TOWARD A GRAMMAR OF RELATIVE CLAUSES IN T'IN

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The purpose of this paper is to describe the
structure of the relative clause in T'in both from
a syntactic and phonological viewpoint and to inter-
relate these two aspects of linguistic structure in
a grammar. Of late much has been written about the
close interrelatedness holding between syntactic and
phonological phenomena and how both must be de-
scribed, not in separate components, but in an inte-
grated manner. The data and proposals to be pre-
sented below are meant to forward this discussion by
showing that such an integration of syntactic and
phonological information is necessary in describing
the relative clause in T'in.

Data for the relative clause in T'in is taken
from the dialect described in Filbeck (1965). The
data for the relative clause from this dialect is
vitiated somewhat because of a distinctive rising
tone (Filbeck 1972), but it is the dialect I have
spoken for a decade and I am well acquainted with
its relative clause structure. However, for this
paper words containing this rising tone have been
included in the examples only in environments where
it will not unduly complicate the phonological
analysis of relative clauses. Moreover, because of
restricting our data to just the one dialect, I am
unable to say how valid the resulting grammatical
description of the relative clause will be for other

n dialects, especially concerning the phonological
ects of the description.

Syntax of the Relative Clause in T'in

In this section I shall briefly discuss the
ntax of the relative clause in T'in from two view-
ints: first the positional, i.e. where it occurs
relation to member constituents in construction;
second the generative viewpoint, where gramma-
al structure is viewed more abstractly as
odying a system of rules which accounts for
rious properties of the data under observation.

The relative clause is defined structurally as
embedded S(entence) dominated by the node NP. In
is way it may receive an interpretation as a
difier of a head noun. This is the basic config-
ation of the relative clause in T'in.

1. səc   ʔiibun   thoon   suʔ
    meat   Boon   buy   spoiled
    The meat that Mrs. Boon bought is spoiled.

words /ʔiibun thoon/ 'Mrs. Boon buy' is a
lative clause following and modifying the head noun
əc/ 'meat' which is the subject of the verb /suʔ/
poiled'. As can also be seen in this sentence,
in relative clauses do not contain a relative
onoun.

An embedded S is not the only modifier of the
ad noun under the node NP in a grammar of T'in.
in employs a system of classifiers along with
merals to denote quantity.

2. siŋ   bakɛɛw   thoon   piaʔ   naŋ   pəl
    Pig   Kaew   buy   two   cl.   die
    The two pigs which Mr. Kaew bought died.

The phrase /piaɁ naŋ/ 'two (classifiers for ani-
mals), although modifying /siŋ/ 'pig', occurs in
positional order separated from the head noun by the
relative clause. When a determiner is used, again
modifying the head noun of the phrase, it likewise
follows the relative clause and also the classifier.

3. siŋ bakɛɛw thoon piaɁ naŋ Ɂeˇen pəl
    pig Kaew   buy   two   cl. that die
    Those two pigs which Mr. Kaew bought died.

An adjective, on the other hand, modifying a
head noun of a Noun Phrase, occurs positionally
before the relative clause but following the noun.

4. ɁiaɁ   kluak bakaew thoon pəl
    chicken white Kaew   buy   die
    The white chicken which Mr. Kaew bought
      died.

An adjective, in a grammar of T'in, is most simply
derived from an underlying embedded sentence also
dominated by an NP node. In other words, /kluak/
'white' above is structurally a relative clause and,
as we will see below, is derived in the same manner
transformationally as any other relative clause. Al
adjectives in T'in are also marked [+Verb] (but not
all verbs are marked [+Adj]), for an adjective may
occur as the main verb in a sentence. This of cours
is a common feature for many languages of the same
area.

The structure of the possessive in relation to
the relative clause in T'in is more difficult to
describe. Possession of the head noun occurs posi-
tionally between the adjective and relative clause.

5. ʔiaĭ   kluak   ʔəñ   bakɛɛw   thoon   pəl
   chicken   white   I   Kaew   buy   die
   My white chicken which Mr. Kaew bought died.

ssession in recent linguistic theory, however, is
scribed as a part of the determiner system of a
nguage. Without attempting to justify this assump-
on at this point, I claim that this is true of T'in
so. That is, the demonstrative /ʔeĕn/ 'that' above
d the possessive here belong to the same category.
cause the possessive and demonstrative occur in
fferent positions with respect to the head noun when
th occur together in a phrase, one or the other must
 transformationally moved, i.e. the demonstrative
om the possessive slot or the possessive from the
monstrative slot. Again, without justifying the
ocedure, I posit that it is the possessive that is
ved *from a Determiner slot which occurs after the*
lative clause under the node Noun Phrase. There-
re, the structural configuration of the relative
ause in T'in, including its member constituents and
eir positional, syntagmatic relationships to each
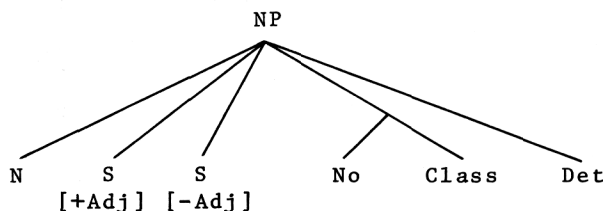her, may be summed up by the schema in Figure 1.


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                        NP
         ┌────┬────┬────────┼──────────┬──────────┐
         N    S    S       No        Class       Det
           [+Adj] [-Adj]
```

Figure 1

this schema, for the purpose of this paper, I am
ly interested in discussing the embedded occurrences
 S, the relative clauses. I will have nothing more

to state or claim about any other constituent in the
schema.

Figure 1 assumes that the relative clause in T'
is to be described in terms of a deep structure and
surface structure. For example, the deep structure
of sentence (1) is shown in the following.

6. [sǝc [?iibun thoon sǝc]$_S$]$_{NP}$ [su?]$_{PDP}$
   meat Boon   buy meat   spoiled

To derive the surface structure (1), an Equi-NP-
Deletion rule must operate. This rule states that,
under conditions of identity, the occurrence of /sǝc
'meat' in the embedded sentence is erased by an
initial occurrence of the same form in the main
clause. Adjectives are generated by the same trans-
formational rule from the same type of deep structur
For the sentence

7. khyaak sǝk poŋ ŋua?
   buffalo big eat rice
   The big buffalo ate the rice.

the deep structure reads as follows:

8. [khyaak [khyaak sǝk]$_S$]$_{NP}$ [poŋ ŋua?]$_{PDP}$
   buffalo buffalo big   eat rice

Because of being identical in form and reference, th
occurrence of /khyaak/ in the embedded sentence is
erased by an Equi-NP-Deletion rule, thus yielding th
surface structure (7).

Up to this point I have given a few illustra-
tions of restrictive relative clauses in T'in. Non-
restrictive relative clauses are also possible in
this language, but they are much rarer than the

trictive type. I have found only one environment
rein nonrestrictive relative clauses occur, namely
modifiers of personal names.

   bapǎn   phyam   sɛɛm   mpua?, to? ?əc
   Mr. Pan person raise cow   come   already
   Mr. Pan, who raises cows, has returned home.

now of no other type of noun which may also take
onrestrictive relative clause; however, this lacuna
be due more to my lack of success in elicitation
n to any real absence of examples in other envi-
ments. Despite this gap in my data, however, this
tence is still interesting of itself. The words
yam sɛɛm mpua?/ 'person raise cow' is a nonre-
ictive relative clause, but it does not behave
e other relative clauses in T'in, i.e. there is no
etion of any Noun Phrase in the relative clause.
reason for this is the fact that there is no
ntity (in either phonological form or true
erence) between /bapǎn/ 'personal name', the
ject of the main clause, and /phyam/ 'person', the
ject of the embedded clause. Instead, the subject
the embedded clause *classifies* the subject of the
n clause and behaves like a relative pronoun.
er nouns, whose semantic domains also include
se of personal names may serve in this capacity.

   10. ?iibun, məəy ?iah kək puc,   to? ?əc
        Boon   woman   boil whiskey come already
        Mrs. Boon, who makes whiskey, has returned
          home.

   The problem confronting an analyst at this point
describing the underlying structure of nonrestric-
e relative clauses in T'in. There are two

alternatives, each accounting in a primary way for
different aspects of the problem.

One alternative is to emphasize the pronominal
function of the subject noun of the embedded sentenc
We may capture this by assuming that the deep struc-
ture of (9) contains an identical occurrence of the
main clause subject in the relative clause.

11. [bapǎn [bapǎn sɛɛm mpua?]$_S$]$_{NP}$ [to? ?əc]$_{PI}$

      Pan   Pan   raise cow   come alread

Next, a transformational rule would delete the secon
occurrence of /bapǎn/ above and replace it with
/phyam/ 'person'. This proposal, however, would
entail that such a transformational process result i
a change of meaning, from the relatively restricted
semantic domain of a personal name to that of a broa
domain such as *woman* or *person*. This appears ad hoc
and it really is a minor aspect of the subject of th
nonrestrictive relative clause, for it glosses over
the semantic properties, more precisely the semantic
function, of the subject noun of the nonrestrictive
relative clause, which is to mark or classify the
semantic domain wherein the subject of the main clau
falls. In other words, the relation holding between
the two subjects is not one of identity but one of
semantic classification: if the subject of the embe
ded clause includes within its semantic domain the
main clause subject, then it may properly function a
a (quasi-) relative pronoun of a nonrestrictive clau
in T'in.

To capture this semantic property of the subjec
noun of the embedded sentence, we can select the
second alternative and assume that the deep structur
of a sentence such as (9) is no different from its

face structure, i.e. /phyam/ 'person' as the
ject in [...S]$_{NP}$ is inserted in the deep structural
figuration. Because of lack of identity, the Equi-
Deletion rule needed for restrictive relative
use will not apply. At this level of a grammar,
semantic component may now assign a pronominal-
e functional interpretation to the subject noun of
embedded clause under the condition that this
n is semantically inclusive of the domain of the
n clause subject. If the deep structure meets
ther the condition of identity (for restrictive
ative clauses and adjectives) or of semantic
lusion (for nonrestrictive relative clauses), the
ivation is filtered out as ungrammatical.

Intonation of Relative Clauses in T'in

Intonation is such an elusive phenomenon of lan-
ge because it is so vulnerable to the vagaries of
an emotion. Anger, bliss, and special emphasis
nge the intonation of a sentence first one way
n another. Hardly anyone when he speaks is in that
alized state which brings forth what is considered
ormal, basic intonational pattern. Yet, as lin-
sts, we feel there is such a structure embedded
ewhere in language, and sooner or later a linguist
cribing a language will come up with just such a
ucture. This is what I intend to present for T'in
this section, a normal, non-contrastive intona-
nal pattern which we may consider basic and from
ch all other patterns are derived in some well-
ined way or ways. We may term this the Normal
onational Pattern, or NIP.

NIP in T'in consists of three degrees of stress.
ess-1 is heavy stress and is accompanied by a high

pitch level. Stress-2 is medium stress and carries
mid pitch level. Stress-3 is weak stress and occur:
with a low pitch level. A word having a rising ton-
may occur in any stress position but without the
redundant pitch level *of the particular stress.*

The Normal Intonational Pattern of a T'in sen-
tence can be seen in a sentence of the SVO or NVN
type.

12. ^{2}nam ^{3}mpəl ^{1}ʔiaˇ
       he   kill   chicken
       He killed the chicken.

The initial word of a sentence is Stress-2 and the
final word is Stress-1, or the heavy stress of the
intonational contour. The middle of the contour is
somewhat more complex than the beginning or end.   T:
usual pattern, depending on the length of the sen-
tence, is for words to carry Stress-3 in this envir
ment; but Stress-2 may also occur.

13. ^{2}nam ^{3}mpəl $^2/3$ʔiaˇ ^{3}phɛʔ ^{1}naŋ
       he   kill   chicken   three   animal
       He killed three chickens.

In this sentence, /ʔiaˇ/, occurring in the middle o
the NIP contour, may carry either Stress-3 or Stres
2. There appears to be free variation at this poin
and as a sentence becomes longer, other words may
vary over either stress. While the middle of NIP
contour may vary over assignment of stress, the end
does not. The last word is always heavily stressed
and the next to the last word (in a sentence with
three or more words) is weakly stressed.

This pattern does not change even when a
[ques]tion or Emphatic word is attached on to the end
[of] a sentence.

14. ^{2}nam ^{3}mpəl ^{1}ʔiaĩ ^{1}yòo

    he   kill   chicken ?

    Did he kill the chicken?

15. ^{2}nam ^{1}mpəl ^{3}pə̀ʔ

    he   kill   !

    Yes he killed it!

[In] (14) /yòo/ 'question marker' is marked for low
[pit]ch level even though it carries Stress-1. This
[cou]ld be considered an idiosyncratic feature of this
[wor]d since it is attached to the NIP of the declara-
[tiv]e sentence, and not considered a part of an inter-
[rog]ative intonational pattern. /pə̀ʔ/ 'emphatic
[mar]ker', in (15), carries only Stress-3 and automa-
[tic]ally a low pitch level. Neither /yòo/ nor /pə̀ʔ/
[chan]ge the placement of heavy stress in the NIP of
[the se]ntence.

Let us now turn our attention to the intonation
[of s]entences containing relative clauses and adjec-
[tiv]es. First the environments #N-S-V# and #N-V-N-S#.

16. ^{2}səc ^{3}ʔiibun ^{3}thoon ^{1}suʔ

    meat   Boon   buy   spoiled

    The meat which Mrs. Boon bought is spoiled.

17. ^{2}bakɛɛw ^{3}ʔet $^{2/3}$səc ^{3}ʔiibun ^{1}thoon

    Kaew   take   meat   Boon   buy

    Mr. Kaew took the meat which Mrs. Boon
       bought.

[In t]he first sentence the relative clause /ʔiibun
[thoo]n/ 'Mrs. Boon buy', occurring in the middle of

the intonation, carries Stress-3 on each word.   In
the next sentence the same relative clause occurs at
the end of the sentence and again follows the Normal
Intonational Pattern of a sentence by taking heavy
stress on the final word.

Sentences with adjectives, on the other hand,
are different in intonation.   Consider first this
sentence.

18. ^{3}khyaak ^{2}sək ^{3}poŋ ^{1}ŋuaʔ
      buffalo   big   eat   rice
      The big buffalo ate the rice.

The first word, /khyaak/ 'buffalo', instead of
carrying Stress-2 as the beginning of the intonation
pattern, carries Stress-3.   The adjective following
the noun carries Stress-2.   This is a reversal of NIP
discussed above where the first word carries Stress-2
and the second word Stress-3.   When an adjective
occurs at the end of a sentence, however, it follows
the NIP for the sentence as a whole, carrying Stress
on the final word.

19. ^{2}bakɛɛw ^{3}mpəl ^{3}khyaak ^{1}sək
      Kaew   kill   buffalo   big
      Mr. Kaew killed the big buffalo.

Intonation of sentences with nonrestrictive relative
clauses is different in still another direction.
Here, I have only the preverbal environment #N-S-V#
to illustrate.

20. ^{2}bakɛɛw, ^{3}phyam ^{3}sɛɛm ^{2}mpuaʔ, ^{3}toʔ ^{1}ʔəc
      Kaew   person raise cow   come alrea
      Mr. Kaew, who raises cows, has returned
          home.

re is a break or juncture at the beginning of the
restrictive relative clause, /phyam sɛɛm mpua?/
rson raise cow', and at the end of the clause.
s can be symbolized in a transcription by placing
mas before and after the clause. A close look at
s nonrestrictive relative clause reveals an
eresting fact about such embedded clauses in T'in:
intonational contour of a nonrestrictive relative
use is a reduction of the stress (and pitch level)
the Normal Intonational Pattern of the main clause.
t is, Stress-1 is reduced to Stress-2 for the
evant positions of the embedded clause, and
ess-2 is reduced to Stress-3 for all relevant
itions in the clause. Since there is no weaker
ess than Stress-3, there is no reduction of this
ess.

roposed Grammar of Relative Clauses in T'in

At the outset of this paper I stated that the
l of this discussion was to interrelate both the
tactic and phonological aspects of the relative
use in T'in in an integrated grammatical descrip-
n. The purpose of this section is to achieve this
egration in a systematic way that will account for
l aspects.

How may we construct a grammar that will account
the facts, both syntactic and phonological, that
have observed concerning the relative clause in
n? Actually, we have already assumed a syntactic
ema for describing the relative clause in stating
t a relative clause is an embedded sentence
inated by the node NP. What remains to be
cribed in a grammar are the intonational facts we
e noted.

To do this I reject the formulation that intontional phenomena are described on surface structure
alone.   To adequately describe intonation one must
take into account deep syntactic structure as well.
This, of course, is not a new proposal.   Joan Bresn
(1971) has stated that 'the stress contours of
English sentences are determined in a simple and
regular way by their underlying syntactic structure
In another paper (Bresnan 1972), she stated that
'intonation depends systematically upon underlying
syntactic structures'.   This is essentially the cla
I make for achieving an adequate description of
intonation in T'in, especially as it concerns the
generation of sentences containing relative clauses
and adjectives.

To demonstrate this, let us first assume that
surface structure is the sole determining factor in
describing intonation.   As was noted early in the
discussion of the normal, noncontrastive pattern of
T'in sentence, the first word carries Stress-2 and
the second word Stress-3 if more than two words occ
in a sentence.   A phonological rule assigning
stresses word by word until the end of the sentence
is reached could easily be formalized for a gramma:
of T'in.   However, such a rule would make the wrong
prediction if the first two words happen to be a n
followed by an adjective.   Here the stress pattern
not 23 but 32.   So the rule would have to be revis
to take into account this different stress pattern
but, and this is the crucial point, in order to do
this, it would have to be capable of taking into
account the syntactic information of whether the
first two words are either noun plus adjective or
noun plus verb (or some other part of speech).

ace structures are incapable of doing this. But
tress is assigned on deep structures, correct
ictions on stress patterns involving adjectives
he surface level can be made.

Another demonstration that surface structure
e is inadequate to account for all the facts of
nation in T'in can be seen when we try to
ribe nonrestrictive relative clauses which have
tures, or breaks in the intonational contour,
rring in the course of the sentence. Let us
me that junctures occurring in an intonational
ern are assigned at the surface structure level
phonological rule. What would be the basis for
rule in T'in? When would juncture be assigned
enerate a nonrestrictive relative clause within
ntence and when would no juncture be assigned to
rate a restrictive relative clause? Phonologi-
y there is no basis. But if we consider the
rlying structure of nonrestrictive relative
ses, we can find a natural basis for assigning
e junctures. For placement of the first
ture, we can note that the first two words (the
ect of the main clause and the subject of the
dded clause) are nouns, not identical in form
reference, and the semantic domain of the second
includes that of the first noun. When these
itions are met, a juncture may be placed before
second noun. But this does not explain the
ing of the second juncture. Here we must take
account the fact that the whole internal
cture is an embedded sentence whose subject meets
semantic conditions just mentioned. By taking
consideration these deep syntactic and semantic
s, we can account for juncture assignment around

nonrestrictive relative clauses in T'in.

Still another fact about the intonation of nonrestrictive relative clauses is the observation that it is a replica of the intonation of a main clause differing only in that it has undergone a reduction of stress: Stress-1 is now Stress-2 and Stress-2 is changed to Stress-3. How may we construct a grammar that can explicitly reveal this reduction from the stress pattern of the main claus I propose that this difference in intonation can be explained by the two phonological rules which opera at the deep structure level of a grammar and which take into account syntactic information.

21. First is an NIP Assignment Rule for every occurrence of S in the deep structure. (This is evidently cyclic in nature but the mechanics of this operation need not concern us.)

22. Second is an NIP Lowering Rule, which lowers all Stress-1 and Stress-2 of $[...S]_{NP}$ by one step each.

These two rules will generate the two types of intonational patterns found in sentences containing nonrestrictive relative clauses. Notice also that these two rules are not necessarily limited to accounting for the intonation of nonrestrictive relative clauses. This formulation is intentional, for as previously stated, I believe it will account for the intonational patterns of other sentences which contain examples of embedded $[...S]_{NP}$.

When restrictive relative clauses are consid-ered, we see that their stress patterns can easily

...ssigned by a surface structure phonological rule
...out any recourse to deep syntactic or semantic
...ormation. However, when we allow the NIP Assign-
... Rule and NIP Lowering Rule to operate on the
...erlying [...S]$_{NP}$ of restrictive relative clauses,
...an obtain the same results. That is, our
...osed grammar of relative clauses in T'in has not
... anything at this stage but has achieved a
...ible generalization concerning the intonational
...cture of all embedded sentences dominated by NP
...'in. Figure 2 displays how these two phonological
...s operate on the deep structure before the Equi-
...eletion rule applies.

...aak [?iibun thoon khyaak]$_S$]$_{NP}$ [poŋ ŋua?]$_{PDP}$

	2	3	1		3	1	NIP Assign-ment Rule
		3		2			NIP Lower-ing Rule (for [S]$_{NP}$)
				Ø			Equi-NP Dele-tion Rule
...aak	^{3}?iibun	^{3}thoon	^{3}poŋ	^{1}ŋua?			Surface Struc-ture
...falo	Boon	buy	eat	rice			

...buffalo which Mrs. Boon bought ate the rice.

Figure 2

Figure 2, however, treats only the restrictive
...tive clause in preverbal position. When we
...ider relative clauses at the end of a sentence,
...iscover a possible contradiction to our proposed
...ription, for when the final word of the relative

clause is the final word of the sentence, it must
carry Stress-1 and not Stress-2 which the NIP Lower-
ing Rule would predict for the final word in [...S]₁
It would seem that my whole formulation of describi
the intonation of sentences with relative clauses i
wrong. But we should not overlook the fact that thi
same formulation makes an important and in essence
a correct prediction about the stress pattern of T'
sentences. (Unless the sentence is an interrogative
but as we shall see below this has no bearing on the
essential correctness of the formulation.) When
rules (21-22) have applied to all relevant constuc-
tions in a deep structure, only one occurrence of
Stress-1 will remain. In some cases, as in Figure
it will already be correctly positioned on the fina
word. In other cases it will not be, so a Stress-1
Readjustment Rule is needed to shift Stress-1 to its
correct position in the sentence.

At first blush it would appear that this
readjustment rule is a surface structure phenomenon
and should be ordered after all syntactic rules hav
applied. That this is not true can be seen when th
question marker /yòo/ or the emphatic word /pè?/ is
attached to the end of the sentence. If, for examp
Stress-1 occurs on a word positioned somewhere in t
middle of the derivation of an interrogative or
emphatic sentence, Stress-1 is moved to the last wo
positioned just before the final particle. In othe
words, this readjustment rule must also take into
account the syntactic information of whether a fina
particle occurs or does not occur in a particular
structural description, and therefore must be order
within the syntactic component. Yet it must not be
ordered to occur on the deep structure, for it

eracts in an interesting way with the Equi-NP-
etion rule. The Stress-1 Readjustment Rule must
ly after this transformation rule, otherwise this
ess would be deleted in certain cases, leaving an
rammatical sentence with no Stress-1. Figure 3
1 demonstrate this.

keεw]$_{NP}$[?et [sǝc [?iibun thoon sǝc]$_S$]$_{NP}$]$_{PDP}$

(yòo/pǝ?)

2	3	1	2	3	1	NIP Assign- ment Rule
			3		2	NIP Lowering Rule
					∅	Equi-NP Deletion
		2			1	Stress-1 Read- justment Rule

keεw ^{3}?et ^{2}sǝc ^{3}?iibun ^{1}thoon (yòo/pǝ?) Surface Struc-
ew   take   meat   Boon   buy   ture

Mr. Kaew take the meat which Mrs. Boon bought?
(=yòo)

Mr. Kaew took the meat which Mrs. Boon bought!
(=pǝ̀?)

Figure 3

Stress-1 Readjustment were ordered before Equi-NP-
etion, then Stress-1 in the above derivation would
assigned to the last word, exclusive of the final
ticle, of the deep structure. But this is the
y word to be deleted, in which case Stress-1
ld also be deleted, leaving an ungrammatical sur-
e string. By ordering the Stress-1 Readjustment
e after the Equi-NP-Deletion Rule, this incorrect

result can be avoided.

In Figure 3 /yòo/ and /pè?/ were included to
show that the Stress-1 Readjustment Rule must take
into account their absence or presence in order to
correctly position the heavy stress of a sentence.
However, no stress or pitch level was assigned to
these sentence-final particles even though we know
that /yòo/ must carry Stress-1 and low pitch level
and /pè?/ must carry Stress-3 and low pitch level.
These bits of phonological information were not
included because I am not sure just how they are to
be assigned. Earlier I mentioned that such informa
tion should be assigned in the lexicon on these two
words.   However, other alternatives are possible, e
should they be assigned, not in the lexicon, but on
the deep structure for these words, or should they
be assigned to the syntactic nodes which we might
label Q and Emp? At present, any of these alter-
natives would suffice, and since there is no motiva
tion for chosing one over the others, I will not
pursue the matter further.   In any event, it should
be emphasized that this has no bearing on our discu
sion, for the Stress-1 Readjustment Rule depends on
the syntactic information of sentence-final particl
and not upon the phonological properties of such
particles.

Rules (21-22), the NIP Assignment Rule and the
NIP Lowering Rule, will account for the intonationa
patterns found in sentences containing adjectives,
where in sentence-initial position the pattern is 3
For example, the NIP Assignment Rule will place str
on every element in $[...S]_{NP}$ which underlies the
surface adjective.   Next, NIP Lowering will reduce
all relevant stresses in $[...S]_{NP}$.   This will give

adjective, normally (for our data at least) the
: word of an embedded sentence, a reduction from
:ss-1 to Stress-2. Next, a transformational rule
. delete the subject noun of the embedded sentence,
: yielding an adjective with Stress-2 modifying the
l noun in the surface structure. Now, however, the
l noun at the beginning of the sentence must be
iced in stress by one step, for before adjectives
1ay carry only Stress-3. This can be accomplished
in NP Stress Lowering Rule, which is ordered after
Equi-NP-Deletion Rule for the environment
.dj]$_S$]$_{NP}$. Figure 4 shows the operation of these
:s in the order just described in generating the
>nation to sentence (18) above.

yaak [khyaak sek]$_S$]$_{NP}$ [poŋ ŋua?]$_{PDP}$					
2	2	1		3	1	NIP Assignment Rule
	3	2				NIP Lowering Rule
	∅					Equi-NP-Deletion
3						NP Stress Lowering Rule (for [__[Adj]]$_S$]$_{NP}$)
yaak	^{2}sek	^{3}poŋ	^{1}ŋua?			Surface Structure
ffalo	big	eat	rice			

big buffalo ate the rice.

should be noted that in a two-word sentence, the
:ss pattern of NIP is 21; cf. (15) above.)

Figure 4

se rules and their order of application gives us a
icipled explanation of why the stress pattern of
:ial noun plus adjective is 32 and not 23 as in
:ences with no adjective in this position.

When an adjective occurs in postverbal position
we see that the NP Stress Lowering Rule interacts
with the Stress-1 Readjustment Rule and so must be
ordered last in a grammar of relative clauses in T'i
Figure 5 gives the motivation for this ordering.

$[bak\varepsilon\varepsilon w]_{NP}$ $[mp\vartheta l$ $[khyaak$ $[khyaak$ $s\vartheta k]_S]_{NP}]_{PDP}$

2	3	1	2	1	NIP Assignment Rule
			3	2	NIP Lowering Rule
			$\emptyset$		Equi-NP Deletion
			2	1	Stress-1 Readjustment Rule
			3		NP Lowering Rule (for $[\_[Adj]]_{NP}$)
^{2}bak$\varepsilon\varepsilon$w	^{3}mpəl	^{3}khyaak	^{1}sək		Surface Structure
Kaew	kill	buffalo	big		

Mr. Kaew killed the big buffalo.

Figure 5

The NP Stress Lowering Rule is ordered last in
grammar because at this level it affords the most
general description of $[...S]_{NP}$. If this rule were
ordered before the Stress-1 Readjustment Rule, the
grammar would generate ungrammatical sentences. Fo
example, in Figure 5 above, the first occurrence of
/khyaak/ is correctly assigned Stress-1. But if NP
Lowering is allowed to operate before Stress-1 Read
justment, it would reduce this Stress-1 to Stress-2
because of its occurring before an adjective in thi

ivation, thus yielding a sentence without heavy
ess. One way of correcting this wrong result is
put a restriction on where NP Lowering may operate.
s rule can be restricted to apply for only
verbal positions of noun plus adjective, i.e. for
 sentence-initial environment $\#[\_[NP\ Adj]_S]_{NP}$.
s Stress-1 would be preserved for the first occur-
ce of /khyaak/ above because it occurs in a post-
bal environment. However, this restriction results
a loss of generality and a more complicated grammar,
h the ad hoc addition of the symbol $\#$ (and NP if
 rule is ordered before the Equi-NP-Deletion rule).
 by ordering NP Lowering last, we can allow this
nological rule to operate on just the simplified
tactic environment $[\_[Adj]_S]_{NP}$ for both preverbal
 postverbal positions of the sentence.

Ordering the NP Lowering Rule last causes our
mmar to make another correct prediction about the
ess pattern of T'in sentences containing adjectives.
 the surface structure of Figure 5, /khyaak/ occurs
h Stress-3. In the deep structure, this word is
igned Stress-1. Stress-1 Readjustment reduces
s by one step, but in order to generate weak
ess for this word, the NP Lowering Rule is needed,
 as formulated this rule assigns Stress-3 to nouns
urring before adjectives. The original motivation
 positing NP Lowering was to account for the
tial 32 stress pattern of noun plus adjective.
 there is added justification for this rule
ause it is needed to account for the stress pattern
 sentences containing adjectives in other positions.

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