 956a), cannot advance to 1 in a passive (56b) or cue agreement on the verb (56c) indicating that it is not a final 2 :

- (56) a. id e : n-gi kita:b-ki tir-s-u
 man woman-acc book-acc give-pst-3sg
 'The man gave the woman the book.'
- b. *kita:b e:n-gi tir-takki-s-u
 book woman-acc give-pass-pst-3sg
 'The book was given the woman.'
- c. id e:n-gi kita:b-i : -g ti- *(ccir)-s-u
 man woman-acc book-pl-acc give-plobj-pst-3sg
 'The man gave the woman the books.'

Returning to causative clauses like (46), we find that the nominal **it-ti** in clauses like (46b) should be placed en chomage in accordance with the Motivated Chomage Law and as a consequence of 3-to-2 advancement proposed by the Invariant Output Hypothesis which proposes (54) as being the stratal diagram of clauses like (64b). However this nominal (**it-ti**) behaves as a final 2 in the union clause for it can advance to 1 in a passive (53a), it cues agreement on the verb (53b) and it can ascend if embedded in a raising sentence (53c). These facts indicate that clauses like (46b) should be analyzed as in (55) where it is clearly shown that the union stratum contains two nominals bearing the 2-relation. Note that such an analysis argues against Gibson and Raposo (1986)'s proposal which predicts that the nominal **it-ti** in clauses like (46b) would be a chomeur since the union stratum already contains a nominal bearing the 2-relation.

Another analysis might claim that KN causative construction adheres to Perlmutter and Postal (1974)'s proposal (the ergative analysis of CCU) as given in (54). It will be argued that the final 1 of a downstairs transitive clause in (46b) shows up as 3 in the union stratum. KN 3s, it will be argued, have the properties of final 2s. Thus a clause like (46b) would have the stratal diagram (57) :

(57)



If this analysis were correct, it would indicate that KN CCU adheres to the SUL and the Union rule. However, this analysis has some problems.

It has been repeatedly claimed that KN 3s are not attested on surface; they obligatorily advance to 2 (cf. Abdel-Hafiz 1985) : this is shown by the fact that the initial 2 is placed en chomage. It, therefore, cannot advance to 1 in a passive (58b) or cue agreement on the verb (58c) :

- (58) a. *it-ti kita:b-ki tir-s-i*
 man-acc book-acc give-pst-lsg
 'I gave the man the book.'
- b. **kita:b it-ti tir-takki-s-u*
 book man-acc give-pass-pst-3sg
 'The book was given the man.'
- c. *kita:b-i -g it-ti ti-(*ccir)-s-i*
 book-pl-acc man-acc give plobj-pst-lsg
 'I gave the man the books.'

Thus if the causee in a clause like (46b) bears the 3-relation in the union stratum, it should obligatorily advance to 2, placing the initial 2 (e.g. **it-ti**) en chomage.

However, this analysis is not tenable since the initial 2 still maintains its 2-hood : e.g. it cues agreement on the verb :

- (59) e:n-gi id-i : -g jom-kiddi-*(ir)-s-i
woman-acc man-pl-acc hit-caus-plobj-pst-lsg
'I caused the woman to hit the men.'

The fact that a nominal like **id** 'man' bears the final 2-relation in clauses like (59) but not in clauses like (58) suggests that there is no advancement involved in clauses like (59). Thus the claim that KN transitive clause final 1 bears the 3-relation (that does not advance to 2) in the union stratum seems to be ad hoc.

The facts discussed above tell us that KN causative clauses should not allow the advancement rule to apply to the output of union. We are now in a position to characterize KN CCU along the following lines :

(60) Causative Clause Union in KN :

- a. Two clauses (the upstairs clause and the downstairs) are collapsed into a single clause.
- b. The downstairs final 1 becomes 2 in the union clause irrespective of the type of the underlying downstairs clause, transitive or intransitive.
- c. Other nominals inherit their GR in the union from the downstairs clause; this includes the downstairs 2 which is not placed en chomage.

4. CONCLUSION :

In this work I discussed KN CCU in the framework of Relational Grammar (cf. Section 1). It has been claimed that such a construction is based on a biclausal structure (an upstairs) clause and a downstairs clause) which is collapsed into a single clause. Evidence for the biclausal input of CCU (section 3.1) and its monoclausal output (section 3.2) has been provided. The evidence is based upon such facts (cf. section 2) as verb agreement, passive and raising.

KN CCU (section 3) is shown to violate the 'Ergative Analysis' proposed by Perlmutter and Postal (1974) and the Inheritance Principle of Gibson and Raposo (1986). The final 1 of a downstairs clause is 2 in the union clause. This occurs whether the downstairs clause is transitive or intransitive. In such a case the final 2 of the downstairs clause is not placed en chomage as predicted by the Inheritance principle (Gibson and Raposo 1986).

NOTES

1. The stratal uniqueness law has been stated (cf. Perlmutter and Postal 1983 : 92) as follows :

No stratum can contain more than one 1-arc, one 2-arc, or one 3-arc.

2. Before introducing the motivated chomage law we, first, need to state the chomeur law which has been violated by data taken from Kinyarwanda (cf. Kimenyi 1980) and its reformulation led to the motivated chomage law :

The chomeur law (Perlmutter and Postal 1983) :

A nominal whose grammatical relation is taken over by another nominal in the next stratum bears the chomeur relation in that stratum.

This law has been abandoned and replaced by the motivated chomage law (Perlmutter and Postal 1983 : 99).

The motivated chomage law :

A nominal bearing the Cho-relation in certain stratum should bear a term relation in the initial stratum. This term relation should be held by another nominal.

3. Only the facts that are relevant in the discussion of CCU in KN are included here.
4. The asterisk within the brackets indicates that the clause is ungrammatical if the bracketed element is present: the asterisk outside the brackets shows that the clause is ungrammatical without the element in brackets.
5. It is essential that the agreement rule be stated in terms of grammatical relations (e.g. subject etc.) KN data would not allow the agreement rule to refer to semantic relations or functions (e.g. agent) :

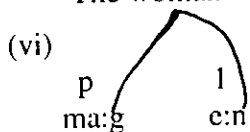
- (i) e:n bo:d-s-u
woman run-pst-3sg
'The woman ran.'

- (ii) buru digir-s-u
girl fall-pst-3sg
'The girl fell.'
- (iii) id jom-takki-s-u
man hit-pass-pst-3sg
'The man was hit.'
- (iv) burw-i it-ti jom-s-a
girl-pl man-acc hit-pst-3pl
'The girls hit the man.'

In (i) – (iv) the nominals (e.g. **buru**) in (ii) which cue agreement on the verb have different semantic roles : 'agent' in (i) and (iv) : 'patient' in (ii) and (iii). It is not possible to state the agreement rule in terms of semantic relations : the semantic function of the nominal **id** is identical in (iii) and (iv), namely 'patient'; this nominal cues agreement in (iii) but not in (iv). Only if we refer to the GRs these nominals hold can we capture the generalization here : all nominals cueing subject agreement on the verb bear the final l-relation.

- 6. Impersonal passive is discussed in Abdel-Hafiz (1989); it involves or applies to a special class of intransitive clauses.
- 7. The chomeur law (cf. footnote 2) claims that a nominal bears a Cho-arc in the stratum where its GR is taken over by another nominal. For discussion, see Perlmutter (1980).
- 8. In a theory that allows only one syntactic level, clauses like (v) would have the stratal diagram (vi).

- (v) e:n ma:k-takki-s-u
woman rob-pass-pst-3sg
'The woman was robbed.'



Thus (vi) shows that the nominal **e:n**, which heads a l-arc, has not had any initial GR. I do not have arguments against this proposal but other KN constructions (e.g. Benefactive to 2 advancement (Abdel-Hafiz 1989) will prove that a theory that permits nominals to have more than one GR is superior to a theory that does not.

9. Evidence for the final 1-hood and 2-hood of the ascende in the upstairs clause is given in Abdel-Hafiz (1985). The GR held by the ascende in the upstairs clause is determined by the Relational Succession Law (RSL) (Perlmutter and Postal 1983 : 53) :

An NP promoted by an ascension rule assumes the grammatical relation borne by the host out of which it ascends.

10. The status of the ascende (final 1 or final 2) in the complement or downstairs clause is discussed in Abdel-Hafiz (1985). The fact that either a complement clause final 1 or 2 can ascend violates Postal (1974)'s proposal that raising is universally restricted to complement clause final 1 (subject) only.

11. This is in accordance with the RG law cited in note 9 above (RSL) which predicts the impossibility of ascending such nominals.

12. The analysis of KN here is not compatible with Comrie (1975, 1976)'s Paradigm Case which is, in a sense, like Perlmutter and Postal (1974)'s proposal regarding the fate of the dependents of the downstairs clause in the union clause :

(i) Paradigm Case :

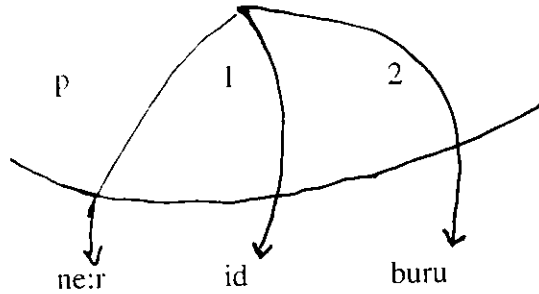
embedded subject is demoted to the first available position in the hierarchy.

Comrie's proposal — like that of Perlmutter and Postal — does not permit doubling in one position. Thus the subject of an intransitive clause is predicted to show up as DO in the union stratum since the DO position is available for this. The subject of a transitive clause cannot end up as DO in the union stratum since the DO position is already occupied by the embedded DO; the subject must take the 10 position.

13. Dik (1981 : 60) shows that in Dutch the relation the subject of a transitive complement clause assumes in the union clause is determined by the properties of the verb.

14. For discussion against positing a bisentential analysis for causatives, see Dik (1981 : 62).

15. A monoclausal analysis for KN causatives would claim that clauses like (38a) would have the stratal diagram (ii) :



16. There are several languages (e.g. Kannada and Hebrew (Cole 1976; Cole and Sridhar 1977); Chamorro (Gibson (1980) in which the final 1 of a transitive downstairs clause does not surface as a 3 in the union stratum.
17. The SUL is also violated in Kinyarwanda (Kimenyi 1980) 3-to-2 advancement constructions. The nominal bearing the 2-relation in the initial stratum is not demoted to chomeur when the advancee takes over its GR, thus resulting in a case where two nominals bear the same GR (DO) in a single stratum. This eventually led to the abandonment of the Chomeur Law. The SUL was, however, maintained by analyzing Kinyarwanda (Perlmutter and Postal 1983) in such a way that the SUL is not violated.

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