A TRANSFORMATIONAL GENERATIVE APPROACH TO

MANDARIN EMBEDDED SENTENCES AND SUBORDINATED SENTENCES

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CONTENTS

# INTRODUCTION

## 1.1. Statement of Problem

This paper attempts to analyze Mandarin sentence embedding and sentence subordination by the transformational generative method. Twelve rules are formulated which will transform the deep structure of each embedded sentence or subordinated sentence to the surface structure.

Of the twelve rules, five of them are particularly interesting. They are: sentence attachment, adjectivization transformation, feature transformation, feature movement transformation, and contradictory sentence feature transformation.

Sentence attachment is the most powerful rule for sentence embedding. Simply by attachment, without any conjunction or pause, an independent sentence will be embedded at the subject NP position or object NP position of the matrix sentence.

The adjectivization transformation involves 1) adding an adjectivizer, which is a possessive particle added to the object of the embedded sentence, and 2) moving the subject-noun or the object-noun of the matrix sentence onto the right of the possessive particle [see(25), (27)].

The feature transformation introduces various kinds of features, such as the cause-result feature; the subordination particle feature; the adverb particle feature; and the contradictory sentence feature. These features are necessary to the sentence subordination in order to enable the particle movement transformation to take place.

Of the feature-movement transformations, contradictory sentence adding is one of the variations. Its result is two pairs of sentences, one pair positive and one negative.

The above five points account for every important step during the transformational process from the deep structure to the surface structure. Specifically, the first two points deal with sentence embedding. The last three points deal with sentence subordination.

## 1.2. Review of Literature

Owing to the fact that no one has published a detailed analysis of Mandarin sentence embedding and sentence subordination using a transformational generative approach, to my knowledge this paper is the first attempt in these two areas. The selected bibliography provides only some basic ideas which are developed into a detailed discussion in this paper. For basic analysis on Mandarin simple sentence types I refer the reader to the work of Ruth Lee (1970); on aspect and coordination to the work of Christine Wu (1971). This paper attempts

2

to build on the work of these two colleagues.

_Mandarin Primer_ (1957) by Yuen-ren Chao provides many sample sentences illustrating sentence embedding and subordination. In his analysis, evidently he recognizes the differences between deep structure and surface structure, but the results of his analysis were presented in a descriptive way mainly on the surface structure base, and in an unformalized manner.

James Tai in his dissertation _Coordination Reduction_ (1969) centered his analysis of Mandarin and other languages on conjoined sentences instead of embedded sentences. He did mention the relative clause formation used by Ross and others, but did not specifically discuss Mandarin sentence embedding which this analysis will account for.

The methodology used in this paper mainly follows Jacobs and Rosenbaum's _English Transformational Grammar_ (1968). Besides it, this paper owes a very basic transformational approach to Noam Chomsky's _Syntactic Structures_ (1957); _Aspects of the Theory of Syntax_ (1965); and _Topics in The Theory of Generative Grammar_ (1966). Other references such as _The Structure of Language_ (1964) by Fodor/Katz _The Structural Approach to Chinese Grammar and Vocabulary_ (1964) by Gustav Herdan; and _Writing Transformational Grammars_ (1966) by Andreas Koutsoudas contribute to this paper many techniques of formalizing the transfor-

3

mational rules.

## 1 3. Justification of Study

Although transformational generative grammar has been one of the newest linguistic approaches to language in the past few years, there are still several areas in Mandarin left unanalysed, such as Mandarin Sentence embedding and sentence subordination. This paper is an initial attempt at working out a set of transformational rules. These rules are applied to sample sentences through the demonstration of tree diagrams. The tree diagrams indicate every step of change from deep structure to surface structure. This approach clarifies many complicated problems in Mandarin embedded sentences and subordinated sentences. Hopefully, readers of this paper will be able to see the complete picture of the syntax structure of these two areas.

## 1.4. Procedure of Study

There are four chapters presented in this paper: 1) Introduction; 2) Embedded Sentences in Mandarin; 3) Subordinated Sentences in Mandarin; and 4) Summary and Conclusion.

4

# II

## EMBEDDED SENTENCES IN MANDARIN

## 2.0. Introduction

In Mandarin, there is no pause or pause particle connecting the embedded sentence to the matrix sentence, nor is there a conjunction included in the surface structure. The sentence embedding is formed by the direct attachment transformation and the equi-NP deletion transformation. The matrix sentence is not complete in meaning until the embedded sentence is included.

This chapter will demonstrate all kinds of sentence embedding with the explanations immediately preceding or following them. The abbreviation MS is used for 'matrix sentence' and ES for 'embedded sentence'.

## 2.1. Embedded Sentence in an NP Position

There is a group of transitive verbs in Mandarin, such as šyian 'think'; čyitʌ 'remember'; wuančyi 'forget'; šyiwaŋ 'expect'; tInčyiɛn 'heard'; čyiatIn 'suppose'; tayIn 'promise'; xɘaypa 'fear'; and kawsu 'tell' which cause sentence embedding through direct attachment of the ES to the MS. These transitive verbs occur infrequently without embedded sentences in the object NP or more frequently with embedded object sentences. In a similar manner, the copula 'to be' and the verbs 'to have' and 'to do' occur frequently with an embedded sentence as subject.

5

## 2.1.1. Embedded Sentence in the Object NP Position

The MS verb of the fore-mentioned type is followed by a sentence embedded into the noun phrase position functioning as object consituent of the verb phrase. The embedded sentence keeps the original form of the independent sentence, with no deletions or additions. A labeled bracketing of this type of sentence is as follows:

wuʌ    syiwuaŋ    nI    lay

I    HOPE    YOU    COME

NP    VP    ES    ES    VP

MS    MS
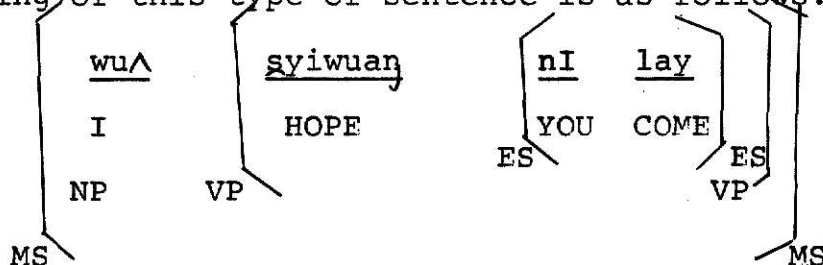
The ES is embedded simply by direct attachment to the surface structure. The direct attachment will be found very powerful later in this study.


2.1.1.A. For sentence embedding, there are two major transformations which convert the deep structure to the surface structure. The first is the attachment transformation which is obligatory; the second is the equi-NP deletion which is optional and occurs only when the subject NP of the ES refers to the same person of either the subject NP or the indirect object NP of the MS. In the deep structure, it's application is triggered by the feature [+sentence embedding] . The attachment transformation will be demonstrated first:

6

(1)

```
                              MS
        <+sentence embedding>NP        VP
                      |            V        NP
                      N          syiwuaŋ  <+something>
                      |            |
                     wuʌ          HOPE      #S#
                      |                    /\
                      I                   /__\
```
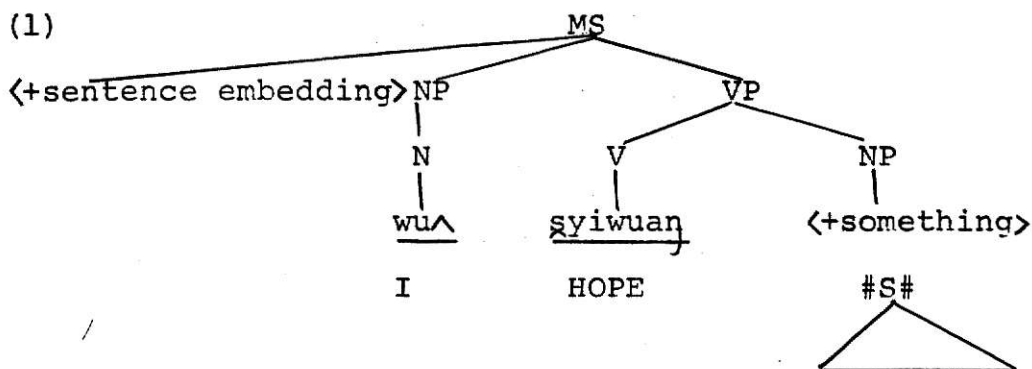
(1) will be converted to (2) by the attachment transforma-
tion which transforms the NP pro-form <+something> to a di-
rectly attached sentence in the surface structure:

(2)

```
                              MS
                 NP                      VP
                 |                 V          ES
                 N              syiwuaŋ    nI      lay
                 |                |
                wuʌ             HOPE     YOU     COME
                 |
                 I
```
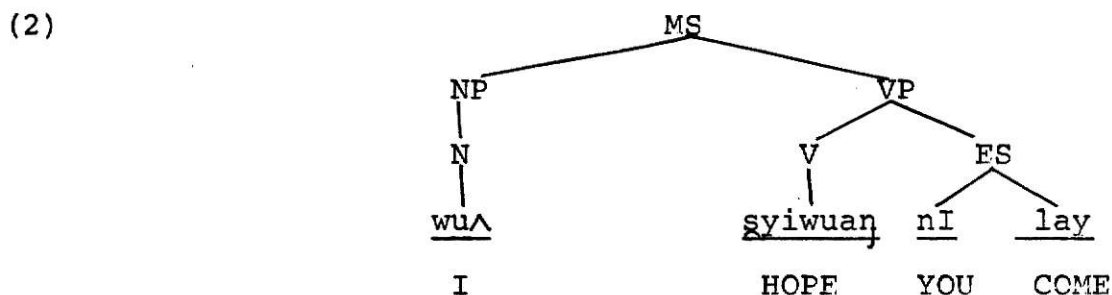
When there are two object NP's included in the MS, the attach-
ment transformation will enable the attachment of the direct
object ES to the right of the indirect object NP which follows
the main verb of the MS.  The direct object NP is most frequent-
ly inanimate, (although it may also be animate with some verbs),
whereas the indirect object is always animate:

(3)

```
                              MS
   <+sentence embedding>NP          VP
                   N        V      NP      NP
                   |                     <+something>
                  wuʌ     tayin   nI    <-animate>
                   |                        |
                   I     PROMISE  YOU      #S#
```

7
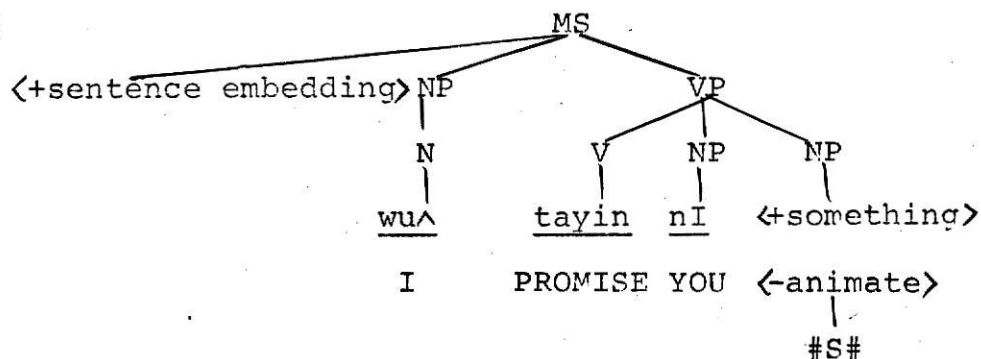
(3) can be converted to (4) by the attachment transformation:

(4)

```
                            MS
                 _____/ _____
                NP                        VP
                |                    _____|_____
                N                   V      NP      NP
                |                   |      |       |
               wuʌ               tayin    ta      ES
                                                  /\
                I               PROMISE HIM      /  \
                                                /____\
                                              wuʌ  čyü
                                               I    GO
```
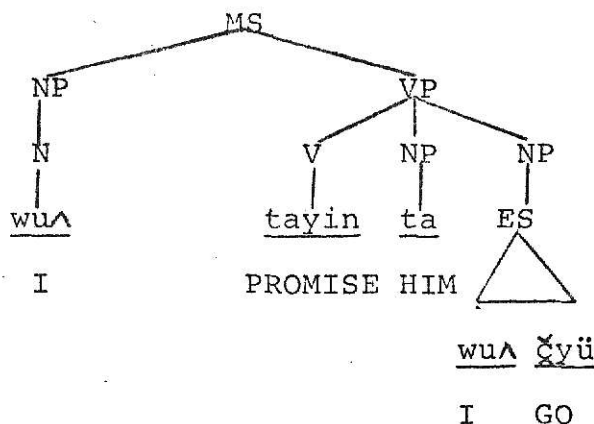
After the direct attachment transformation, the equi-NP deletion transformation is the second major transformation for sentence embedding.

Three-place verbs (in terms of Lyons 1968) have a subject NP, direct object NP and an obligatory indirect object NP which may be optionally deleted in the surface structure, in relation to sentence embedding in one or both of these predicate NP positions. There are certain constraints on the surface structure occurrences, brought about through application or non-application of the equi-NP deletion transformation. Equi-NP deletion may apply either to indirect object NP of the MS to the subject NP of the ES under particular conditions described as follows.

The occurrence of the indirect object NP of the MS as either optional or obligatory in the surface structure depends on the identification of the subject NP's of the ES and

8

the MS.   A) If the subject NP's of the MS and the ES refer
to the same person, the indirect object NP of the ES can
be deleted, see(5); B) If the subject NP of ES refers to a
different person from the subject NP of MS, but is the same
person of the indirect object NP of MS, the latter can also
be deleted, see(7); C) If the three-place NP's refer to
three different persons, none of them can be deleted, see
(8). Although the indirect object NP is optional in the sur-
face structure, it is obligatory in the deep structure; and
has the feature ⟨+animate⟩ .

In the following examples, (5), (7) and (8) are trans-
formed from (4) by the equi-NP deletion transformation, and
(6) is transformed from (5) by the same transformation:

(5)

```
                          MS
              NP                      VP
               |              V      NP      NP
               N                             |
              wuʌ          tayin ⟨+II⟩      ES
                           ⟨+III⟩
               I          PROMISE   Ø    wuʌ    čyü
                                          I      GO
```
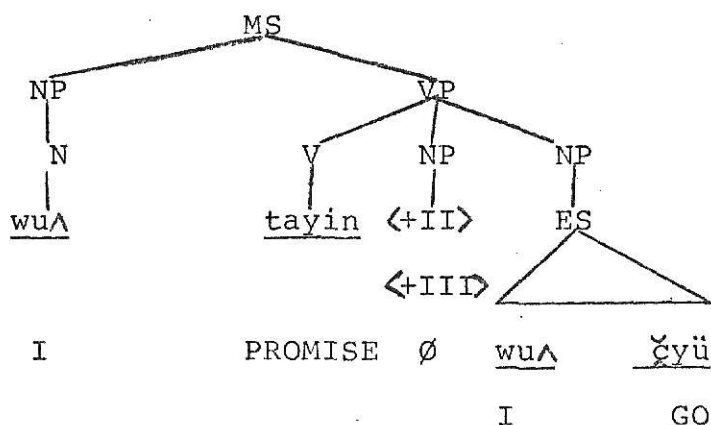
In Example (5) where the subject NP's of MS and ES refer
to the same person, then the subject NP of ES can also be de-
leted, optionally as in (6):

9

(6)

```
                              MS
          ┌────────────────────┴──────────┐
         NP                               VP
          │                      ┌─────────┼──────────┐
          N                      V        NP         NP
          │                      │                    │
        wuʌ                  tayin ⟨+II⟩              ES
                                 ⟨+III⟩            ╱     ╲
                                              ⟨+I⟩        V
                                                        čyü

          I                    PROMISE  Ø   Ø          GO
```

(7)

```
                              MS
          ┌────────────────────┴──────────┐
         NP                               VP
          │                      ┌─────────┼──────────┐
          N                      V        NP         NP
          │                      │         │          │
        wuʌ                  tayin     ⟨+II⟩          ES
                                                    ╱    ╲
                                                  nɨ      cyu

          I                  PROMISE          Ø   YOU    GO
```
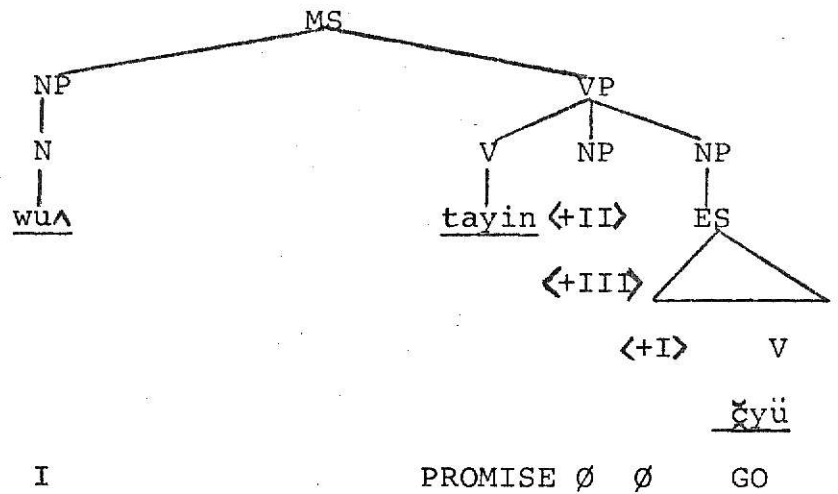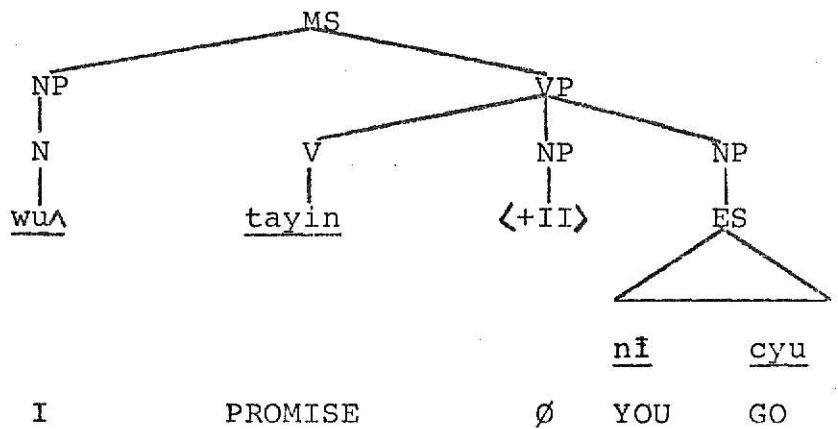
Even if the subject NP of the ES is the same as the indi-
rect object NP of MS, it cannot be deleted if it is different
from the subject NP of MS.  Semantically, the surface structure
of (6) has two meanings, either 'I promise you I'll go.' or '
I promise that you'll go.'  The only way to tell the difference
through surface structure is by context, which information
would have to be built into the deep structure.  If (6) were
preceded by a question "Do you promise that you'll go?'(6)

would mean the former; if it were preceded by 'Do you promise that I'll go?', it would mean the latter.

This difficulty is caused by having no pause nor conjunction in between the MS and the ES, a characteristic mentioned in the opening paragraph of this chapter.

In Example (8) following, none of the three NP's can be deleted:

(8)

```
                        MS
              ┌──────────┴──────────┐
             NP                     VP
              │            ┌────────┼────────┐
              N            V       NP        NP
              │            │    ⟨+III⟩       │
              │            │                 ES
              │            │               ╱────╲
              │            │              ╱      ╲
              │            │             ╱────────╲
            wu∧         tayin         ta    nI    čyü
              I         PROMISE       HIM   YOU    GO
```
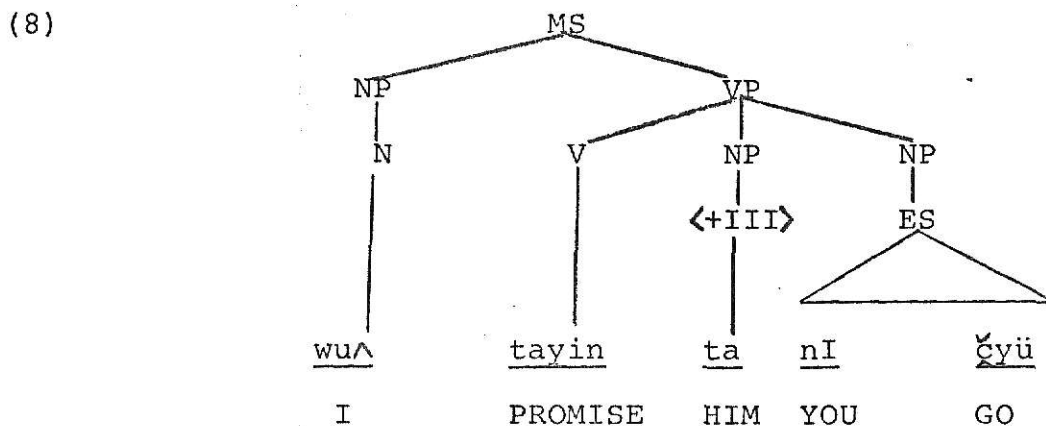
## 2.1.1.B. Negative Accusative Embedding

The negative sentence embedding requires a negative transformation to transfer the negative particle either to the left of the verb of the MS or to the left of the verb of the ES in the surface structure. The second type occurs more frequently.

(9) the deep structure:

```
                              MS
           ⟨+neg.⟩ NP ────────┴──────────┐
                   │                     VP
                   N            ┌────────┴────────┐
                   │            V                 ES
                   │            │               ╱────╲
                   │            │              ╱      ╲
                   │            │             ╱────────╲
                 wu∧         šyiwuaŋ        nI        lay
                   I          HOPE          YOU       COME
```

11
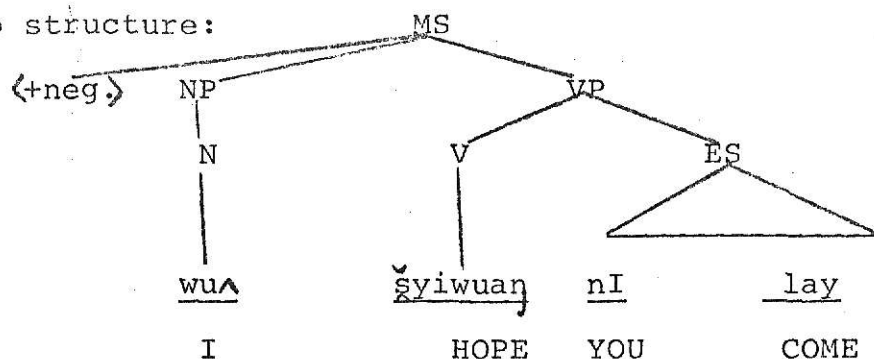
(9) will be converted to (10) or (11) through the negative
transformation.

(10) infrequently used:

```
                              MS
                 ┌────────────┴──────────┐
                NP                       VP
                 │              ┌─────────┼──────────┐
                 N             NEG        V          ES
                 │              │         │        ╱    ╲
                Wuʌ            pu      šyiwuaŋ   ╱────────╲
                                                  nI   lay

                 I             NOT      HOPE     YOU COME
```

(11) more frequently used:

```
                              MS
                 ┌────────────┴──────────┐
                NP                       VP
                 │              ┌─────────┴──────────┐
                 N              V                    ES
                 │              │                  ╱    ╲
                Wuʌ          šyiwuaŋ            ╱────────╲
                                                nI  NEG  lay

                 I             HOPE            YOU NOT COME
```
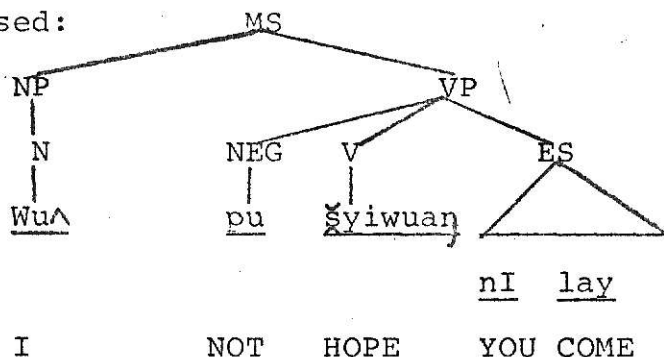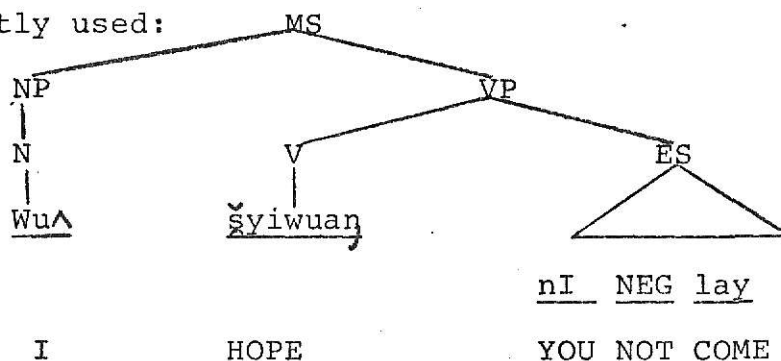
(10) and (11) are different in the surface structure, yet
they are the same semantically in the deep structure.


2.1.2. Embedding of the Subject Sentence

In the deep structure there may be a sentence embedded
in the subject NP position of the MS which may be shown in a
labeled bracketing as follows:

```
                    [nI      tsaočyi]              xaow
              ES      YOU     GET UP  ES          IS GOOD
         NP                           EARLY    NP  VP        VP
    MS                                                         MS
```

12
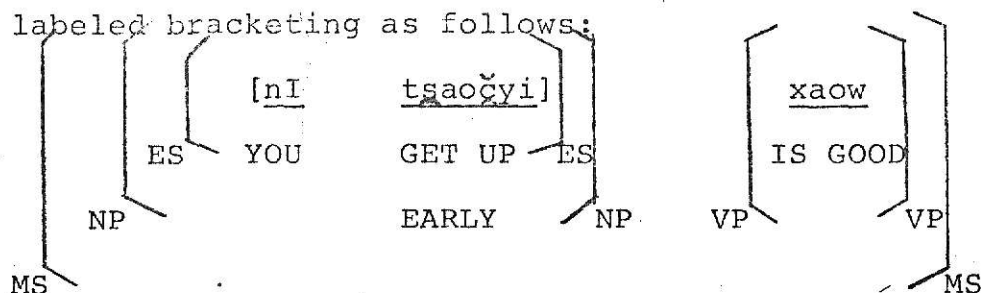
If the deep structure of the MS has a VP with a copula followed by an adjective, the copula is always deleted in the surface structure.

## 2.1.2. A Positive Nominative ES

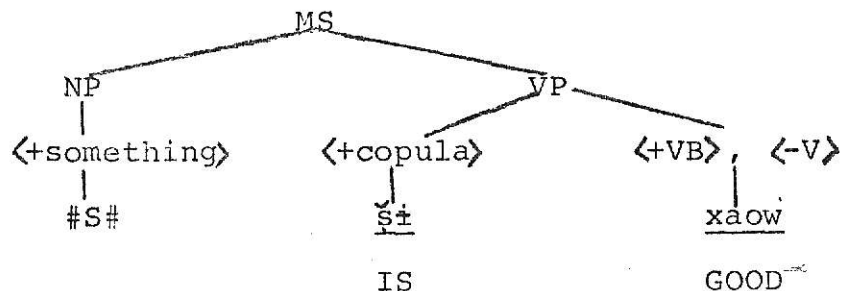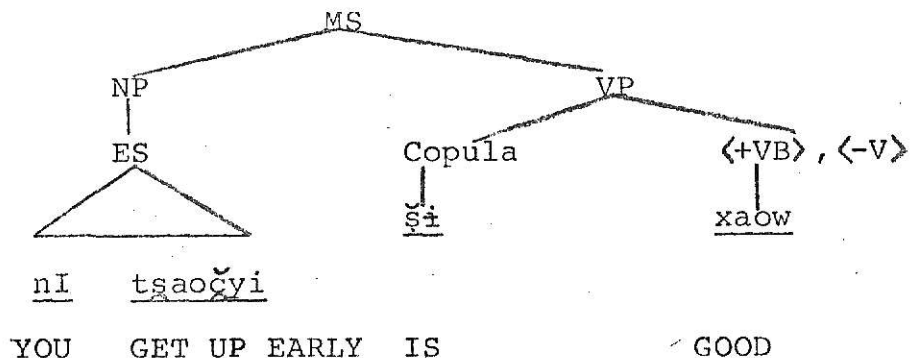The ES is attached to the subject NP where previously the pro-form occurred in the deep structure. It is usually transformed to the surface structure by the complimentiser transformation. But in Mandarin, the direct attachment transformation substitutes for the complimentiser transformation, thus enabling the ES to be directly attached to the subject NP of the MS.

(12) the deep structure:

```
                        MS
           NP                          VP
        ⟨+something⟩        ⟨+copula⟩       ⟨+VB⟩ , ⟨-V⟩
            |                  |                |
           #S#                 s̆ɨ             xăow
                               IS              GOOD
```

(12) can be converted to (13) through the attachment transformation:

```
                      MS
          NP                       VP
          |              Copula        ⟨+VB⟩ , ⟨-V⟩
          ES               |               |
         / \              s̆ɨ             xăow
        /   \
      nI   tsaoçyi
     YOU  GET UP EARLY    IS             GOOD
```

13

(13) will be converted o (14) through the copula deletion transformation:

(14)

```
                        MS
              NP                    VP
              |
              ES              ⟨+VB⟩,⟨-V⟩

         nI    tsaočyi              xaow

        YOU    GET UP EARLY         GOOD
```
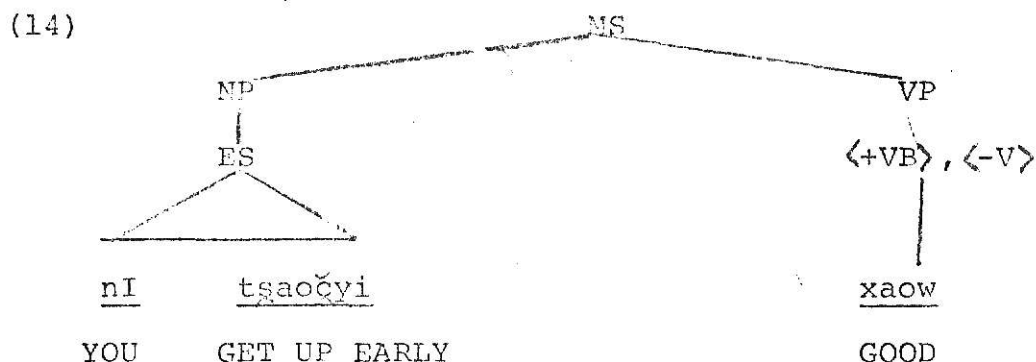
Yet, the copula deletion transformation occurs only when the copula of MS is followed by an adjective.  If it is followed by a noun phrase, copula deletion does not take place. See (15).

*: not deleted

```
                    MS
          NP                  VP
          |
          ES          Copula        NP

      nI     lay        š±      wuʌtʌ    kwuanžun

     YOU    COME        IS *     MY      HONOR
```
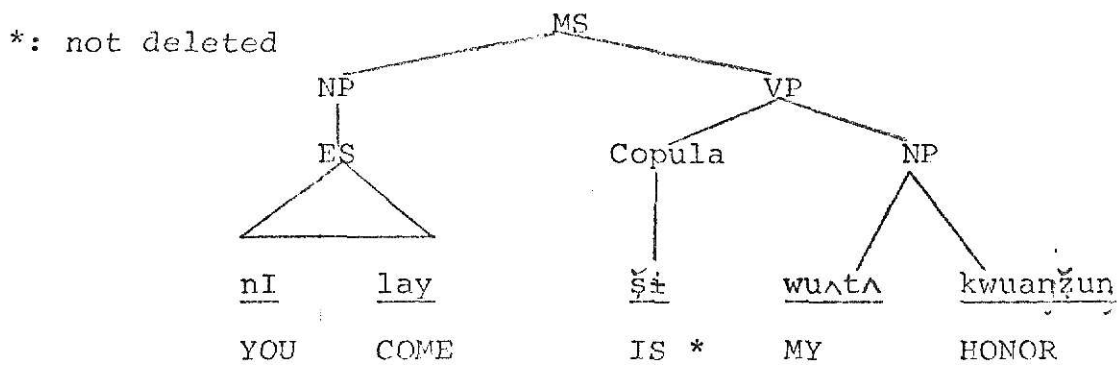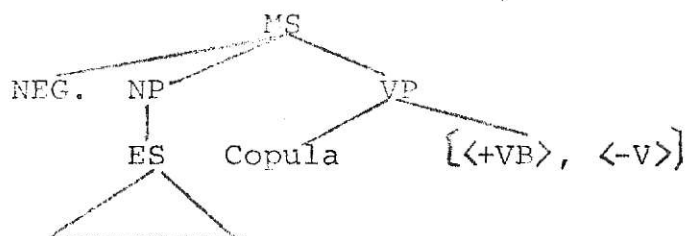
2.1.2.B. Negative Nominative Embedding

This section will continue the 2.1.2. section with the same deep structure pattern; further, it will transform the 2.1.2. section to the area of negation in the surface structure.

Since the negative transformation has been described in section 2.1.1., for this section, only the examples will be demonstrated.  See (16), (17); and (18), (19).

14

Example 1: (16) & (17)

(16)
```
                            MS
          ┌──────────┴──────┐
     NEG.  NP                VP
           │           ┌──────┴──────┐
           ES        Copula     [⟨+VB⟩, ⟨-V⟩]
        ╱─────╲
     nI tsaočyi    ∅          xaow
     YOU GET UP EARLY         GOOD
```

(16) will be converted by the negative transformation to
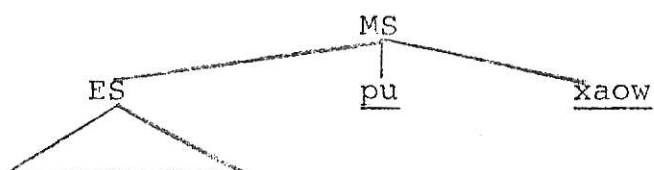
(17)
```
                      MS
        ┌─────────────┼──────────┐
       ES             pu        xaow
    ╱──────╲
  nI    tsaočyi
  YOU    GET UP EARLY    NOT      GOOD
```

Example 2: (18) & (19)

(18)
```
                            MS
          ┌──────────┴──────────────┐
     NEG.  NP                        VP
           │              ┌───────────┴──────────┐
           ES          Copula            [⟨+VB⟩, ⟨-V⟩]
        ╱─────╲
     nI   lay      ši              wuᴧtᴧ kwuanžuɳ
     YOU  COME     IS              MY   HONOR
```

(18) will be converted to (19) by the negative transformation:

15

(19)



```
                         MS
            ES          pu     sɨ     wuʌtʌ  kwuanžuŋ
        ╱───────╲
      nI      lay
      YOU    COME        NOT    IS      MY    HONOR
```
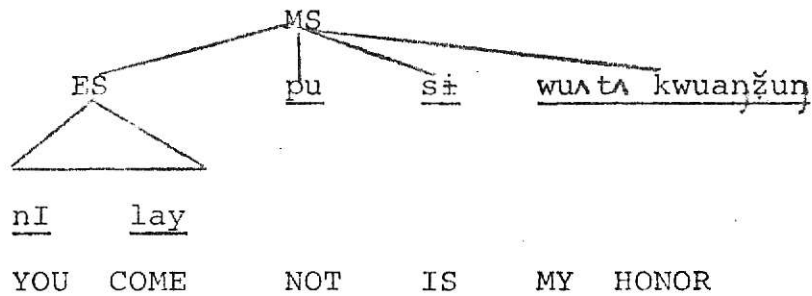
## 2.2. Embedded Sentence in Adjective Position

## 2.2.1. Introduction

An adjective sentence is a sentence embedded in an adjective position within a matrix sentence. It modifies either the subject noun or the object noun. This section will present two parts, adjective sentence modifying subject noun; and adjective sentence modifying object noun.

## 2.2.2. Adjective Sentence Modifying Subject Noun

(20) The deep structure:



```
                              MS
            NP                              VP
       NP        žʌn      ⎰#S#     ⎱Copula   {⟨+VB⟩,⟨-V⟩}
                          ⎱⟨+Adjective⟩ sɨ
    neykʌ      žʌn                                wuʌ  kʌkʌ
    THAT      PERSON                     IS       MY   BROTHER
```
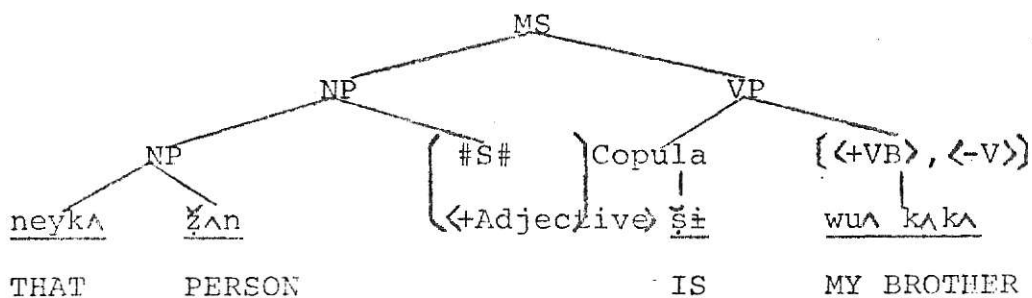
(20) can be converted to (21) through adjective #S# attachment transformation:

16

(21)

MS
NP — VP

neykʌ žʌn   ES        copula   ⟨+VB⟩, ⟨-V⟩
THAT PERSON

neyʟʌ  zʌn  sun  syin      šɨ        wuʌ kʌkʌ
THAT  PERSON SENDS LETTER   IS        MY BROTHER
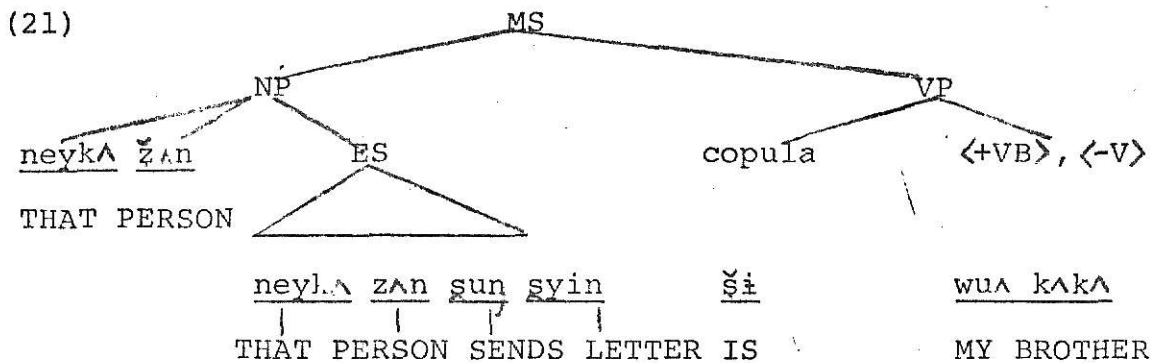
(21) can be converted to (22) through the equi-NP deletion

transformation:

(22)

MS
NP — VP

neykʌ  žʌn   ES        šɨ        wuʌ kʌkʌ

THAT  PERSON ∅  ∅  sun  syin      IS        MY BROTHER
              SENDS LETTER
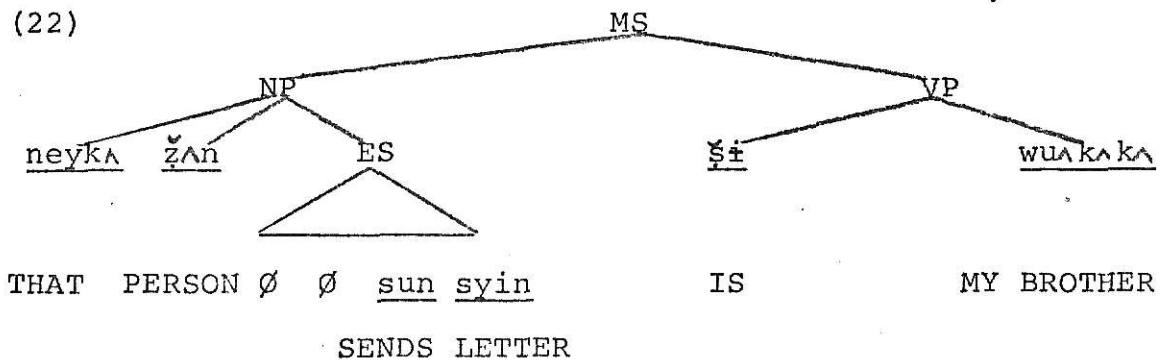

(22) can be converted to (23) through adjectivization trans-

formation which involves two stages, a) adjectivizer adding;

b) subject-noun movement.

(23)

MS
NP — VP

neykʌ   šun syin tʌ zʌn      sɨ        wuʌ kʌkʌ

THAT    SEND LETTER's person is        MY BROTHER

The surface structure is transformed from the deep structure

through three transformations, 1)adjective sentence attach-

ment transformation; 2) equi-NP deletion transformation;
3) adjectivization transformation which includes two stages,
a) adjectivizer adding; and b) subject-noun movement.  a)and
b) occur simultaneously.


## 2.2.3. Adjective Sentence Modifying Object Noun

(24) the deep structure:

```
                              MS
             NP                            VP
              |                    V               NP
              N                    |           NP        #S#
             wuʌ                  ayɪ     determiner  N   ⟨+adjective⟩
                                            |        |
                                          neyčɨ     kow

              I               LOVE      THAT     DOG     #S#
```
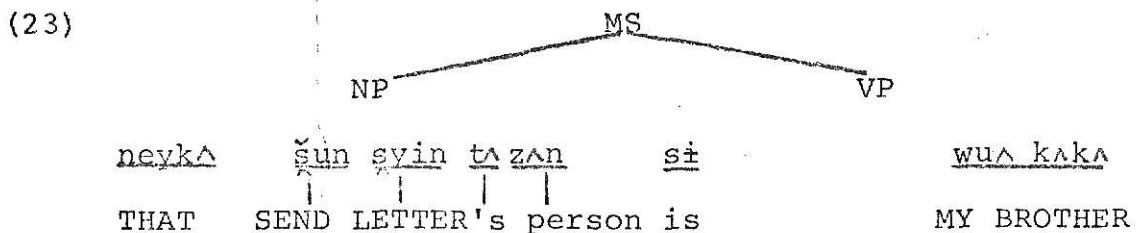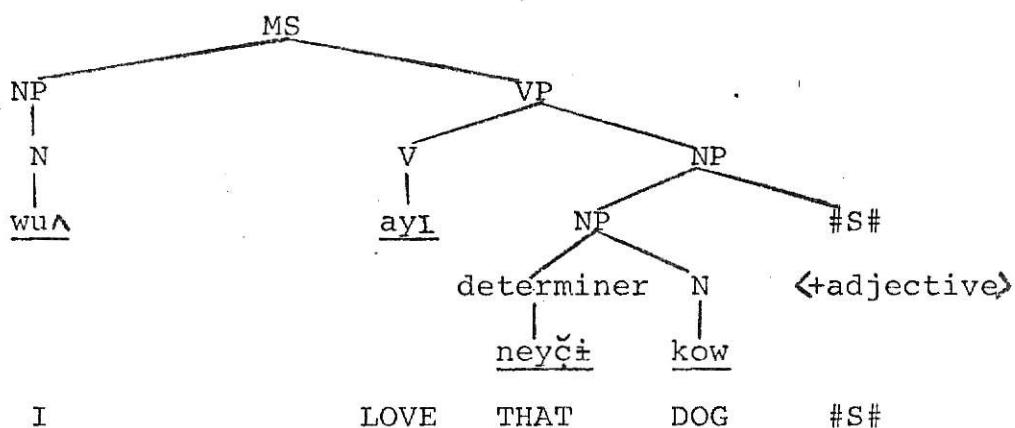
(24) can be converted to (25) through adjective #S# attachment
transformation:

(25)
```
                         MS
          NP                        VP
           |              V.   Deter-    N      ES
           N              |    miner    kow   neyčɨ kow ⟨yɪao⟩
          wuʌ           ayɪ   neyčɨ
           
           I            LOVE   THAT    DOG    THAT DOG BARKS
```
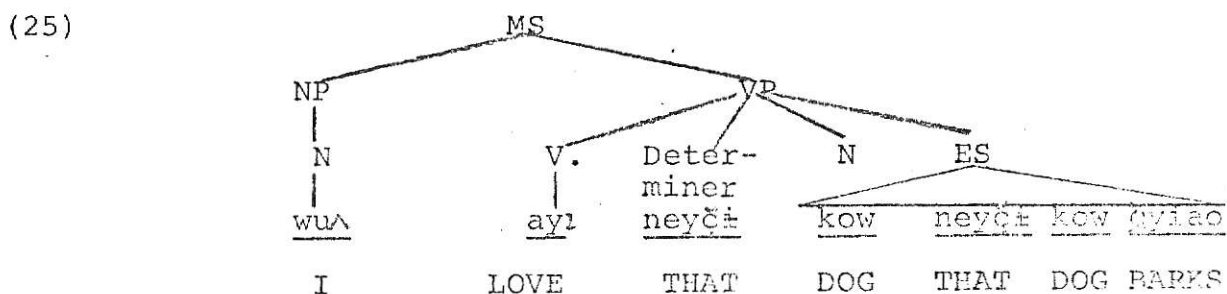
(25) can be transformaed to (26) through the equi-NP deletion
transforamtion:

(26)

```
                          MS
             _____|_____
            NP                               VP
            |            _____|_____
            N           V  Determiner           N        ES
            |           |      |                 |       /|\
           Wu∧         ayɪ   neyčɨ              kow    Ø  Ø  čyiao

            I          LOVE  THAT               DOG           BARKS
```
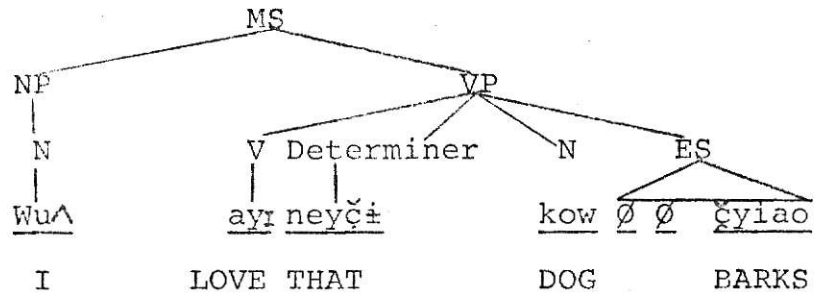
(26) can be transformed to (27) through the adjectivization
transformation which involves two stages, a) adjectivizer
adding; and b) object-noun movement.

(27)

```
                          MS
             _____|_____
            NP                               VP
            |        _____|_____
            N       V   Determiner  Adjective              N
            |       |      |            |                   |
           Wu∧     ayɪ   neyčɨ        čyiao  t∧            kow

            I      LOVE   THAT        BARK   'S            DOG
                                      (barking)
```

19
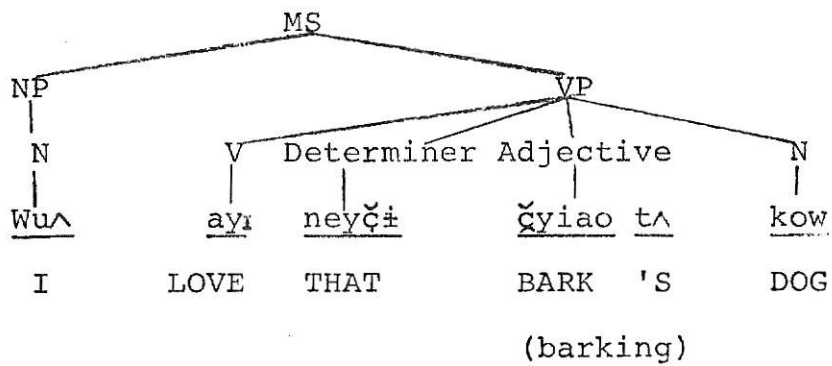
# SUBORDINATED SENTENCES IN MANDARIN

In Mandarin, sentence subordination is of one main type cause-result, with two sub-types; namely, a) 'therefore-sentence' and b) 'if-sentence'. There is one optional variation, a positive-negative contrastive statement sentence.

General cause-result subordination involves two simple sentences in the deep structure with this type of meaning relationship and an added feature ⟨+sentence subordination⟩. When sentence subordination occurs, the cause-sentence is subordinated to the result-sentence through 1) obligatory cause-result feature transformation; 2) obligatory subordination particle feature transformation and its movement transformation; 3) optional adverb particle feature transformation and its movement transformation; 4) optional contradictory sentence feature and adding transformation which involves the negative transformation described in the preceding chapter.

The first obligatory transformation applies to all types of subordinated sentences. It will convert the two sentences in the deep structure into one cause-sentence and one result-sentence. The second obligatory transformation will introduce the subordination particle to its proper position in the surface structure, thus subordinating the cause sentence to

the result sentence. The result of this transformation is sub-type 1, a "therefore-sentence", such as <u>ta</u> <u>šɨŋpin</u> <u>suʌyi</u> <u>ta</u> <u>pu</u> <u>lay</u> 'She is sick, therefore she is not coming.' For sub-type 2, although transformations 3) and 4) are listed as optional, either one or the other must take place following the first and the second. If 3)takes place, there is only one condition and one result, such as <u>žukuʌ</u> <u>ta</u> <u>lay</u> <u>wuʌ</u> <u>čyiow</u> <u>tʌn</u> <u>ta</u>. '<u>If</u> she comes, I'll <u>then</u> wait.' If 4) occurs, there are two pairs of cause-result sentences, one pair of positives and one pair of negatives, such as <u>žukuʌ</u> <u>ta</u> <u>lay</u> <u>wuʌ</u> <u>tʌn</u> <u>ta</u>, <u>zuku</u> <u>ta</u> <u>pu</u> <u>lay</u> <u>wu</u> <u>pu</u> <u>t</u> <u>n</u> <u>ta</u> ' If she is coming, I will wait; if she is not coming, I will not wait.'
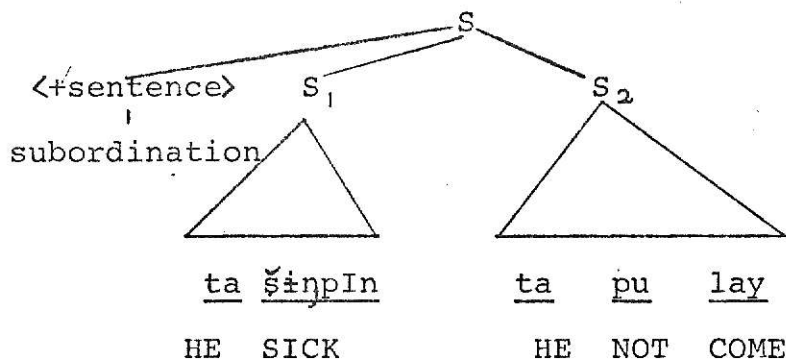
In both the surface structure and the deep structure, the cause-sentence always precedes the result-sentence. The cause-sentence is always a statement; and the result-sentence may be either a statement or a question, which has gone through the question transformations discussed in a previous paper (see Chen, 1971). This chapter includes a general survey of the therefore-sentence and the if-sentence.
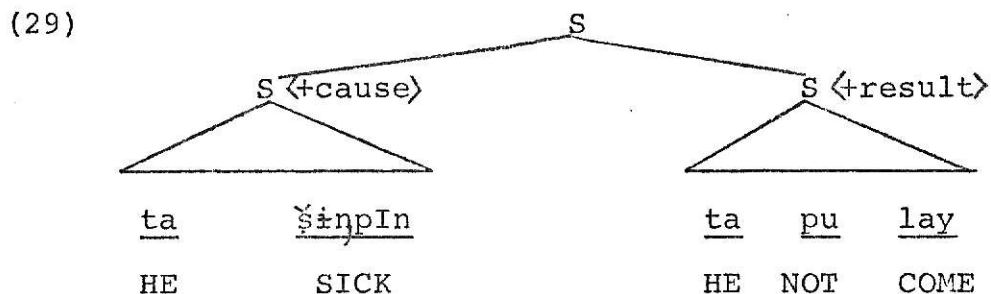

3.1. Therefore-sentence

The therefore-sentence is of sub-type 1, involving trans-formations 1) and 2). There are two simple sentences in the deep structure. When sentence subordination occurs, two sen-

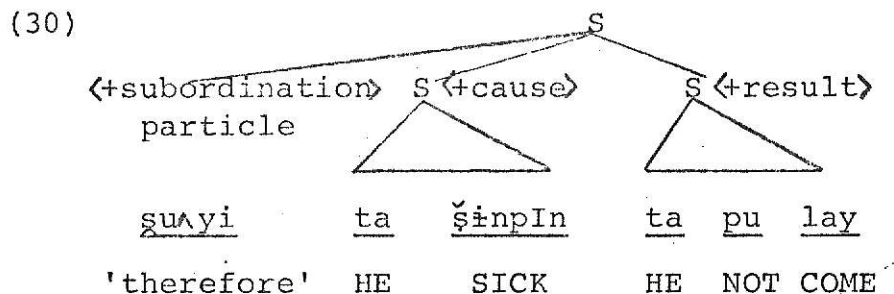tences will become related in meaning. Examples are as fol-lows:

(28) the deep structure:

```
                          S
        ╱                      ╲
⟨+sentence⟩    S₁              S₂
    │        ╱  ╲            ╱     ╲
subordination ╱    ╲        ╱        ╲
          ╱_____╲    ╱_____╲
          ta  šɨŋpIn     ta   pu   lay
          HE   SICK      HE  NOT  COME
```

(28) will be converted to (29) through cause-result feature transformation:

(29)

```
                      S
         ╱                        ╲
  S ⟨+cause⟩                S ⟨+result⟩
  ╱      ╲                  ╱       ╲
 ╱_____╲              ╱_____╲
 ta    šɨŋpIn            ta   pu   lay
 HE     SICK            HE   NOT  COME
```

In the above situation, the cause-result feature trans-formation converted $S_1$ to S +cause ; $S_2$ to S +result . In the following, (29) will be converted to (30) through the subordination-particle feature transformation:

(30)

```
                              S
        ╱                ╱          ╲
⟨+subordination⟩  S ⟨+cause⟩    S ⟨+result⟩
   particle       ╱   ╲          ╱    ╲
                 ╱_____╲        ╱_____╲
 suʌyi        ta   šɨŋpIn       ta  pu  lay
'therefore'   HE    SICK        HE  NOT COME
```

šuʌyi 'therefore', the subordination particle, is introduced at (30). Then' (30) will be converted to (31) through the subordination-particle movement transformation which will move the particle šuʌyi to the initial position of the result-sentence, and will subordinate the cause-sentence to the result-sentence as shown in the following:

(31)

```
                        S ⟨+result⟩
        ta          šinpIn              S ⟨+cause⟩, ⟨+subordination⟩
        HE          SICK
                                    šuʌyi ta pu lay
                                    THEREFORE HE NOT COME
```
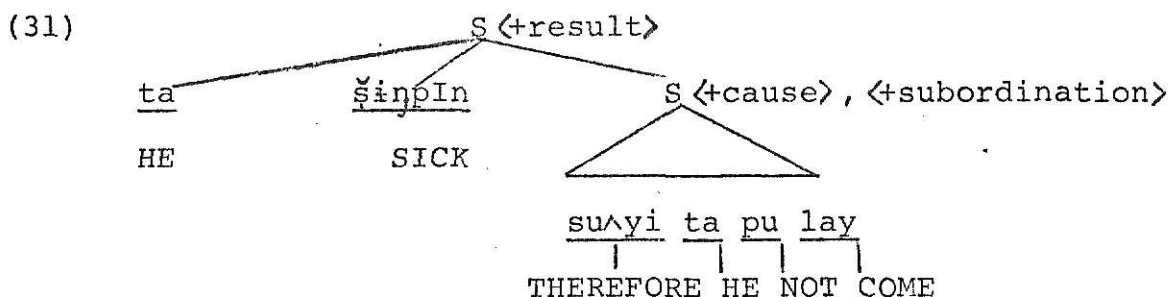
Further, (31) may be optionally converted to (32) through equi-NP deletion transformation:

(32)

```
                        S ⟨+result⟩
        ta          šinpIn          S ⟨+cause⟩, ⟨+subordination⟩
        HE          SICK
                                šuʌyi  Ø  pu  lay
                                THEREFORE Ø NOT COME
```
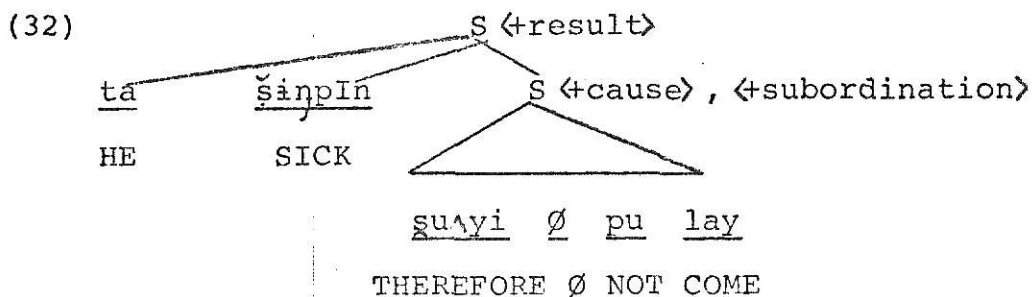
3.2. If-sentence

The if-sentence is of sub-type 2, involving transformations 1), 2) and 3) or 1), 2) and 4). In deep structure, there are two simple sentences. When sentence subordination occurs, two sentences become related to each other as a cause-sentence and as a result-sentence. See the examples following:

23

(33) the deep structure:

```
                          S
          <+sentence> S₁        S₂
          subordi-   /\        /\
          nation    /  \      /  \
                   /____\    /____\
                  nI   lay  wuʌ tʌn nI
                 YOU  COME  I WAIT YOU
                                FOR
```
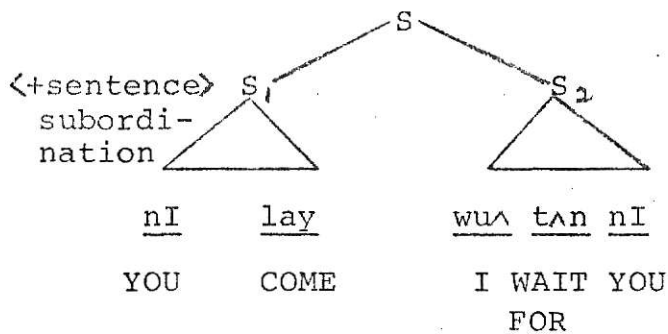
(33) will be converted to (34) by cause-result feature trans-
formation:

(34)

```
                        S
          S <+cause>           S <+result>
            /\                   /\
           /  \                 /  \
          /____\               /____\
         nI    lay            wuʌ tʌn  nI
        YOU   COME             I  WAIT YOU
```
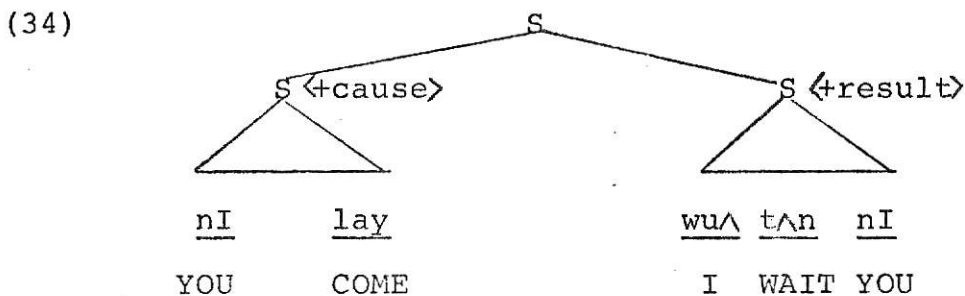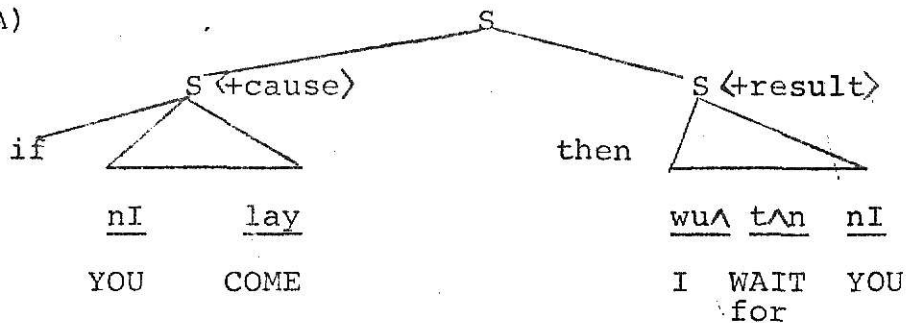
(34) will be converted to (35) through either of the two types
of transformations, namely: A) subordination-particle feature
transformation to the cause-sentence and an adverb-particle
feature transformation to the result-sentence; B) subordina-
tionparticle feature transformation to the cause-sentence and
contradictory sentence adding transformation which involves
the negative transformation.  Each type will be followed by
the particle-movement transformation.  Semantically, these two
types have the same meaning although they will generate two
different surface structures.  Types (A) and Type (B) will be
demonstrated respectively from (34) in the following:
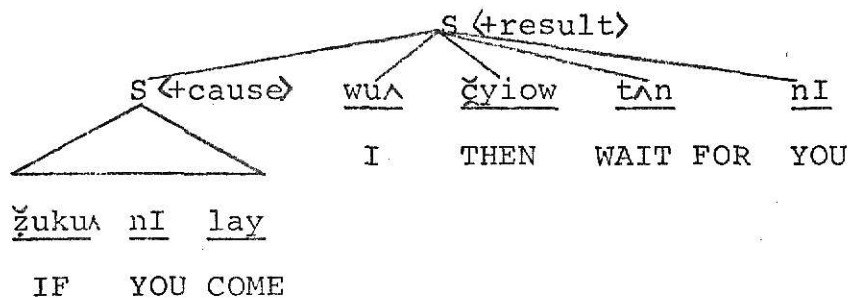Type (A): by subordination-particle-feature transformation;
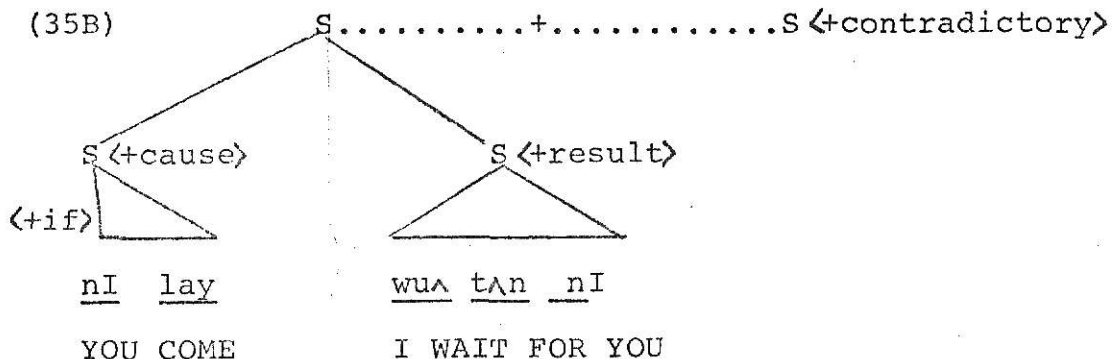
24

adverb-particle-feature transformation:

(35A)

```
                                    S
                    S <+cause>              S <+result>
              if                      then
                 nI      lay               wuʌ  tʌn  nI
                YOU     COME              I   WAIT YOU
                                               ·for
```

(35A) will be converted to (36A) by the particle-move-
ment transformation which will subordinate the cause-sen-
tence to the result-sentence as well as effecting the move-
ment.

(36)

```
                              S <+result>
           S <+cause>    wuʌ   čyiow    tʌn       nI
                          I    THEN    WAIT FOR   YOU
         žukuʌ  nI  lay
          IF   YOU COME
```
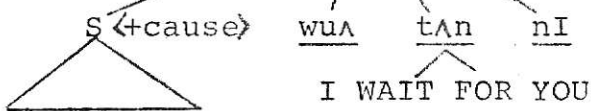
Type (B): by subordination-particle-feature transformation;
contradictory-sentence-feature transformation.

(35B)

```
          S...........+............S <+contradictory>
       S <+cause>            S <+result>
   <+if>
     nI   lay            wuʌ  tʌn  nI
    YOU COME            I WAIT FOR YOU
```

(35B) will first be converted to (36B) by particle-movement
transformation:

25

(36B)         S ⟨+result⟩ . . . . . . . + . . . . . . . S ⟨+contradictory⟩,
                                                        ⟨+negative⟩

```
         S ⟨+cause⟩   wuʌ    tʌn    nI
        /‾‾‾‾‾‾‾\            I WAIT FOR YOU
       /_____\
```

<u>žukuʌ</u> <u>nI</u> <u>lay</u>

IF YOU COME

Then will be converted to (37B) by the contradictory-sentence

adding transformation:

(37B)         S ⟨+result⟩ _____ + _____ S ⟨+contradictory⟩

```
   S ⟨+cause⟩   wuʌ tʌn nI         S ⟨+cause⟩   Wuʌ pu tʌn nI
  /‾‾‾‾‾‾\      I  WAIT YOU       /‾‾‾‾‾‾\       I NOT WAIT YOU
 /_____\        FOR           /_____\
```

<u>žukuʌ</u> <u>nI</u> <u>lay</u>        <u>žukuʌ</u> <u>nI</u> <u>pu</u> <u>lay</u>

IF   YOU COME           IF    YOU NOT COME

## SUMMARY AND CONCLUSION

### 4.1. Summary of the Previous  Discussions

There are two themes in the previous discussions, 1) the formation of Mandarin embedded sentences; 2) the formation of Mandarin subordinated sentences.  For Section 1) sentence embedding, there are two main types, a) embedded sentences in NP's functioning as subject or object.  b) embedded sentences in adjective position functioning as modifiers of subject or object.  For Section 2) sentence subordination, there is one main type, cause-result, with two sub-types a)therefore-sentence; and b)if-sentence.

There are twelve transformational rules for Mandarin sentence embedding and sentence subordination, as follows:

### 4.2. Transformational Rules

1) <u>T-1</u>   <u>Negative Transformation</u> (optional)

A. SD: NEG.   NP    V    NP

SC:  1      2    3    4 $\longrightarrow$ Ø  2  1  3  4

B. SD: NEG.   NP   V    NP $^{[NP\ VP]}$    NP

SC:  1        2       3   4 $\longrightarrow$ Ø  2  3  1

2) <u>T-2</u>   <u>Sentence Attachment</u> (optional)

Accusative Case:

SD: NP     V     NP

SC: 1    2    3 ⟹ 1  2  #S#

Nominative Case:

SD: NP     V     (NP)

     (trans. or intran.)

SC: 1    2    (3) ⟹ #S#  2  (3)

Accusative Case with two objects:

SD: NP    V    NP    NP

SC: 1   2   3   4 ⟹ 1  2  3  #S#

Condition: This rule only applies to the direct object NP,
which is always preceded by an indirect object NP.

3) T-3  Equi-NP Deletion (optional)

SD: NP    V    NP    NP

    1     2     3     4 ⟹

SC: 1    2    Ø    4

Condition: When 1 and 3 or 2 and 4 refer to the same person.

4) T-4  Copula Deletion Transformation (optional)

SD: NP    Copula    [ +VB , -V ]

SC: 1    2       3 ⟹ 1  Ø  3

Condition: When copula is followed by an adjective, the
copula is deleted.

5) T-5  Adjectivization Transformation (obligatory)

SD: [ NP  ES---[NP V NP]---ES  V INTR.  (NP) ]

    1        2 3 4           5 ⟹

SC:  Ø        Ø 3 4's 1        5

6) T-6    Cause-result Feature Transformation (obligatory)

SD:   $\langle$+ sentence subordination$\rangle$    $S_1$    $S_2$

1                                    2        3 $\Longrightarrow$

SC:            $\emptyset$                   S $\langle$+cause$\rangle$ S $\langle$+result$\rangle$

7) T-7    Subordination Particle Feature Transformation
          (obligatory)
                                    [ NP VP]
SD:   S $\langle$+cause$\rangle$      S $\langle$+result$\rangle$        S $\langle$+result$\rangle$

1                                    2   3          $\Longrightarrow$

SC:   $\langle$+žukuʌ$\rangle$   1   2   3

8) T-8    Subordination Particle Attachment Transformation
          (obligatorily following T-7)

SD:   $\langle$+žukuʌ$\rangle$    1   2   3 $\Longrightarrow$

SC:   žukuʌ +   1   2   3


Transformations 9-10   result in the if-sentence sub-type A:

9) T-9    Adverb Particle Feature Transformation
          (obligatorily following T-9)

SD:   žukuʌ + 1    2    3 $\longrightarrow$

SC:   žukuʌ + 1 $\langle$+čyio$\rangle$  2    3

10) T-10   Adverb Particle Movement Transformation
          (obligatorily following T-9)

SD:   žukuʌ  +1   $\langle$+čyio$\rangle$    2        3 $\longrightarrow$

1           2        3    4

SC:          1           $\emptyset$       3  2  4

29

Transformations 11-12 result in if-sentence sub-type B:

11) <u>T-11</u>  <u>Contradictory Sentence Feature Transformation</u>

(optionally following <u>T-8</u>)

SD: žukuʌ  +1    2    3 ――――――――――――――――→

SC:  +contradictory sentence       1

12) <u>T-12</u>  <u>Contradictory Sentence Adding Transformation</u>

(obligatorily following <u>T-11</u>)

SD: ⟨+contradictory sentence⟩       1 ――――――――――――→

SC: Ø    1    ;   NEG. + 1

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 roach to Aspect of Verb in Mandarin with Special Re-
 ference to the Aspect Particle in Coordinate Structure."
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A TRANSFORMATIONAL GENERATIVE APPROACH TO

MANDARIN EMBEDDED SENTENCES AND SUBORDINATED SENTENCES

by

KWANG-TING CHRISTINE CHEN

B.A., Soochow University, 1969

———————————

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

Department of Speech

KANSAS STATE UNIVERSITY

Manhattan, Kansas

1972

# ABSTRACT

This paper deals with two topics: 1) the formation
of Mandarin embedded sentences; and 2) the formation of
Mandarin subordinated sentences. For Section 1) on
sentence embedding, there are two main types, a) embedded
sentences in NP's functioning as subject or object, and
b) embedded sentences in adjective position functioning
as modifiers of subject or object. For Section 2) on
sentence subordination, there is one main type, cause-
result, with two sub-types, a) therefore-sentence; and
b) if-sentence.

There are twelve transformational rules involved in
the abovedescribed two types of sentences. Of the
twelve rules, five of them are particularly important.
There are: sentence attachment; adjectification trans-
formation; feature transformation; subordination particle
or adverb particle movement transformation; and con-
tradictory sentence feature transformation.

The rules are demonstrated through tree diagrams.
The transformation from deep structure to surface
structure is therefore exemplified through the tree
diagrams.