One of the most distinctive phonological changes which occurred in the evolution of modern Cantonese from Middle Chinese (MC) was the realignment of MC 'inner' and 'outer' rimes. An account of this phenomenon in contemporary generative phonology would lead one to posit a flip-flop rule. The evidence for such a rule is presented in section 2. Despite the formal elegance of the flip-flop rule, the rule throws no light on some apparent exceptions. These exceptions are discussed in section 3. While the flip-flop account can be modified to handle the data, it is argued that an account in terms of a push-chain provides a more satisfying explanation. We begin, in section 1, with some necessary background to a discussion of Cantonese phonology.

1. BACKGROUND

The phonological system of MC which will be assumed here is the system argued for in Chen (1976a: 128-130) and called there 'Simplified Middle Chinese'. MC vowels are shown in (1a).

(1a) MC vowels

<table>
<thead>
<tr>
<th>i</th>
<th>y</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>ø</td>
<td>o</td>
</tr>
<tr>
<td>a</td>
<td>a</td>
<td></td>
</tr>
</tbody>
</table>

(•) I am grateful to Matthew Chen for comments on an earlier draft of this paper.

Cahiers de Linguistique Asie Orientale Vol. XII N°1 Juin 1983, pp.65-79
Except for a marginal contrast in some Wu dialects, MC *e is not distinguishable from MC *ia (similarly, MC *ue is not distinguishable from MC *ya)(1). Also, *y functions only as an onglide. This leaves (1b) as the MC system of vocalic nuclei relevant to the present discussion.

(1b) MC vowels (simplified)

\[ i \quad e \quad u \]
\[ o \quad a \]

The modern Cantonese vowels are displayed in (2).

(2) Cantonese vowels

\[ i, y \quad u \]
\[ \varepsilon, \varnothing \quad \varnothing \]
\[ a: , a \]

All three high vowels also function as glides. (2) shows the necessary phonemic contrasts among vowels but does not indicate the more detailed phonetic and allophonic characteristics. There are, for example, tense and lax varieties of \( i, \varepsilon, u, \) and \( \varnothing, \) the tenseness or laxness being allophonically determined. Hashimoto (1972) provides a full account of such phonetic detail. It might also be noted that the long and short contrast between the low vowels is accompanied by distinct tongue positions. Hashimoto represents the long vowel as a retracted [A:] and the short one as a central [a]. Since the main source for the modern Cantonese forms referred to in the present discussion is Zì-huì, the Zì-huì convention will be followed, whereby these contrasting vowels are represented as \( a: \) and \( a. \) Zì-huì coincides in this respect with the systematization of the Cantonese vowels in Chao (1947).

In what follows, we will be concerned with the segmental level and all suprasegmental facts about MC and modern Cantonese will be disregarded. There have been important tonal developments (the split into high and low registers, a high/mid split in tone 4 words), but these changes have no bearing on the evolution of the Cantonese vowels(2).

---

(1) An asterisk will be used to indicate a MC reconstruction.

(2) Tonal factors can, however, condition consonantal changes. For example, MC voiced initial stops and affricates became aspirated in tones 1 and 2, but not tones 3 and 4, as discussed in Chen and Newman (to appear).