AN ANALYSIS OF UNDERLYING FORMS
OF THE ACTIVE TRANSITIVE MARKERS OF SEMERAH

Amas Yasin
UNDERLYING FORMS
OF THE ACTIVE TRANSITIVE MARKERS OF SEMERAH

The active markers of Semerah can be semantically classified into two major prefixes: (1) the prefixes which indicate that an action is done intentionally and (2) the prefix which indicates that an action is done unintentionally by the subject. The first class includes /m-/, /n-/, /h-/, /ŋ-/ and /ba-/. The second class is /ta-/. The prefixes /ba-/ and /ta-/ will not be discussed further in this paper. This paper is trying to analyze the prefixes /m-/, /n-/, /h-/ and /ŋ-/ which are the markers of active transitive actions.

The prefix /m-/ occurs before /b/, /l/, and /r/; before /m/ and in the surface form. only one /m/ is pronounced; and before /p/ and the /p/ is deleted.

E.g. 1. /m-/ before /b/, /l/, and /r/

bayi mbayi
luhauh mluhauh
masq mrasq

2. /m-/ before /m/ and only one /m/ appears in the surface structure

masc? masq?
minum minum
3. /m-/ before /p/ and the /p/ is deleted

raku    maka
rayu    mayu
naki    maka

The prefix /n-/ occurs before /d/ and before /t/
while the /t/ is deleted.

E.g. 1. /n-/ before /d/

aket    ndket
nddeo?    ndndeoo?
ndakep    ndakep

2. /n-/ before /t/ and the /t/ is deleted.

tali    noli
nahi?    nahi?
tula?    nula?

The prefix /n-/ occurs before /c/ and /s/ and the /c/
and /s/ are deleted.

E.g. canca    ñanca
cuku    ñuku
cabub    ñabub

sunti?    ñunti?
sajkap    ñajkap
sajkit    ñajkit

The prefix /n-/ occurs before a vowel and /g/ and be-
fore /k/ and the /k/ is deleted.

e.g. 1. /ŋ-/ before a vowel and /g/

\[ \text{mbi?} \quad \text{ŋmbi?} \]
\[ \text{nhet} \quad \text{ŋhet} \]
\[ \text{nti} \quad \text{ŋnti} \]

2. /n-/ before /k/ and the /k/ is deleted.

\[ \text{kotj} \quad \text{ŋeto} \]
\[ \text{kərjəo} \quad \text{ŋərjəo} \]
\[ \text{kuntap} \quad \text{ŋuntap} \]

All of the prefixes mentioned above occur in a fast and normal speeds of speech. In a slow speed speech, all the prefixes vary in pronunciation depending on how slow the speech is. In a very slow speech the four prefixes are pronounced /mam-/ for /m-/, /man-/ for /n-/ /məŋ- / for /ŋ-/ and /man-1/ for /ŋ-1/.

It seems that the prefixes /m-/, /n-/, /ŋ-1/ and /ŋ-1/ are phonologically conditioned and they are the allomorphs of the active transitive marker. In generative phonology these prefixes are determined to be surface forms because these forms are the ones which emerge on the surface while what is really in a speaker's mind is an underlying form. The changes from the underlying form are conditioned by the nature of the environment where the emerging surface form occurs.

One active transitive marker of Semerah seems to go
through a series of transformation from its underlying form until it arrives at its surface. As mentioned by Hooper that one of the surface form is chosen as an underlying form. Let us consider the occurrence of /m-/ , /n-/ , /ŋ-/ and /ŋ-/ in the given words described previously. In most cases they are conditioned by their environment, for example: the /m-/ occurs before bilabials, the /n-/ occurs before alveolars, the /ŋ-/ before alveopalatals, and the /ŋ-/ before velars. But one case which can be taken into consideration is that the /ŋ-/ also occurs before vowels in which we cannot decide whether it is conditioned by the vowels or not because no articulations could affect the occurrence of the /ŋ-/ before vowels. So the most possible surface form which can represent the underlying form is the /manŋ-/ from which /ŋ-/ is derived.

If the prefix /manŋ-/ is taken as an underlying form there must be a process which brings it to the surface forms /m-/ , /n-/ , /ŋ-/ and /ŋ-. For this process it would be appropriate if the syllabification rules given by Stampe (1973) are applied to this process. Stampe says that syllabification attaches a nonsyllabic to the syllable to its right. The Mi-rules given by Hooper (1976) which states that the rules change phonological features in their environments should also be applied here. The followings are the rules of the transformations from the underlying form /manŋ-/ to the surface forms /m-/ , /n-/ , /ŋ-/ and /ŋ-: 
1. /maŋ-/ becomes /m-/ before /b/

Step 1 through 5 below are the process of the transformation from the underlying form of the active transitive marker /maŋ-/ to the surface form /m-/ before /b/.

Step 1. maŋ + bayi
Step 2. maam + bayi
Step 3. maam + bayi
Step 4. mm + bayi
Step 5. m + bayi

The steps above are found in the changes of speed of a speech from slow to normal and fast.

The process from step 1 to step 2 above can be ruled as the following rule where the /ŋ/ becomes /m/ before /b/.

Rule 1.

\[
\begin{array}{c}
+ \text{nasal} \\
- \text{cont} \\
+ \text{back} \\
+ \text{high}
\end{array} \rightarrow \begin{array}{c}
- \text{cont} \\
+ \text{voice} \\
+ \text{ant} \\
+ \text{bil}
\end{array} \quad /b/ \rightarrow \begin{array}{c}
+ \text{bil} \\
- \text{cont} \\
+ \text{voice}
\end{array}
\]

The change from /a/ to /ə/ in steps 2 and 3 are treated as a natural processes which are obligatory, inviolable phonological rules of the language (Hooper, 1973). Note that this type of process will be repeatedly found in the next analysis and should be referred back to this explanation.

In step 4, the two /m/s which collapse into one /m/ in step 5 can follow the following rule:
Rule 2.

1. cont

\[ \text{bil} \]

\[ \text{nas} \]

\[ 1 \] + 1 \[ \text{#} \]

\[ \text{+ bil} \]

\[ \text{+ nasal} \]

\[ \text{+ voice} \]

It is also possible to refer to Stamp's theory of syllabification to see another possible rule for the case of /maŋ + bayi/ \[ \rightarrow \] /m + bayi/.

Step 1. maŋ + bayi
Step 2. mam + bayi
Step 3. ma + mbayi
Step 4. m + mbayi
Step 5. m + mbayi
Step 6. mbayi

In steps 2 and 3 /mam + bayi/ becomes /ma + mbayi/. The second /m/ in /mam-/ is moved over to the next syllable leaving /ma-/ and giving /mbayi/.

Rule 2 can be used for step 5 and 6 where two /m/s become only one /m/.

2. /maŋ-/ becomes \( \emptyset \) before /m/

This process of the transformation from /maŋ-/ to \( \emptyset \) goes through the steps in the following examples:

Step 1. maŋ + minum
Step 2. ma + minum
Step 3. ma + minum
Step 1. m + minum
Step 2. minum

In step 2 the /ŋ/ is deleted in front of the /m/.

Rule 3.

Refer to the previous description for the change of /a/ to /o/ and to rule 2 for the collapse of two /m/s into one /m/ found in step 5.

3. /man-/ becomes /m-/ before /p/ and the /p/ is deleted.

The following steps are the process from /man-/ to /m-/ before /p/ and the deletion of /p/.

Step 1. man + puto
Step 2. mam + puto
Step 3. m + puto
Step 4. m + puto
Step 5. m + puto
Step 6. m uuto

In step 1 and 2 /ŋ/ in /man-/ becomes /m/ in /mam-/. Rule 4 below is the revision of rule 1 which can be stated in the way that /man-/ becomes /mam-/ before /b/ and /p/ as in the process from step 1 to step 2 above.
Rule 4

\[
\begin{array}{c}
+ \text{naso} \\
- \text{cont} \\
+ \text{back} \\
+ \text{high}
\end{array} \rightarrow 
\begin{array}{c}
- \text{cont} \\
+ \text{voice} \\
+ \text{ant} \\
+ \text{bil}
\end{array} / \rightarrow 
\begin{array}{c}
+ \text{bil} \\
- \text{cont} \\
- \text{voice}
\end{array}
\]

The changes from /mːmː/ to /mːm/ and from /mm/ to /m/ can be referred to the previous analysis.

The deletion of /n/ in /mp/ \rightarrow /m/ in steps 5 and 6 gives rule 5 below.

Rule 5.

\[
\begin{array}{c}
+ \text{bil} \\
- \text{cont} \\
- \text{voice}
\end{array} \rightarrow \emptyset / \rightarrow 
\begin{array}{c}
- \text{cont} \\
+ \text{voice} \\
+ \text{ant} \\
+ \text{bil}
\end{array}
\]

4. /man-/ becomes /n-/ before /d/.

The process of the change from /man-/- to /n-/ is shown in the following steps. The same as the case in point 1, there are two possible sets of steps.

A. Step 1. maŋ + dəket
   Step 2. man + dəket
   Step 3. mən + dəket
   Step 4. m n + dəket
   Step 5. n + dəket
   Step 6. ndəket

B. Step 1. maŋ + dəket
   Step 2. man + dəket
   Step 3. mən + ndəket
   Step 4. m n + ndəket
   Step 5. m + ndəket
   Step 6. ndəket

Steps 1 and 2 of set A gives the following rule.

Rule 6
Rule 6.

\[
\begin{array}{c|c|c}
  + \text{nasal} & + \text{ant} & + \text{cor} \\
  \hline \\
  - \text{cont} & - \text{cont} & - \text{cont} \\
  + \text{back} & + \text{coron} & + \text{coron} \\
  + \text{high} & + \text{voice} & \\
\end{array}
\]

Steps 4 and 5 of set A gives the following rule in which /m/ is deleted before /n/:

Rule 7.

\[
\begin{array}{c|c|c}
  + \text{bil} & - \text{cont} & + \text{nasal} \\
  \hline \\
  + \text{nasal} & + \text{ant} & + \text{coron} \\
\end{array}
\]

Set B gives a bit different process in which syllabification principle is applied (Refer to the previous explanation about syllabification). Other processes in set B are also described previously.

5. /maŋ-/ becomes /n-/ before /t/ and the /t/ is deleted.

Observe the following steps:

Step 1. maŋ + tahi?
Step 2. maŋ + tahi?
Step 3. maŋ + tahi?
Step 4. maŋ + nahi?
Step 5. m + nahi?
Step 6. nahi?

Steps 1 and 2 gives the following rule which is the revision of rule 4. It states that /maŋ-/ becomes /n-/ before /d/ and /t/.
Rule 8.

\[
\begin{array}{c}
+ \text{nasal} \\
- \text{cont} \\
+ \text{back} \\
+ \text{high}
\end{array} \rightarrow \begin{array}{c}
+ \text{ant} \\
- \text{cont} \\
+ \text{coron} \\
- \text{voice}
\end{array}/# - \begin{array}{c}
+ \text{nasal} \\
- \text{cont} \\
+ \text{coron} \\
- \text{voice}
\end{array}
\]

/t/ becomes /n/ in front of a word is deleted if it is preceded by an /m-/. It produces the following rule:

Rule 9.

\[
\begin{array}{c}
+ \text{coron} \\
- \text{cont} \\
- \text{voice}
\end{array} \rightarrow \emptyset /# - \begin{array}{c}
+ \text{nasal} \\
- \text{cont} \\
+ \text{coron}
\end{array}
\]

Rules 5 and 9 can be collapsed into the following rule:

Rule 10.

\[
\begin{array}{c}
+ \text{bil} \\
- \text{cont} \\
- \text{voice}
\end{array} \rightarrow \emptyset /# - \begin{array}{c}
+ \text{nasal} \\
+ \text{bil} \\
+ \text{coron}
\end{array}
\]

6. /maŋ-/ becomes /n/ before /c/ and /s/ and the /c/ and /s/ are deleted.

Observe the following steps:

Step 1. maŋ + cucu? \quad \text{maŋ} + sapu
Step 2. maŋ + cucu? \quad \text{maŋ} + sapu
Step 3. məŋ + cucu? \quad \text{məŋ} + sapu
Step 4. mə + ″cucu? \quad \text{mə} + ″napu
Step 5. \( m + \text{nucu?} \) \( m + \text{napu} \)

Step 6. \( \tilde{n}\text{ucu?} \) \( \tilde{n}\text{apu} \)

Steps 1 and 2 gives the following statement of the rule:

\( /\eta/ \) becomes \( /\tilde{n}/ \) before \( /c/ \) or \( /s/ \).

Rule 11.

The deletion of \( /c/ \) and \( /s/ \) after \( /\tilde{n}/ \) gives the following rule:

Rule 12.

The rule of the deletion of \( /m/ \) in front of \( /\tilde{n}/ \) in steps 5 and 6 can be collapsed into one rule together with rule 7. It states that \( /m/ \) is deleted before \( /\tilde{n}/ \) and \( /i/ \) in rule 13 below.

Rule 13.

7. \( /\text{man}-/ \) becomes \( /\eta-/ \) before \( /\tilde{g}/ \) or a vowel

The process of the transformation \( /\text{man}-/ \) to \( /\eta-/ \) is as follows:
Step 1. man + gahu       man + ambi?
Step 2. mon + gahu       mon + ambi?
Step 3. m:n + gahu       m n + ambi?
Step 4. n + gahu          n + ambi?

The change from /a/ to /n/ in steps 1 and 2 has been described previously. In steps 3 and 4, the deletion of /m/ before /n/ can be collapsed together with rule 13 which states that /m/ is deleted before /n/, /n/, and /n/.

Rule 14.

\[ [+ \text{bil} ] \rightarrow \emptyset \]

8. /man-/ before /k/ and the /k/ is deleted.

Observe the following steps:

Step 1. man + katc
Step 2. mon + katc
Step 3. m:n + katc
Step 4. m + katc
Step 5. katc

Refer to the previous discussion about the reduction of /a/ to /o/ and the deletion of /n/ between consonants in steps 1, 2, 3, and 4. The deletion process of /k/ after /n/ in steps 2 and 3 can be collapsed into one rule together with rule 10. It states that /k/, /t/, /p/, /c/, and /s/ are deleted after /m/, /n/, /n/, and /n/.
Rule 15.

\[\begin{array}{c}
\text{cont} \\
- \text{voice} \\
+ \text{str} \\
\rightarrow \emptyset \\
\# + \text{nasal} \\
- \text{cont}
\end{array}\]

9. \(/\text{man}-\)/ becomes \(/m-/\) before \(/l/\) and \(/r/\).

Observe the following steps of the process of the transformation from \(/\text{man}-\)/ to \(/m-/\) before \(/l/\) and \(/r/\).

Step 1. man + luhaul
Step 2. ma + luhaul
Step 3. mə + luhaul
Step 4. m + luhaul

In steps 1 and 2 \(/n/\) is deleted before \(/l/\) and \(/r/\)
and it gives the following rule:

Rule 16.

\[\begin{array}{c}
+ \text{nasal} \\
- \text{continuant} \\
+ \text{back} \\
+ \text{high}
\rightarrow \emptyset \\
\# + \text{vocalic}
\end{array}\]

The reduction from \(/a/\) to \(/ɛ/\) should be referred to the previous explanation.

Different from the other processes, the \(/m/\) retained in step 4 of this process is not the result of the environmental condition, but it is the last element left after some deletions from \(/\text{man}-\)/ to \(/\text{ma}-\)/ to \(/\text{m}-\)/ and to \(/m-/\).

Through the overall analysis it can be concluded that the core rules of the transformations from the un-
deriving form /man-/ to various surface forms are rules a1
2, 3, 8, 10, 14, 15, and 16.

References
