22.00 Single-base transformation

Though Phrase structure trees provide much more information than IC analysis, yet, new sentences cannot be generated by it. All deep structures can be explained in terms of PS rules. But 'transformations change deep structures into surface structures'. Transformation gives us structural change which neither IC nor Phrase structure grammar does.

The syntactic structure model contains 'Obligatory and optional T-rules'. There are two kinds of optional T-rules - Singulary and generalised.' 'Transformations operating on one terminal string or P-marker are called singulary or single base transformations.' The derived sentences generated by singlebase transformation are derived from just one kernel sentence. Transformation may be meaning changing. After derivation, the structure of the derived sentences may be changed. For example the following sentences of the Barpeta dialect are the results of transformations applied to the kernel sentence.

(1) /rame gid gaise / (kernel sentence)

Ram song has sung

The above sentences are derived from the same underlying string. They are generated by means of optional transformations. The kernel sentence has no optional transformation. These transformation rules involve not the division of the sentence or its parts into smaller parts but the rearrangement of a structure (kernel sentence) in various ways. The negative, question and passive sentences mentioned above are the results of such transformation rules. Transformation may be meaning preserving. The negative and question transformations are meaning changing whereas the passive transformation is meaning preserving.

22.01. Transformational rules (single-base transformation)—

**Negative T-rules**

NP Pred. V-group

=> NP Pred n V-group

NP Pred. n V-stem C
NP pred n v-stem Tns Pm
NP Pred. n v-stem T Asp Pm.

Question T-rules --

NP Pred. V-group

=> NP Pred V-group na/naki
NP Pred. V-stem c na/naki
NP Pred. V-stem Tns Pm na/naki
NP Pred. V-stem T ASP Pm na/naki.

Passive T-rules -

\[ \begin{align*}
P & \quad \text{Pred. V-group} \\
\Rightarrow & \quad N_P & \quad \text{Pred. V-stem Ths Tns Pm} \\
\end{align*} \]

\[ \begin{align*}
P_{Poss} & \quad \text{Pred. V-stem Ths T ASP Pm} \\
\end{align*} \]

22.01 Explanation of terms ---

Neg. \( \rightarrow \) Negative
Q \( \rightarrow \) Question
Pass \( \rightarrow \) Passive
Poss \( \rightarrow \) Possesive
S \( \rightarrow \) Xbar Syntax.

22.02. Single-base transformation in tree diagram :

The following are a few Single-base transformations of the Barpeta dialect shown through derivation and by using tree diagrams.
22.02.1 Negative transformations

\[ \text{mći bhat khaū} \rightarrow \text{mći bhat nakhug} \]

I rice eat \hspace{1cm} I rice donot eat

\[
\begin{array}{c}
\text{NP} \\
\text{Pred.} \\
\text{Vstem} \\
\text{Ins} \\
\text{Pm}
\end{array}
\]

\[
\begin{array}{c}
\text{NP} \\
\text{Pred.} \\
\text{Vstem} \\
\text{T} \\
\text{Pm}
\end{array}
\]
rame bhat khaise => rame bhat khanai
Ram rice has eaten Ram rice eaten has not
Neg. transformation

<table>
<thead>
<tr>
<th>NP</th>
<th>Pred</th>
<th>Vstem</th>
<th>Tns</th>
<th>Pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP</td>
<td>Pred</td>
<td>Vstem</td>
<td>T</td>
<td>ASP Pm</td>
</tr>
<tr>
<td>NP</td>
<td>NP</td>
<td>Vstem</td>
<td>Pres ASP Pm</td>
<td></td>
</tr>
</tbody>
</table>

Neg. trans-
formation \(\Rightarrow\) Prop. N.K N.K kha nai

ram e bhat\(\emptyset\) kha nai
rame bhat kha nai

kha nai
rame bhat kha nai
rame bhat khaisil => rame bhat kha nasil

ram rice ate Ram rice eat did not

using obligatory transformation vstem T Asp=> Vstem Asp T

kha il is => kha is il

rame bhat khaisil

=> rame bhat kha nasil
using obligatory transformation $\Rightarrow_{\text{Prop.N.K}} \text{v-stem perf past pm}$

using negative transformation $\Rightarrow_{\text{Prop.N.K}} \text{v-stem na perf past pm}$

ram e bhat kha na is il $

using morphophonemic rule rame bhat kha nasil

22.02.2. Question transformations:

rame bhat khaise.

$\Rightarrow$ rame bhat khaise na ?

Ram Rice has eaten ?

N P Pred. V-stem Tns pm

N P Pred. V-stem T ASP pm

N P N P V-stem Pres Perf pm

Q. transformation $\Rightarrow_{\text{Prop.N.K}} \text{v-stem perf past pm na}$

rame e bhat kha is e na

rame bhat khaise na
rame bhat khabo

=> rame bhat khabo naki ?

Ram rice will eat

S

NP

Prop.N K

Nom

Pred

V-group

VP

V-Stem

C

T

Tns

Pm

ram e

bhat φ

kha bo

rame bhat khabo naki

NP Pred. V-Stem Tns Pm

NP Pred. V-stem T Pm

NP NP V-stem Fut Pm

Prop.N K

Nom

V-stem Fut Pm

Acc

Q. transformation => Prop.N K

Nom

N K

Acc

V-stem Fut Pm naki

rame bhat khabo naki
22.02.3. Passive transformations

rame bhat khaise
Ram rice has eaten

=> ramor bhat kha hoise

N P Pred. V-stem Tns Pm
N P Pred. V-stem T Asp Pm
N P N P V-stem Pres Perf Pm

PropN K
Nom N K
Acc V-stem Pres Perf Pm

Passive transformations => Prop.N K
Poss N K
Acc. V-stem ho Pres Perf. Pm

ram or bhat kha hoise

using morphophonemic rule => ramor bhat kha hoise

rame bhat khalak
Ram rice had eaten

=> ramor bhat kha hoise
using morpho-
phonemic rule → rame bhat khalak

Passive transformation → ramor bhat kha _RB
NP Pred V-stem Tns Pm
NP Pred V-stem T Asp Pm
NP NP V-stem Past Perf Pm

Prop. N K_Nom N K_Acc V-stem Past Perf Pm

Passive transformation

using morpho-
phonemic rule → ramor bhat kha _RB

rame bhat khaisil
Ram rice ate

=> ramor bhat kha _RB
NP Pred V-stem Tns Pm
NP Pred V-stem T Asp Pm
NP NP V-stem Past Perf Pm

Prop. N K_Nom N K_Acc V-stem Past Perf Pm

Using obligatory
transformation → Prop. N K_Nom N K_Acc V-stem Perf Past Pm

Passive transformation → Prop. N K_Poss N K_Acc V-stem ħa Perf Past Pm

ram or bhat ħa ħa is il ħa

using morpho-
phonemic rule → ramor bhat kha _RB
tai gid gabo
She song will sing

=> tair gid ga fiobo
Passive transformation $\rightarrow$ Pron. K\textsubscript{Poss} N K\textsubscript{Acc} V-stem ꞑ ꞑ Fut ꞑ ꞑ

using morphophonemic rule $\rightarrow$ tair gid ga ꞑ ꞑ bo ꞑ 

23.00 Double-base transformation:

There are however other sentences in the Barpeta dialect which are derived from the structure underlying two source sentences. The transformations that specify these derived sentences must deal with two terminal strings or two P-markers - that of the main sentence and that of the sentence to be embedded. Rules for this type of operation are called double-base or generalised transformation.\(^1\) Double-base transformation provide the recursive power of a grammar. 'By recursivness is meant that certain grammatical constructions can be extended indefinitely by repeated applications of the same rule.'\(^2\)

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In terms of their derivation we get two types of sentences in the Barpeta dialect that are said to be derived simultaneously from two sentences — (1) those derived by embedding one sentence within another and (2) those derived by conjoining two sentences i.e. by adding one sentence to another. Same examples are given below.

<table>
<thead>
<tr>
<th>Deep structure</th>
<th>Surface structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) /manuʃtu bɔdmas/</td>
<td>/bɔdmas manuʃtu ramok</td>
</tr>
<tr>
<td>the man wicked</td>
<td>wicked the man Ram</td>
</tr>
<tr>
<td>/manuʃtuï ramok matsil/</td>
<td>matsil called</td>
</tr>
<tr>
<td>man the Ram called</td>
<td></td>
</tr>
<tr>
<td>(2) /apitu afe/</td>
<td>/thoga apitu afe/</td>
</tr>
<tr>
<td>the man comes</td>
<td>beautiful the girl comes</td>
</tr>
<tr>
<td>/apitu thoga/</td>
<td></td>
</tr>
<tr>
<td>the girl beautiful</td>
<td></td>
</tr>
<tr>
<td>(3) /manuʃtu kala/</td>
<td>/zitu manuʃ ɛte thake</td>
</tr>
<tr>
<td>the man deaf</td>
<td>who man here lives</td>
</tr>
<tr>
<td>/manuʃtu ɛte thake/</td>
<td></td>
</tr>
<tr>
<td>the man here lives</td>
<td>kala deaf</td>
</tr>
</tbody>
</table>
The above 1st, 2nd and 3rd sentences are the examples of embedding transformation whereas 4th and 5th sentences are the examples of conjoining transformation respectively. The rules that specify these sentences are referred to as embedding and conjoining rules. Sentences with embedded elements are complex sentences. It is a sentence within a sentence\(^1\). The main sentence is usually referred to as the matrix sentence\(^2\). The sentence that must be embedded in the matrix sentence is sometimes called the constituent sentence. The noun of the matrix sentence and the noun of the constituent must be the same. This part of the rule blocks embedding of the constituent sentence as a

---

relative clause Unless the two nouns are the same, we must choose a relative pronoun. In this case the transformational rule may be

\[
N_{\text{Mat}} \rightarrow N \{ \text{who} \} \{ \text{which} \}
\]

where

\[
N_{\text{Mat}} = N_{\text{Con}}
\]

Sentences with conjoining elements are compound sentences. Sentences with neither embedded nor conjoining elements are simple sentences. Conjoining can be dealt with in a deep structure analysis by Permitting Stobe expanded to S and S and then by rules that delete one occurrence of identical elements. But we cannot provide a similar analysis for all sentences.

23.01 Transformational (double-base transformation) rules-

Embedding:

\[
\text{NP}_1 \text{ Pred V-group}_1, \text{ NP}_2 \text{ Pred V-group}_2
\]

\[
\text{NP}_1[\text{NP}_2 \text{ Pred V-group}_2] \text{ Pred V-group}_1
\]

\[
\text{NP}_{\text{Mat}} = \text{NP}_{\text{Cons}}
\]

\[
\text{NP} \rightarrow \text{Aj} \ N
\]

\[
\Rightarrow \text{Aj} \ N \text{ Pred V-stem Tns Pm}
\]


Relativisation:
\[ NP_1 \text{ Pred } V\text{-group}_1, NP_2 \text{ Pred } V\text{-group}_2 \]
\[ NP_1[ NP_2 \text{ Pred } V\text{-group}_2 ] \text{ Pred } V\text{-group}_1 \]

\[ NP_{\text{Mat}} = NP_{\text{Cons}} \]

\[ NP \rightarrow \{ \text{Zitu} \} \]
\[ \{ \text{Zikhn} \} \]

\[ \Rightarrow NP_1 \text{ Rel. Pron Pred } V\text{-group}_2 \text{ Pred } V\text{-group}_1 \]

\[ \Rightarrow \text{Rel.Pron } NP_1 \text{ Pred } V\text{-group}_2 \text{ Pred } V\text{-group}_1 \]

Conjoining:

\[ NP_1 \text{ Pred } V\text{-group}_1, NP_2 \text{ Pred } V\text{-group}_2 \]

\[ \Rightarrow NP_1 \text{ Pred } V\text{-group}_1, \text{ Conj } NP_2 \text{ Pred } V\text{-group}_2 \]

\[ \Rightarrow NP_1 \text{ Conj } NP_2 \text{ Pred } V\text{-group}_2 \]

Explanation of terms -

Ds : Deep Structure

SS : Surface Structure

Mat : Matrix sentence.

Cons : Constituent sentence.

Rel.Pron : Relative Pronoun

Conj : Conjunction.

23.02 Double-base transformation in tree diagram:

The following are a few double-base transformation in the Barpeta dialect shown by using tree diagramms.
23.02.1 (a) Embedding

\[ \text{badmas manufiti ramok matsil} \]
\[ \text{wicked the man Ram called} \]

\[ \Rightarrow \text{manufiti badmas. manufiti ramok matsil} \]
\[ \text{the man}^\text{D} \text{the wicked the man}^\text{D} \text{Ram called} \]

\[ NP \rightarrow \{N | e | \} \epsilon \]

using obligatory transformation \( V\text{-Stem T ASP} = V\text{-Stem ASP T Pm} \)

\[ \text{manufiti} [\text{manufiti badmas}] \text{ramok matsil} \]

\[ \text{if } NP_{\text{mat.}} = NP_{\text{con.}} \]

\[ \therefore NP \rightarrow Aj N \]
using obligatory transformation

badmas manuh tu i ram ok mat is il ø

using morphophonemic rule

we get badmas manuhtiui ramok matsil

/thoga apitu ahe/
beautiful the girl comes

=> apitu ahe. apitu thoga
the girl comes the girl beautiful
aptitu[apitu thoga] ahe

if $NP = NP_{\text{cons.}}$

\[ NP \Rightarrow Aj N \]

\[ \Rightarrow Aj N \_K_{\text{Nom.}} V-\text{Stem}, Tns, Pm \]

\[ Aj N \_K_{\text{Nom.}} V-\text{Stem} T Pm \]

\[ Aj N \_K_{\text{Nom.}} V-\text{Stem} \_\text{Pres} Pm \]

thoga apitu \_\_ahe

thoga apitu \_\_ahe
(b) Embedding
(Relativisation)

/zitu  manufu  ēte  thake  kala/
who   man    here    lives    deaf

manufu kala. manufu ēte thake.

=> manufu [manufu ēte thake] kala
the man the man here lives deaf
Relative pronoun substitute => manufu t zu ete thake kala

Relative pronoun front => zitu manufu t ete thake kala

NP Pred NP pred V-group
1 1 2 2

NP [NP Pred V-group] Pred
1 2 2 1

=> NP₁ Relative pronoun pred V-group₂ pred₁

=> Relative pronoun NP Pred V-group pred₁
/zikhfn kapur taibuisa bår xundor/

which cloth she has woven very beautiful

kapurkhfn bår xundor. kapurkhfn tai buise.

⇒ kapurkhfn[taikkhfn kapur buise] bår xundor.

the cloth she a cloth has very beautiful woven

using obligatory transformation N Num Def ⇒ Num Def N

kapur ēk khfn⇒ ēk khfn kapur

using morphophonemic rule ------------------- ēkhfn kapur
kapurkhēn[taī ekhēn kapur V-Stem Tns Pm]būr xundūr
kapurkhēn[taī ekhēn kapur V-Stem T ASP Pm]būr xundūr
kapurkhēn[taī ekhēn kapur V-Stem Pres. Perf. Pm]būr xundūr
kapurkhēn[taī ekhēn kapur buise]būr xundūr

if NP
Mat., = NP cons.

∴ NP → zikhēn

Relative
pronoun
substitute ⇒ kapurkhēn tai zikhēn buise būr xundūr

Relative
pronoun
front ⇒ zikhēn kapurkhēn tai buise būr xundūr.

Classifier
deletion ⇒ zikhēn kapur tai buise būr xundūr.
Conjoining.

/ram arɔ hɔri bazarok zae/
Ram and Hori to the market go

⇒ ram bazarok zae. hɔri bazarok zae
Ram to the market goes Hori to the market goes

$S$

$VP → Pred$ $v$-$group $NP$

$Pred$ $v$-$stem $c$ $S$

$VP$

$NP$

$Prop. N$ $Adv-P$

$Nom$ $V-stem$

$e$

$Tns$ $Pm$

$3rd$ $Pres$

$3rd$ $Pres$

$NP$

$PropN$ $v$-$stem$

$Nom$ $c$

$T$
Conjoining
transformation => ram Adv-P V-Stem Pres Pm ar φori Adv-P V-Stem Pres Pm

Deletion of identical elements => ram ar φori bazarok zae

NP 1 Pred V-Stem 1 NP 2 Pred V-stem 2

=> NP 1 Pred V-Stem conj NP 2 Pred V-Stem 2

=> NP 1 conj NP 2 Pred V-group 2
/xi zabo aro moi ahim
he will go and I shall come

xi zabo aro moi ahim.
mama aofil kintu bapu aofil
my maternal uncle had but Bapu had not come

using negative transformation => bapu na V Stem Past perf.Pm
bapu na a fil il φ

using morphophonemic rule we get → bapu nahil
mama aofil bapu nahil.