

## **“Rule-Replacement” in Lingít: The Importance of Morphosyntax to Morphophonology**

### **1. Introduction**

Within Lingít (Tlingit), a Na-Dene language of Alaska and British Columbia, the phonological exponents of perfective aspect and subject agreement are often “combined” with surrounding prefixes into a single portmanteau morph. Under certain conditions, some portmanteau morphs in this system are “replaced” by special forms. I present an analysis of this system of portmanteau allomorphy whose unique advantages rest upon the existence of Fusion operations (Halle & Marantz 1993). Besides their providing support for the existence of Fusion operations, the advantages of the proffered analysis demonstrate the importance of morphosyntax to apparent problems of morphophonology. If one looks beyond the “phonological appearance” of a system, and considers instead the morphosyntactic features expressed, one can sometimes see generalizations and connections that are otherwise hidden.

### **2. The Basic System of Allomorphy and the Initial Proposal**

The targeted patterns of allomorphy may be described by the rewrite-rule system in (1). A natural question is whether the system in (1) cannot be simplified, perhaps by viewing the more complex alternations (1c,g) as compositions of the simpler ones (1a,b,d,f). I demonstrate that further simplification of this system is impossible if the alternations are construed as purely phonological. The complex rule (1c) cannot be derived by some composition of (1a, b, d, f), and there is no more compact phonological description of the distribution of the morpheme *yeey*. However, it is possible to decompose many of the alternations in (1) if they are based in syntactic Fusion operations occurring prior to phonological Spell-Out, a view possible only within models of morphology which embrace Separation (Anderson 1992, Beard 1995, Halle & Marantz 1993). In this context, note that the morpheme *yeey* seems to have the heterogeneous distribution of an underspecified “elsewhere” morpheme.

It is shown that the system of Fusion rules in (2) and the Vocabulary Insertion rules in (3) are sufficient to capture the allomorphy in (1). Sample derivations of alternations (1a, c, g) are provided in (4). This system has the interesting property that a ‘left-to-right’ application of SpellOut is often required to derive the correct output forms. Given the evidence that the prefix string in a Na-Dene verb is leftward branching (Rice 2000), this suggests that Spell-Out proceeds bottom-up, as defended by Bobaljik (2000).

### **3. “Rule-Replacement” in the Portmanteau Allomorphy**

A puzzling complication to this analysis arises from the fact that certain of the alternations in (1) are suspended in particular morphosyntactic contexts. In particular, (1a) and (1c) are replaced with alternations (5a) and (5b), respectively, whenever the conditions in (6) obtain. A natural question is why rules (1a) and (1c) should be all and only those affected by the environments in (6). A phonological construal of these alternations has no forthcoming answer; neither the rules (1a, c) nor the environments in (6) constitute a phonologically natural class. On the other hand, our Fusion-based analysis of (1) can provide an interesting answer. It is shown that a single amendment to the Fusion rules in (2) would derive the “rule-replacement” in (5) and (6). The amendment in (7) requires that Fusion rule (2b) be suspended under certain conditions, essentially the conditions stated in (6). Since alternations (1a) and (1c) are the only ones truly dependent upon Fusion rule (2b), this analysis explains why they should form a class, why only they are suspended under the conditions in (6). Furthermore, the Fusion-based analysis can derive both alternations (5a) and (5b) by means of a single, natural rule of glide deletion applied to the forms output by the amended system when rule (2b) is suspended. These are unique analytic advantages of the Fusion system in (2), and they are what primarily motivates it over the “phonological” conception of the alternations in (1).

### **4. Conclusion**

It is only within a Separation model of morphology employing Fusion operations that the Lingít allomorphy in (1) can be further analyzed, and the “rule-replacement” described in (5) and (6) made sense of. Thus, these phenomena provide interesting, original support for the existence of Fusion operations. Moreover, the portmanteau allomorphy of Lingít provides a particularly striking object lesson in the relevance of morphosyntax to morphophonology. It is only when one considers the calculus of morphosyntactic feature combination underlying the system in (1) that the hidden logic of the “rule-replacement” in (5) and (6) reveals itself.

(1) Coalescence Phenomena (adapted from Story 1966, Leer 1991)

Morphemes Involved:

*wu* 'perfective'  
*ee* 'second person singular subject'  
*ya* 'null series classifier, +I, -D'<sup>2</sup>  
*yi* 'second person plural subject'  
*Ci* '(any) non-null series classifier, +I'<sup>3</sup>

Rewrite Rules:<sup>1</sup>

a. *wu* + *ya* → *woo*  
 b. *wu* + *ee* → *yi*  
 c. *wu* + *ee* + *ya* → *yee*  
 d. *yi* + *ya* → *yeey*  
 e. *yi* + *Ci* → *yeeyCi*  
 f. *wu* + *yi* → *yeey*  
 g. *wu* + *yi* + *ya* → *yeey*

- (2) a. If [ Perf ] & [ AgrS , 2<sup>nd</sup> ] are directly adjacent, they are Fused  
 b. If [ Perf ] & [ null , +I , -D ] are directly adjacent, they are Fused  
 c. If [ AgrS , 2<sup>nd</sup> , pl ] & [ null , +I , -D ] are directly adjacent, they are Fused

- (3) a. [ Perf , 2<sup>nd</sup> , sg , null , +I , -D ]    □    / yee /  
 b. [ Perf , 2<sup>nd</sup> , sg ]    □    / yi /  
 c. [ AgrS ]    □    / yeey /  
 d. [ Perf , null , +I , -D ]    □    / woo /

- (4)    [ Perf ] [ null , +I , -D ]    FUSE, by rule (2b)  
       [ Perf , null , +I , -D ]    SpellOut, by rule (3d)  
       / woo /

[ Perf ] [ AgrS , 2<sup>nd</sup> , sg ] [ null , +I , -D ]    FUSE, by rule (2a) [no others apply]  
 [ Perf , AgrS , 2<sup>nd</sup> , sg ] [ null , +I , -D ]    FUSE, by rule (2b) [no others apply]  
 [ Perf , AgrS , 2<sup>nd</sup> , sg , null , +I , -D ]    SpellOut, by rule (3a)<sup>4</sup>  
 / yee /

[ Perf ] [ AgrS , 2<sup>nd</sup> , pl ] [ null , +I , -D ]    FUSE, by (2a)  
 [ Perf , AgrS , 2<sup>nd</sup> , pl ] [ null , +I , -D ]    FUSE, by (2c)  
 [ Perf , AgrS , 2<sup>nd</sup> , pl , null , +I , -D ]    SpellOut, by (3c)  
       / yeey /

- (5) a. *wu* + *ya* → *uwa*  
 b. *wu* + *ee* + *ya* → *iya*

- (6) a. The verb is a member of the 'first conjugation'.  
 b. The perfective is directly preceded by an incorporated noun.  
 c. The perfective is directly preceded by one of the following object agreement prefixes:  
     2<sup>nd</sup> singular (*i*), 2<sup>nd</sup> plural (*yee*), 4<sup>th</sup> person (*ku*), 3<sup>rd</sup> obviative (*a*).

- (7) The Fusion rule in (2b) does not apply if [ Perf ] is adjacent to:  
     (i) [ -Topic ] ; (ii) [ Conj 1<sup>st</sup> ]

<sup>1</sup> These rules are understood to apply when the morphs in question are directly adjacent.

<sup>2</sup> For explanations of the terms 'null series', 'non-null series' '+/-D' and '+/-I' in the context of Lingít verbal classifiers, see Leer (1991; section 4.1.1).

<sup>3</sup> This description encompasses the following classifiers: *si*, *dzi*, *li*, *dli*, *shi*, *ji*

<sup>4</sup> Rule (3d) does not apply because of the ordering of the Vocabulary Rules in (3) (Halle & Marantz 1993).