0. Introduction

Language games have fascinated linguists in that they can provide unusual insight into the grammars of languages. The evidence provided by the study of a language game has usually been used by linguists to argue for certain phonological and morphological analysis of the source language. Recent studies of the mechanism that derives language games also discuss broader theoretical issues like the nature of this mechanism, its reflection of internal structure of the syllable and morpheme, its relationship with the morphological and phonological processes in natural languages, and the proper phonological and prosodic representations in describing the formation of language games (e.g., McCarthy 1981, 1982; Yip 1982).

Chinese secret languages are language games spoken by children, thieves, or fortune tellers. They are also called Fanqie languages because their formation follows the traditional Chinese Fanqie principle which divides a syllable into an Initial and a Final.¹ (1) gives some examples illustrating this traditional division of syllables.
### (1) Initials and Finals in Chinese (Tones are omitted)²

<table>
<thead>
<tr>
<th></th>
<th>a. /ma/</th>
<th>b. /kuai/</th>
<th>c. /pan/</th>
<th>d. /tuan/</th>
<th>e. /uan/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initials:</td>
<td>/m/</td>
<td>/k/</td>
<td>/p/</td>
<td>/t/</td>
<td>none</td>
</tr>
<tr>
<td>Finals:</td>
<td>/a/</td>
<td>/uai/</td>
<td>/an/</td>
<td>/uan/</td>
<td>/uan/</td>
</tr>
</tbody>
</table>

Within a syllable the first consonant is the Initial, what remains is the Final. (1) e. is an example of the "zero Initial" syllable. Chao (1931) describes eight varieties of Chinese secret languages in terms of this traditional view on the Chinese syllable. In these languages each syllable is typically split into two syllables with the addition of a fixed Initial and/or a Final. For example, one of the Mandarin secret languages derives [may ka] from the base word /ma/, the fixed Initial /k/, and the fixed Final /ay/. Departing from this traditional view, Yip (1982) proposes to treat the formation of these secret languages as instances of reduplication within the framework of CV phonology (McCarthy 1979, Clements & Keyser 1983).

In this paper I examine the behavior of nasal segments in Taiwanese secret languages described by Li (1985) in the hope of revealing the relationship between the phonological structure of the source language and that of the secret languages, and throwing some light on the understanding of the formal mechanism and principles employed by Chinese secret languages. I follow Yip in treating the formation of Chinese secret languages as reduplication,³ and assume an autosegmental model of phonology that incorporates underspecification (e.g. Archangeli & Pulleyblank 1986) and feature geometry (e.g. Clements 1985a; Sagey 1986). In Section 1, an introduction of three types of Taiwanese secret languages is given. Section 2 shows that the spreading of nasality of the nasalized vowels throughout the whole reduplicated domain in the secret language argues for the existence of a floating nasal feature in Taiwanese and the treatment of this domain as a basic morphological word. The behavior of the syllable final consonants in these Taiwanese secret languages presented in Section 3 calls for an assimilatory treatment rather than the dissimilatory one proposed by Yip (1982). Section 4 discusses some theoretical implications with respect to the theory of reduplication in analyzing the syllabic nasals in Taiwanese secret languages. Finally, a conclusion summaries the preceding sections.

### 1. Taiwanese Secret Languages

Taiwanese is spoken by about 70% of the population in Taiwan. It belongs to the Southern Min dialect group of Chinese languages,⁴ and can be classified as a subdialect of Amoy or Xiamen dialect.⁵ Li (1985) describes three varieties of Taiwanese secret languages in terms of Initials and Finals. Examples are given in (2).
Type 1:  
a.投 --> 要 投 'head'
b. e hiau --> le i liau hi 'able'
c. tsiau-a --> liau tsi -a 'bird'.

d. u kau bo --> u lu kau lau bo lo 'Is it enough?'
e. i pua to -i -a --> i li pua lua to lo -i -a 'He stumbled'

Type 3:  
f. hue tsiau --> sue lue hi sia liau tsiau 'train'
g. i pua to -i -a --> si li i sua lua pi so lo li -i -a

Like other Chinese languages, each Taiwanese syllable is also a morpheme. The general rule of the first type breaks each syllable (i.e. each morpheme) into two syllables. The first syllable contains the Final of the source syllable and a fixed Initial [i]; the second syllable has [i] as the nucleus accompanied by the Initial of the source syllable. Examples like (2) c. and e. illustrate that some suffixes and particles do not undergo the rule. /tsiau-a/ will become /liau tsi -a/ but not * /liau tsi la i/. The second type is simpler. It reduplicates each syllable and replaces the Initial of the second syllable by [i]. In the third type each base syllable becomes three syllables. The formation of the second and the third syllables follows the same rule as in type 1; the first syllable keeps the Final of the source syllable but uses /s/ as the Initial. Since type 3 is a combination of types 1 and 2, and type 1 is more complicated than type 2, I will focus on type 1 in the following discussion. (3) shows a simple derivation that combines the view of Initial/Final division and Yip's proposal that reduplicates the melody given a prespecified template. It appears that the Initial/Final template is sufficient for deriving these secret languages in a very simple and generalized way.

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(3) Type 1 b.

| | i | i | i | i | i |
|------------------|
| I F I F I F I F --> I F I F I F I F |

Taiwanese has six oral vowels /i e a u o o/, four nasalized vowels /ĩ ē ă ŋ/, and two syllabic nasals /m n/. Taiwanese nasal consonants are usually analyzed as allophones of the voiced stops in the onset position because the onset nasals occur only before nasal nuclei, i.e., nasalized vowels and syllabic nasals, while the voiced stops before oral vowels. Examples of nasal assimilation are given in (4). (4) a, b, and c. show the complimentary distribution of nasals and voiced stops. (The /l/ in Taiwanese is in fact a flap, and patterns as a voiced alveolar stop.) (4) d. and e. indicate that the assimilation rule also
applies to syllables with syllabic nasals. The example in e. will be important for our discussion in section 4.

(4) Nasal assimilation in Taiwanese

a. /bT/ --→ [mT] 'noodle'  /bi/ --→ [bi] 'rice'

b. /li/ --→ [n] 'year'  /li/ --→ [l] 'you'

c. /gē/ --→ [ŋ] 'hard'  /ge/ --→ [ge] 'tooth'

d. /bŋ/ --→ [mŋ] 'door'

e. /ŋ/ --→ [ŋ] 'egg'

The general rule of the type 1 TSL states that the Final is always prespecified as [i], but nasal segments behave differently with respect to this. In the following sections, the behavior of three kinds of nasal segments in the TSL is discussed.

2. Nasalized Vowels

When the syllable contains a nasalized vowel, the output of the secret language observes the nasal assimilation rule in (4), and the prespecified vowel [i] is also nasalized.

(5) Nasalized vowels

a. sua kha --→ lūsī la khī --→ nūsī la khī  'foot of mountain'

b. pé tī --→ lē pī lī tī --→ nē pī nī lī  'hospital'

c. tsai tā --→ lai tsi lī tā --→ lai tsi nī lī  'to know'

For instance, in (5) a. the first word /sua/ will become [nūsī lī]. Notice that the spreading of the nasal feature does not go across the word boundary; that is, the second word /kha/ is not affected. Li explains the nasalization of the prespecified vowel [i] by stating that "the feature of nasality is a property of the entire syllable rather than the initial or the final" (1985:111). In terms of autosegmental phonology, nasality of Taiwanese nasalized vowels can be considered a floating feature that spreads to the vowels and voiced consonants within the word. As suggested by Yip (1982, 1988), the formation of Chinese secret languages is viewed as changing a single syllable morpheme into a bisyllabic morpheme. The domain this floating nasal can spread is still a single word but with two syllables. As a result, the output of (5) a. is two bisyllabic words, and the nasal feature can spread to the vowel in the second syllable but not to those in the third and fourth syllables that belong to the second word.

Evidence from the source language also indicates that the spreading of this nasal feature has the word as its domain. (6) provides an example. In the source language the nasal feature is spread to the
adjacent glides and the initial voiced flap. On the other hand, in a compound like (6) b. the second word is not affected. Examples in (7) also show that this nasal assimilation does not spread the feature across word boundaries.

(6) a. liāu ---> nīāū 'cat' bin ---> bin 'face'
    b. liāu bin ---> nīāū bin 'a face with many wrinkles or scratches'

(7) a. ĭ -a ---> [ți ĭ] b. bē a ---> [bē ĭ]
    baby noun suffix baby sick duck sick duck

It is thus evident that the TSL observes the same assimilation rule as in the source language, and to treat the reduplicated domain in the TSL as a bisyllabic word is justified.

Another question is concerning the nature of this nasal feature. If we adopt a model that represents melodic features in a multi-tiered tree (e.g., Archangeli & Pulleyblank 1986; Clements 1985a; Sagey 1986), this nasal feature does not have to be floating in order to achieve the same effect because we can simply spread the nasal node of the nasalized vowel within the domain as long as no other nasal nodes intervene to block the spreading. However, notice that there is no nasal assimilation in the second example of (6) a., /bin/. If we do not posit a floating nasal feature in Taiwanese, we are forced to claim that only the nasal feature of a vowel can spread, but not the one of a coda nasal consonant. This does not seem to be an appealing solution because such a condition complicates the structure description of a simple assimilation rule. Furthermore, the following section demonstrates that the coda nasals exhibit quite different behavior from the nasalized vowels in the TSL. The nasal feature of a nasalized vowel and a nasal consonant in Taiwanese should have different properties.

3. Syllable Final Consonants

The second type of exceptions with respect to the prespecified Final is illustrated in (8).

(8) Syllable final coronals and labials in TSL
    a. tʰau ---> lau tʰi (* lau tʰiu) 'head'
    b. tsin ---> lin tsin (* lin tsi) 'very'
    c. tiam ---> liam tin (* liam ti, * liam tim) 'tired'
    d. tʰat ---> lat tʰit (* lat ti) 'to kick'
    e. tsap ---> lap tsi (* lap tsi, * lap tsip) 'ten'

(8) a. shows that the post-nuclear back glide /u/ ([w]) cannot be part of the Final in the second syllable, even though /tʰiu/ is a possible word in the source language. By contrast, the coda consonants occur in
the form of coronals in the second syllable. Examples are given in (8) b. through e. Notice that in (8) c. and e. coronals rather than labials appear in the coda of the second syllable.

A Cantonese secret language has the same phenomenon:

(9) Syllable final coronals and labials in a Cantonese secret language (Chao 1931, Yip 1982, 1988)

a. kau ---+ lau ki (* lau kiu) 'enough'
b. lan ---+ lan lin (* lan li) 'body'
c. thim ---+ lim thim (* lim thi, * lim thim) 'sweet'
d. kat ---+ lat kit (* lat ki) 'good luck'
e. lap ---+ lap lit (* lap li, * lap lip) 'ten'

To account for this, Yip (1982) proposes a template in which the final C slot is marked by [+cons] indicating that a [-cons] segment cannot be linked to the coda of the second syllable. She also gives a dissimilation rule to change a labial into a coronal. (10) a. and b. demonstrate the derivation of this rule.

(10) Template

\[
\begin{array}{ccc}
C & V & C \\
| & | \\
| & +cons \\
\end{array}
\]

\[
\begin{array}{ccc}
C & V & C \\
| & +ant | \\
| & | \\
\end{array}
\]

Dissimilation (Yip 1982) [+ant] ---+ [+cor] / _ | Where \( \mu \) = morpheme

a. thim ---+ lim thim ---+ lim thim
b. sap ---+ lap sip ---+ lap sit

Yip (1988) proposes to invoke the morpheme structure constraint and the Obligatory Contour Principle (OCP) (McCarthy 1986) to motivate this dissimilation rule. Cantonese has a morpheme structure constraint that forbids two labials in a morpheme.

(11) Cantonese Morpheme Structure Constraint (Yip 1988)

\[
* [labial...labial]_\mu
\]

E.g. * pûm * mam * pap

It is suggested that since the general rule of Cantonese secret language formation creates two labials, and the bisyllabic output is considered a morpheme, the OCP, which prohibits two identical melodic elements on the same tier, then triggers the dissimilation rule.

This proposal can also provide a valid account for the same phenomenon in the TSL since Taiwanese has the same constraint forbidding two labials in a morpheme. A problem arises, however, in the case of Taiwanese because the velars in the Cantonese secret language do not dissimilate to coronals, while those in the TSL do. (12) and (13) illustrate the contrast.
(12) Syllable final velars in the Cantonese secret language
a. .fun -->  luŋ fiŋ  'wind'  b.  pak  -->  lak pik  'north'

(13) Syllable final velars in the TSL
a.  hɔŋ  -->  loŋ hin  'wind'  b.  pak  -->  lak pɨɬ  'to peel'

We can certainly adopt the same strategy by saying that there is also a constraint prohibiting two velars within a morpheme. But this is not true in Taiwanese. (14) gives some examples of Taiwanese words containing two velars.

(14) /kak/ 'horn'  /kok/ 'nation'  /kʰaŋ/ 'empty'  /giok/ 'jade'

If we consider the fact that the prespecified Final is assimilated by the nasalized vowels. It may be the case that the prespecified Final is affected only through assimilation. My proposal given in (15) treats the phenomenon as assimilation rather than dissimilation. This assimilation process involves the spreading of the nasal feature or the laryngeal node to the Final. Here the laryngeal node is used for stops because these syllable final stops are unreleased and have glottal constriction. For ease of exposition, the skeleta are presented instead of Initials and Finals, and C's, G's and V's are also used even though the representation of syllable structure and syllabification in Levin (1985) is assumed in this paper. (15) a. and b. illustrate the assimilation process. The coronal feature will be supplied later by a redundancy rule given in (15) B. The association is from right to left to prevent an Initial stop, e.g., the /t/ in (15) a., from spreading its laryngeal features to the Final.

(15) Proposed analysis
A. Assimilation rather than dissimilation
   Direction of association : R-->L
   Spread the nasal feature ([N]) / the laryngeal node (LN)

   C = consonant  G = pre-nuclear glide  V = N  (N = nucleus)  X

   a.  i i  C G V X  C V X  i
      t i a m  t i a m  t
      [N]

   b.  i  C G V X  C V X  i  p a k
      p a k  p a k  p
      bLN

B. [ ]  -->  [+cor]
One may want to question if there is some other evidence for this analysis. First of all, another Chinese secret language seems to call for a similar treatment. The SuZhou secret language has a prespecified Final in the second syllable. The Final of the source syllable stays in the first syllable while the Initial goes to the second syllable. Examples in (16) show that the first syllable in the secret language adds a voiced laryngeal sound [\(\beta\)] to the Final when the source syllable has a voiced Initial. We may treat this as a result of spreading the voiced feature (or the laryngeal node) to the first syllable as illustrated in (16) g.

(16) SuZhou secret language (Chao 1931): fu --> u f\(\dot{a}\)n

a. t\(\ddot{a}\) --> t\(\ddot{a}\) n

b. tçüâ --> üæ tçüâ

dh\(\ddot{a}\) --> h\(\ddot{a}\) dh\(\ddot{a}\)n

dz\(\ddot{a}\) --> h\(\ddot{a}\) dz\(\ddot{a}\)n

c. ìân --> ìân ìân
d. n\(\ddot{a}\)n --> h\(\ddot{a}\)n n\(\ddot{a}\)n
e. k\(\ddot{u}\)d --> u\(\ddot{a}\) k\(\ddot{a}\)n

f. g.

\[
\begin{array}{cccc}
G & V & X & C \\
\mid & | & | & | \\
k & u & \ddot{a} & \\
\end{array}
\quad
\begin{array}{cccc}
G & V & X & C \\
\mid & | & | & | \\
\ddot{a} & n & | & | \\
\end{array}
\]

Secondly, the place assimilation presented in (17) assimilates a syllable final coronal to the place of articulation of the following consonant. This is a very common assimilation process in many world languages. If we follow the general practice employed in an autosegmental model that incorporates underspecification and feature geometry, and interpret this process as a leftward spreading of the place node to a segment unspecified for its place features, then the coronals in Taiwanese should be the segments unspecified for place features. This fact justifies our treatment of having the coronal feature unspecified underlyingly, and inserted by a redundancy rule.

(17) Consonant place assimilation in Taiwanese

a. /bi\(\ddot{u}\)n kun/ --> [bi\(\ddot{u}\) j kun] "towel"

b. /sin bun/ --> [si\(\ddot{u}\)n bun] "news"

c. /sat bun/ --> [sa\(\ddot{u}\)n bun] "soap"

d. /tsh\(\ddot{u}\)t k\(\ddot{u}\)i/ --> [tsh\(\ddot{u}\)k k\(\ddot{u}\)i] "go out"

In addition, both of the nasal assimilation given in (4) and the place assimilation here have a local leftward spreading. The right to left association should be acceptable since it is evident in the source language. This directionality is further supported by the analysis in the next section.
4. Syllabic Nasals

According to Chao (1931), in some Chinese secret languages, a syllabic nasal may fail to be reduplicated or may undergo total instead of partial reduplication, e.g., m → m m, while in some others, it behaves as a consonant and a nucleus. Yip (1982) points out that a syllabic nasal in Chinese secret languages behaves both as an onset consonant and a syllabic nucleus at the same time. In this Taiwanese secret language, however, syllabic nasals of the source syllables are treated exclusively as morpheme final nasal consonants.

(18) Syllabic nasals in the TSL
a. hue m → lue hi la̓m in (* lm i, * lm mi) 'flower bed'

b. n → lən in (* ln i → * nŋ i, * ln nji → * nŋ nji) 'yellow'

c. təm → lən thin (* nŋ thi) 'sugar'

If only Initials and Finals are used to derive this set of data, since syllabic nasals are Finals, they should have occurred in the TSL. Apparently, this treatment cannot derive the correct result. The question then is how we can account for the fact that the syllabic nasals here cannot occupy the onset and the nucleus positions as those in other Chinese secret languages.

Recall that the onset nasals in Taiwanese occur only through assimilation from the nasalized vowels. This fact may be considered a reason why the syllabic nasals do not behave as onsets; i.e., in the TSL a nasal cannot be linked to an Initial because an Initial nasal should always be a result of nasal assimilation. It is, however, unexpected that these syllabic nasals do not at all behave as syllabic nuclei either. Rather, an epenthetic schwa is required. It appears that there is no transfer effect in the sense of Clements (1985b), in which it is proposed that syllabic information is transferred in reduplication so that a [+syllabic] segment is always reduplicated as a [-syllabic] segment (cf. McCarthy and Prince 1987). One may suggest that since the combination of /l/ and syllabic /m/ is not a possible morpheme in Taiwanese, the TSL observes the same constraint. Epenthesis then serves to provide a nucleus and makes the string syllabifiable. However, underlying /ləŋ/ (--- → [ŋŋ] 'egg' (4) e.) is in fact allowed in the source language, and ironically, the output of the secret language, e.g., /ləŋ/ does not exist in the source language either underlyingly or on the surface.

(19) In Taiwanese */lm/* /ləŋ/* /ləm/* [ləŋ] *[ləm]

but /lŋ/ → [ŋŋ] 'egg'
If morpheme structure constraints in the source language are invoked, then it is difficult to explain why a possible combination like /lη/ cannot be maintained, but non-existing strings like /ləm/ and /ləŋ/ are allowed in the output. Consequently, the incompatibility of segments and morpheme structure constraints cannot fully account for the data.

My proposed analysis assume that a nasal becomes syllabic through syllabification rules, and the feature matrix of the segment does not contain the feature [+syllabic]. Therefore, in the secret language the melody of a syllabic nasal can be linked to a C slot as well as a V slot. This can also account for the fact that in some Chinese secret languages a syllabic nasal behaves as an onset and a nucleus at the same time. The derivation is given in (20). Since we associate from right to left, the nasal is first linked to a post-vocalic slot, and then becomes a coda consonant. The epenthesis rule inserts a schwa so that the first syllable may have a nucleus, and the assimilation rule (15) adds a coronal nasal to the prespecified Final in the second syllable. In (20) b. the nasal cannot be linked to the Initial in the second syllable because initial nasals should always result from nasal assimilation.

(20) Proposed analysis
   A. Syllabic nasals can be associated with non-nuclear slots.
   B. Direction of association: R→L
   C. ə epenthesis
   D. Nasals cannot be associated with Initials.

\[\begin{align*}
a. & \quad \text{CGVX C V X} & \rightarrow & \text{CGVX C V X} \rightarrow \text{CGVX C V X} \\
& & \theta \eta & \theta \eta_{[N]} & \theta \eta & \theta \eta_{[N]} & \partial \eta & \theta \eta_{[N]} & [+Cor] \\
& & \rightarrow & \text{1əŋ} & \text{thin} \\

b. & \quad \text{CGVX C V X} & \rightarrow & \text{CGVX C V X} \rightarrow \text{CGVX C V X} \\
& & \text{m} & \text{m}_{[N]} & \partial \text{m} & \text{m}_{[N]} & \partial \text{m} & [+Cor] \\
& & \rightarrow & \text{1əm} & \text{in}
\end{align*}\]

In fact, two solutions are possible for remedying the lack of a nucleus after the linking of the nasal to the post-vocalic slot; namely,
resyllabification and epenthesis. We should also explain why the TSL disfavors the solution of resyllabifying the string to yield a surface syllabic nasal. One possible answer to this is that the template and its syllable structure is fixed, and cannot be resyllabified. However, the example in (21) a. indicates that resyllabification is sometimes necessary in order to obtain the correct result. (21) b. is the resyllabification rule necessary for making /u/ to surface as a pre-vocalic glide and /i/ as the nucleus. If resyllabification is allowed, we can hardly explain why the same process cannot apply to the syllabic nasals. As shown in (21) c. and d., the result is wrong.

(21) Resyllabification
a.  
\[
\begin{array}{llllllllll}
\text{C G V X} & \text{C V X} & \rightarrow & \text{C G V} & \text{C V} \\
\text{t u i} & \text{t u i} & \rightarrow & \text{t u i} & \text{t i}
\end{array}
\]

b.  
\[
\begin{array}{llllllllll}
\text{N} & \text{N} \\
\text{X X X} & \rightarrow & \text{X X X} \\
\text{t u i} & \rightarrow & \text{t u i}
\end{array}
\]

c.  
\[
\begin{array}{llllllllll}
\text{C G V X} & \text{C V X} & \rightarrow & \text{C V V X} & \rightarrow & \ast \text{C V V X} \\
\eta & \eta [N] & \rightarrow & \eta & \eta & [N] & \text{n \eta} & \text{i n} \ [+cor]
\end{array}
\]

d.  
\[
\begin{array}{llllllllll}
\ast \text{N} & \text{N} \\
\text{X X X} & \rightarrow & \text{X X X} \\
\eta & \rightarrow & \text{\eta}
\end{array}
\]

One can also argue that in the TSL, epenthesis is preferred in achieving proper syllabification for words containing syllabic nasals. But we might want to question the reason for this preference. One possible solution is to adopt the idea of the ‘single melody theory’ of reduplication proposed in Mester (1986) and invoke a condition on
structure dependent rules (CSD) (Levin 1985:89). The 'single melody
type' posits synchronous skeletal templates and does not reduplicate
(or copy) the melody (cf. Marantz 1982; Clements 1985b); the CSD
states that a phonological rule will not affect the the internal feature
composition of a geminate unless both halves of the geminate meet the
structural description of the rule, and also satisfy the structure change of
the rule in the output. The rule in question here is the Nucleus
Placement rule. (22) demonstrates that given a representation
proposed by Mester, resyllabification is blocked because the nasal is
doubly linked to two slots; i.e., the Nucleus Placement rule cannot apply
to a doubly linked nasal because of the CSD. Since resyllabification is
blocked, in order to get a nucleus, epenthesis applies. Linearization
and coronal insertion then take place to yield a correct result.

(22) Proposed analysis (revised)
"Single Melody Theory" of Reduplication (Mester 1986)
Condition on Structure Dependent Rules (Levin 1985:89)

5. Conclusion

If the analysis we have discussed is acceptable, there will then
be several consequences with respect to the studies of Taiwanese
phonology, Chinese secret languages, and the theory of reduplication.
(1) The feature of nasality of the nasalized vowels in Taiwanese should
be analyzed as a floating feature on the morpheme. The domain for its
spreading is the basic morphological word in Taiwanese. On the other
hand, the nasal feature of a nasal consonant is not a floating one. We
should then posit two kinds of nasal feature in Taiwanese. (2) It is
interesting to consider not only how secret languages can provide
insight into the grammar of the source language, but also how the
phonological and morphological processes in the source language can
give clues or justification to the analysis of secret language formation.
(3) The behavior of the syllable final consonants in some Chinese secret languages has previously been viewed as an instance of dissimilation. The data from the TSL, on the other hand, suggest a reanalysis with an assimilatory treatment. (4) The transfer effect of syllabification information suggested in Clements (1985b) does not seem to hold. One might want to question whether this kind of transfer effect is universal, or exists at all. (5) The morpheme structure constraint may not always provide a satisfactory account for a language game that has concealment as its nature. (6) Even though it is in fact quite appealing to treat TSL formation simply by means of Initials and Finals without reference to the internal skeletal composition, the behavior of the syllabic nasals appears to indicate that the skeleta may still be needed in describing the mechanism of TSL formation.

ENDNOTES

1 In Chinese, each character is a morpheme; the morpheme and the syllable are coextensive with only a few exceptions (e.g., the subsyllabic suffix -r in Mandarin Chinese). Fangie is a traditional method used by Chinese lexicographers to represent the pronunciation of Chinese characters. Each character is represented by two characters. The pronunciation of the initial consonant (Initial) is exemplified by that of the first character, the prevocalic glide and the rime of the syllable (Final) and the tone by those of the second.

2 I follow the traditional way in writing the glides as vowels. The occurrence of these surface glides can be predicted by syllabification rules.

3 Another analysis has been proposed by Yin (1984), in which affixation instead of reduplication is suggested.

4 Chinese dialects, e.g., Mandarin, Cantonese, Taiwanese, are in fact mutually unintelligible languages. Since I do not attempt to discuss the sociolinguistic problem of dialect/language classification in Chinese, the terms "dialect" and "language" are used interchangeably in this paper.

5 Amoy has been the lingua franca of the southern Min or Fujian area, and also spoken by many overseas Chinese in Southeastern Asia and America.

6 Tones are omitted in all examples in this paper. The tonal behavior is quite interesting in Taiwanese secret languages, but it is irrelevant to the focus of this paper. Readers are referred to Li (1985) for a detailed description.

7 Among [+cons] segments, only nasals and unreleased voiceless stops may occur in the syllable final position.
Details about the formation of this secret language are more complicated. See Chao 1931:340-344.

See McCarthy and Prince (1987) for a discussion on the issue of the transfer effect in reduplication.

REFERENCES


McCarthy, J. and A. Prince (1987) "Quantitative Transfer in Reduplicative and Templatic Morphology," ms., University of Massachusetts, Amherst, and Brandeis University, Waltham.


