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PHONOLOGY IN THE BASILECT: THE FATE OF FINAL CONSONANTS IN LIBERIAN INTERIOR ENGLISH*

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Pidginized Liberian Interior English (LIE) has English as its lexifier language and Mande languages as its substrate. Broadly speaking, this means that LIE takes its lexicon from English and its phonology from Mande. However, the structure of English words clashes with Mande syllable structure conditions, particularly with regard to word-final consonants. To resolve this conflict, LIE has in some cases restructured the English words and in others created phonological rules to make underlying English forms more Mande-like on the surface. These rules include paragoge (for verbs only), resyllabification, and deletion. In the present study, a variable-rule analysis of LIE performance data identifies the crucial linguistic and social factors that bear upon rule choice, thereby making possible a linguistic assessment of regularities in the rules' distribution.

1. Introduction

Whatever the controversy about the nature and extent of substratal influence upon pidgin/creole syntax, there is a general recognition that substratal influence upon pidgin/creole phonology is pervasive and profound. Certainly this influence exerts itself at the level of broad phonotactic principles, as in the case of restrictions on syllable and word structure. In cases where the substrata's

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principles are incompatible with those of the lexifier language, the pidgin/creole creates phonology that will reconcile the two sources. Sometimes this is accomplished by adjusting the syllable structure conditions (SSC's) that operate upon underlying forms; in these cases, substrate-influenced SSC's cause items in the lexicon to be restructured. In other cases, the pidgin/creole phonology innovates, coming up with rules that push surface representations into greater conformity with the substrate.

The fate of word-final consonants in Liberian Interior English (LIE) illustrates the use both of diachronic processes and synchronic rules to bring English-lexifier items closer to Mande phonotactics. It is this "Mande-cization" of English words that forms the basis for the present study.

1.1. Liberian Interior English and its Mande substrate languages. A pidginized form of English arose in Liberia in the eighteenth century. This variety is referred to as Kru Pidgin English [Hancock 1971, Singler 1981]. The name reflects not only its use by the Kru mariners who plied the West African Coast but also the Kru substratal influence upon the pidgin [Singler 1988]. Subsequently, a second pidgin developed in Liberia. Early in this century, the Liberian government set out to establish military and political control of the country's interior. The tactics used by the Liberian Frontier Force to accomplish this were so harsh that many young men availed themselves of one of two opportunities to escape. One method was by migrating to the coast to work at the Firestone rubber plantation; the other was by joining the Frontier Force itself. As the plantation and the Frontier Force came to be dominated by first-language speakers of Mande languages, a *re*pidginization of Kru Pidgin English seems to have occurred in these places. Thus, LIE was born. LIE is distinct from KPE in several ways, e.g. tense-mood-aspect (cf. Singler [1987, 1990]). Then, when the Mande-dominated Frontier Force spread throughout the Mande-speaking interior and the rubber tappers returned home (to this same region), LIE took root.

Five Mande languages comprise LIE's substrate. Welmers [1971] divides Mande into two branches: Northern-Western and Southern-Eastern. The Liberian Mande languages that form the substrate for LIE come from the Southwestern (a part of Northern-Western) and Southeastern (a part of Southern-Eastern). Kpelle, Loma, and Bandi are Southwestern; Mano and Dan (Gio) are Southeastern. Despite the distant relationship of Southwestern to Southeastern, the longtime physical proximity of the five languages in question means that they share many areal features (cf. Dwyer [1975]).

Of these five languages, Kpelle permits a tautosyllabic final nasal, /ŋ/. All other syllables in Kpelle must end with a vowel. The other four languages do not even have the tautosyllabic nasal. In these languages, *every* syllable must end with a

vowel.[1] Given the frequent final consonants and final consonant clusters of English, the issue at hand is how LIE reconciled—and continues to reconcile—English words with Mande principles of syllable structure.

1.2. The reduction of word-final clusters. The diachronic part of the LIE solution has been a compromise between Mande and English: at the phonemic level in LIE, syllable-final consonant clusters are not permitted, but single syllable-final consonants are. The reduction of English final clusters has been effected in several ways. These are set forth in (1).[2] Like Mande, LIE has phonemic nasal vowels, and in the case of clusters of the final type in (1) the vowel preceding the cluster has become phonemically nasal.

(1) **English cluster**	**becomes**	**LIE**	**Example**	
fricative + stop		fricative	*/as/*	'ask'
liquid + obstruent		obstruent	*/bed/*	'build'
nasal + */t/*		nasal	*/wɔn/*	'want'
nasal + any other obstruent		obstruent	*/tẽk/*	'think'

1.3. Word-final consonants in LIE. Unlike the Liberian Mande languages, LIE does permit phonemic syllable-final consonants. However, LIE has devised phonological rules that minimize the occurrence of these syllable-final consonants on the surface. In some sense, LIE has English (or English-like) underlying representations; phonological rules then alter these representations on their way to the surface to render them more Mande-like. Presumably the English underlying representations continue to obtain because LIE is part of a continuum, one whose upper range is in constant contact with English. (The creole continuum is a model set forth by DeCamp [1971] to characterize situations where the creole continues to be in contact with its lexifier language and where a progression of speech varieties obtains intermediate between the creole and the local standard variety of the lexifier language. While the speech community encompasses the entire continuum, an individual speaker ordinarily commands a subset of it. Singler [1984] shows the applicability of this model to the Liberian situation.)

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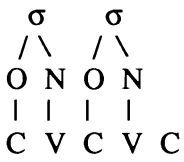
[1]As noted above, I assert that LIE represents a repidginized form of KPE, with the repidginization having been carried out by first language Mande speakers. If speakers of Kru languages were also involved in the repidginization that yielded LIE, this would mean that Kru languages played a more direct role in the formation of LIE than I have assumed. For the present study this difference in assumptions about the history of LIE has little impact: the relevant Kru languages (in particular, Bassa and Klao) are like the relevant Mande languages in their strict avoidance of syllable-final consonants.

[2]English post-vocalic *r* never obtains in LIE. Thus, for those speakers who use the *-ɛ̃* (< *ing*) suffix, the suffixed form of *ɛ̃ta* 'enter' is *ɛ̃taɛ̃*. Because post-vocalic *r* is never present on the surface, it can be assumed that it is not present underlyingly either.

Clearly the preferred syllable structure in LIE is one that is vowel-final, but LIE has various ways of dealing with word-final consonants. Thus, when a word has the structure of the type given in (2), several different strategies can be employed to yield the preferred structure:

(2)


Given the structure in (2), there is also the question of how LIE treats syllable-initial clusters. In the present study I will concern myself with these only to the extent that they bear upon the treatment of word-final consonants. It should be noted, however, that except when two obstruents are involved, e.g. */st/*, initial clusters appear to be less problematic. That is, they have for the most part been accepted into LIE.

To return to the question of how LIE can deal with the "stranded" word-final consonant in (2), one possibility involves the construction of a syllable to go with the leftover consonant. This involves a rule of *paragoge*, one that inserts a mid-front vowel, e.g. */tek/* [*teke*] 'take'. Another solution brings in the first syllable of the following word. If that syllable has an empty consonantal slot, then *resyllabification* can occur, as when */tek ewe/* 'take away' becomes [*te*$*ke*$*we*]. A third strategy is simply to *delete* the "left-over" consonant, e.g. */tek/* [*te*]. Note that these three processes, each quite distinct from the other two, all succeed in yielding the preferred syllable structure. It is only when none of the three are invoked that the preferred structure is not attained.

For word-final voiceless stops, there is an additional alternative: the stop can become a glottal stop, e.g. [*te?*]. This option, discussed below, occurs only infrequently in the present corpus. While it is a highly reduced consonant, a glottal stop is a consonant nonetheless and fills a slot in the CV tier. That is, changing a voiceless stop to a glottal one may somehow reduce the saliency of the leftover consonant, but it does not do away with the consonant.

The present study examines the strategies that speakers of basilectal LIE use to prevent word-final consonants from reaching the surface.[3] Given the range of

[3]The terms "basilect", "mesolect", and "acrolect" were coined by William Stewart. In the creole continuum, the basilect is the variety furthest from the standard/lexifier language, the acrolect is the variety closest to it, and the mesolect spans the range intermediate between basilect and acrolect. Although the original designation suggests that the basilect and acrolect are extreme points, common usage has extended them. Basilect now refers to the range of varieties (rather than a single variety) furthest from the standard language. Thus, LIE, which is basilectal, is not homogeneous. There is a range inside it, from an extreme that is furthest from standard to varieties that move closer to the mesolect. The kind of variation to which I refer is made obvious in the discussion that follows.

choices that are available, the central question must be this: which factors favor consonant deletion, which paragoge, which resyllabification, and which none of these? In the corpus the rule of paragoge is limited to monosyllabic, consonant-final verbs.[4] Accordingly, the present examination will be confined to monosyllabic consonant-final verbs. (For reasons to be outlined below, only verbs whose final consonant is oral have been included in the data set.) Beyond those specifications on the rule of paragoge, all of the relevant rules are fundamentally variable. In order to go beyond the simple statement that these rules are optional, I will employ a quantitative analysis to get at the nature of the variation, making use of the VARBRUL statistical program [Cedergren and Sankoff 1974, Rousseau and Sankoff 1978].

1.4. Loma phonology. The present study focuses on the LIE of speakers whose first language is Loma. As mentioned above, Loma is one of the Liberian Mande languages that require that every syllable be vowel-final. According to Sadler [1951:19], the "predominant basic word pattern for nouns, adjectives, and verbs is CVCV" in Loma. Other possible patterns are CV, CVV, and CVVCV ("common with nouns and verbs, but uncommon with adjectives"), and CVVV, CVVCVV, and CVCVV ("seldom found"). Further, "[a]dverbs and other word classes have patterns limited to two syllables, with CV [syllables] predominating" (p. 19). The only word classes that permit vowel-initial words are pronouns and conjunctions.

It should be pointed out that Loma has contrastive vowel length. Thus, in Sadler's characterization of basic structures, a VV sequence frequently refers to a single long vowel.[5]

With regard to consonant clusters, Sadler states, "CC is limited to word-beginning, and is used only with nouns, adjectives, and verbs" (p. 19). His examples all involve a velar stop followed by a /*w*/, e.g. *gwála* 'big'. In other cases, words that Sadler transcribes as, for example, [*bóa*] 'knife' or [*púa*] 'poured' frequently approach monosyllabic status in actual speech, e.g. [*bwá*] and [*pwá*] (p. 316). Further research is needed to determine whether this reduction in

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[4]French Soldier, one of the speakers in this study, does use paragoge with *du* 'do', as in (i):

(i) *ɔdawa, wa hi wɔn tu du, i we dui dat wɔn bifɔ.*
otherwise what he want to do he will do that one before
'Otherwise, whatever he wanted to do, that's what he used to do.'

However, French Soldier seems to be alone in doing this, and he seems to do it only with *du*. The one principled exception to the statement that the rule of paragoge is limited to verbs involves *wɛne* 'when' and *efe* 'if', both of which frequently undergo paragoge.

[5]Sadler [1951:20] comments that "CVV and CVVV patterns are often the result of a lost consonant." Elsewhere, he elaborates, "With the exception of /*ɔɛ*/, all non-identical VV combinations ending in a vowel other than /*i*/ are undoubtedly the result of a lost consonant" (p. 315). Sadler also presents synchronic examples of the deletion intervocalically of glides /w,y/ and the voiced velar fricative /*ɣ*/. (In addition, he presents a rule that converts the sequence VVV to VyV, e.g. /*kóia*/, [*kóya*] 'monkey' (p. 316). Though Sadler does not say so, one can assume that the medial vowel has to be a front vowel for this rule to obtain.)

syllabicity obtains only for the sequence of a back vowel followed by a non-back one and only when the two are preceded by a velar, labial, or labio-velar consonant.

Dwyer's [1981] dictionary is like Sadler's grammar in listing several words that contain *kw* and *gw*.[6] Dwyer also lists some loan words that begin with the CC sequence *fl*, e.g. *flá wáí* 'flour' (p. 123). Though neither Sadler nor Dwyer mentions it, the *fl* sequence is part of a larger pattern within Liberia's Mande languages. That is, Welmers notes the presence of "extra short vowels" between word-initial obstruent-liquid clusters in Kpelle [1973:26]. He then notes that, in doing fieldwork on Dan, his "early transcriptions showed consonant clusters including *pr, tr, kr, pl, kl.*" However, "[t]one patterns require the presence of a vowel in all of these cases", a vowel identical to the one that follows the liquid. Thus, Welmers ultimately posits an underlying vowel between the consonants in Dan and also in Kpelle. Loma shares the "extra-short vowel" phenomenon with the other Mande languages. One illustration of this is the fact that the name *fólómó*, widespread in Loma society, is ordinarily spelled <Flomo>.

An additional point about Loma is that it has neither palato-alveolar fricatives nor affricates.[7] LIE—like Liberian English generally—does have word-initial affricates; however, in other positions, these affricates are usually realized as [š] e.g. [*riš*] reach.' While /*s*/ and /*š*/ are best analyzed as separate phonemes in LIE, /*š*/ is often realized as [*s*], particularly when the phoneme occurs other than word-initially. (Less often, /*s*/ is realized as [*š*]) In the present corpus there are twenty tokens of *catch, reach,* and *teach.* Of the fifteen instances where a final consonant is realized (either with or without a paragogic vowel), that consonant is [*s*] three times, [š] ten times, and [č] twice. (There are no instances in the corpus of a verb whose English counterpart ends in /*š*/.) Given both the low numbers of verbs ending with English /*č*/ and the "slipperiness" of non-word-initial palato-alveolar sibilants vis-a-vis alveolar ones, I have combined /*č*/, /*š*/ and /*s*/ in the discussion that follows.

1.5. The data sample. The present corpus comes from seven interviews conducted in Borkeza, Gizima District, Lofa County, Liberia, in 1981 and 1985 by Sumoyea Guluma, a Western-educated Loma speaker. Guluma himself was born in Borkeza and grew up there. The seven men whom Guluma interviewed are all retired rubber tappers and/or soldiers. The job histories are summarized in Table 1; individual elders are given pseudonyms based on the jobs that they held.[8]

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[6]Dwyer also has one example of a CyV word: /*kpỹi* / 'worm'.

[7]Loma and LIE also lack interdental fricatives; however, there are no verbs in the present corpus whose English counterpart ends with an interdental fricative.

[8]Though the principles underlying the recorded conversations were those set forth in Labov [1972], i.e. principles aimed at eliciting maximally vernacular (informal) speech, it should be pointed out that in actual fact the relationship between interviewer and interviewee was often rather hostile. How does this affect the output that is under study in the present case? It is

Table 1: The data base.

Pseudonym	Tapper	Soldier	Other Occupation
Blaster	Yes	No	Detonator at iron ore mine
Bottlepicker	Yes	No	Warehouse worker in Monrovia
French Soldier	Yes	*	
Overseer	Yes	Yes	
PFC	No	Yes	
Tailor	Yes	No	
Tapper	Yes	No	

*(French Soldier served a three-year stint in French West Africa.)

The elders vary in their work experiences, from Blaster and Bottlepicker, who held jobs beyond the rubber plantation and the barracks, to Tapper and Tailor, whose only participation in the cash economy was as rubber tappers. Of the other three men, PFC is alone in never having worked as a tapper. Overseer served briefly in the Frontier Force but worked for twenty-five years at Firestone, serving as a tapper for many years before eventually rising to the position of overseer, i.e. foreman. Similarly, French Soldier did other work at Firestone in addition to being a tapper. The job that he held for the longest time there was as a watchman for an office. It should be noted that the job of rubber tapper is an arduous one; its grueling labor and low pay make it a position of very low status.

A portion of each interview was selected at random so that it would yield 75 monosyllabic oral-consonant-final verbs. These verbs form the basis for the present study.

1.6. On ordering and variable rules. Each of the three processes under study—paragoge, resyllabification, and deletion—bleeds the other two.[9] (If paragoge or deletion were obligatory, it would bleed the other two rules absolutely.) For example, once paragoge has operated, the word-final consonant is no longer word-final. Consequently, it is no longer eligible for linking via resyllabification to a following syllable nor for final-consonant deletion. Because of the bleeding-bleeding relationship that obtains among each pair of these three rules, it is

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argued below that paragoge carries a social stigma. This suggests that the lack of sympathy between interviewer and interviewee would make the interviewee less likely to use a socially stigmatized rule. Thus, it can be predicted that the level of paragoge in the present data is lower than would obtain in truly vernacular speech. It is not clear to me how the rate of occurrence of the other rules in question would be affected.

[9]The focus in §1.6 is on paragoge, resyllabification, and deletion. However, the points made in this section with regard to ordering and to variable-rule input apply equally to glottal-stop formation. This rule's relationship with each of the other three rules is in every case a bleeding-bleeding one.

necessarily the case that a given surface form has undergone at most one of the three rules.

In order to carry out a variable-rule analysis, it is necessary to establish the input and output of a given variable rule. In the present case, given the strict bleeding relationships, the output is readily determined. The forms that can be said to have undergone paragoge, for example, are all and only those forms that show up on the surface with a paragogic vowel.

While establishing the output for each rule is straightforward, establishing the input is not. For example, if paragoge is ordered before deletion, resyllabification, and glottal-stop formation, then its input consists of all the forms under consideration. But if deletion is ordered before paragoge, then the input for the rule of paragoge consists of all forms except those that show up on the surface with the consonant deleted. Similarly, if deletion and resyllabification are both ordered before paragoge, the input for the rule of paragoge now consists of all the forms except those that show up on the surface with the consonant either deleted or resyllabified. Statements like this can be made about each of the rules. Given the bleeding-bleeding relation between each pair of rules, there is no clear way to establish the sequential ordering of the rules.

The practical problems presented by the inability to establish a sequential ordering for these rules do not prove critical. Inasmuch as the output is always the same regardless of the linear order, the variable-rule results tend not to vary much when different inputs are attempted. For example, for the rule of resyllabification, following grammatical environment (the syntactic category of the word that follows the verb) is the factor group that shows greatest statistical significance regardless of whether resyllabification is considered as having applied to all forms, or is instead assumed to have occurred after paragoge, i.e. as having applied only to those forms that failed to undergo paragoge.

Sankoff and Rousseau [1989] draw on principles from the study of probability to promote alternatives to strict linear ordering in the analysis of performance data. Though the present data and rules differ fundamentally from those that Sankoff and Rousseau examine, the latter's point is readily extended. Accordingly, rather than advocating a specific linear order (whose ability to be falsified is in doubt), I have analyzed each rule as if it had maximal applicability. And, while the rules of resyllabification and glottal-stop formation have restricted domains, maximal applicability is assumed within those domains. (Still, there is some evidence for particular ordering relations, and I will introduce it where relevant below.)

A further point to be considered about the study at hand is whether it is legitimate to assume in the case of word-final consonants not present on the surface that they are present underlyingly. It has already been pointed out that LIE has reduced the word-final clusters of English. Further, as fn. 2 makes clear, English postvocalic /r/ has disappeared, both phonetically and phonologically, from LIE. What about other word-final consonants? That is, is it always the case that the consonants at hand have undergone a rule of deletion, or are some of these

consonants simply not present underlyingly? The 525 tokens in the corpus represent 67 different verbs. Of these, 59 verbs are represented at least once in the corpus by a form that shows the stem-final consonant (via paragoge, via resyllabification, or via resistance to all rules). This means that for these 59 verbs some if not all of the speakers in the group have the final consonant in their underlying representation of the verb.

The eight verbs that never show up with the consonant on the surface in the corpus are given in Table 2, with the number of tokens of each listed after it:

Table 2. Verbs whose final consonant does not appear on the surface

		n			*n*
stil	'steal'	15	*brek*	'break'	2
muv	'move'	4	*rog*	'steal'	1
tɛ̃k	'thank'	3	*spɔl*	'spoil, break'	1
hɛt	'hurt'	2	*tas*	'cover with thatch'	1

Of the verbs in Table 2, five *(muv, brek, rog, spɔl,* and *tas)* show up elsewhere in the recorded interviews with the final consonant pronounced.[10] LIE has a verb suffix, -ẽ, discussed below. For *stil, tɛ̃k,* and *hɛt* (the three verbs in the data sample that do not show up in the interviews with the final consonant at any time), the suffixed form in LIE speech shows the final stem consonant, i.e. *stilẽ* 'stealing,' *tɛ̃kẽ* 'thanking,' and *hɛtẽ* 'hurting'. Thus, apart from the fact that LIE has reduced verb-final consonant clusters to a single consonant and apart from the special case of *r*, LIE has final consonants everywhere that English does—at least for verbs. This may not be true for other parts of speech. For verbs, after all, there is an alternation between bare and inflected verb forms, even if the suffixed form is not used frequently. The stem-final consonant occurs between vowels in the inflected form; as a result, it is not ordinarily subject to deletion there.

In §2 I present each of the rules that apply to word-final consonants, in each case focussing on those of the rule's properties that are not subject to variation. Then in §3 I examine those factors that influence variation, specifically the factors and factor groups that promote or inhibit a particular rule's application.

2. Phonological Rules

2.1. Paragoge. The rule of paragoge adds a mid front vowel to a monosyllabic consonant-final verb.

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[10]In the case of *rog* and *tas*, it is tokens of the cognate noun of each that show the final consonant; there is no reason to assume for either word that the noun form differs underlyingly from the verb form.

LIE, like Atlantic pidgins and creoles generally, has few suffixes. As mentioned, it does have a verb suffix, -ẽ. Its source is English *-ing*, and it often signals progressive/continuous meaning. However, in the basilect there are times when -ẽ seems to add no clear element of meaning to the verb it marks, a point discussed in Singler [1984, 1987] and illustrated by the examples in (3) and (4). In (3) the suffixed verb is an infinitive; in (4) it is unambiguously punctual.

(3) *wia õ sɛ, wi tra tu mekẽ di klo.*
our own self we try to make the clothes
'We ourselves, we tried to make our clothes.' (Tapper)

(4) *dẽ de gev me, de fesẽ pepa, "da yu."*
then they give me they fix paper that you
'Then they gave me a paper, they fixed it and said, "It's yours."' (PFC)

(While the addition of a vowel via paragoge is confined to cases where the verb is monosyllabic and consonant-final, suffixal -ẽ can occur with multisyllabic verbs and with vowel-final ones.)

Thus, LIE has a phonetically motivated rule of paragoge that adds the oral vowel [e] and a grammatically motivated process of suffixation that adds the nasal vowel /-ẽ/. It could well be that some of the time the presence of a nasalized vowel on the surface actually constitutes paragoge rather than suffixation. Indeed, in cases where the motivation for the nasalized vowel is uncertain, it is possible that it represents camouflaged paragoge. After all, while -e is stigmatized, -ẽ is not. (On the other hand, in the absence of any evidence in LIE for a widespread rule of denasalization, I assume that every oral vowel that shows up at the end of a consonant-final verb is an instantiation of paragoge.) Whatever distinction there is between paragoge and suffixation, it collapses when the verb ends with a nasal consonant. There is a low-level phonetic rule in LIE such that an oral vowel in a nasal environment becomes nasalized. A surface form like [*kõmẽ*] 'coming/come/came' can either be monomorphemic or bimorphemic underlyingly, either /*kɔm*/ plus paragoge or /*kɔm*/ plus verb suffix. In light of this ambiguity, I have confined the investigation of variation in paragoge to non-nasal environments. All verbs whose final consonant is nasal have been excluded from consideration.[11]

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[11]With regard to the larger question of word-final consonants, it should be noted that a rule that combines vowel nasalization with nasal-stop deletion applies variably to all nasal-final words in LIE; it is presented in (i):

(i) **Vowel Nasalization/Nasal Stop Deletion**

V	N	#				
1	2	3	⇒	1	Ø	3
				[+ nas]		

2.2. Resyllabification. Paragoge retains the verb-final consonant (so that no part of the signal is lost) in a way that is consistent with Mande phonotactics. This can be said of resyllabification as well, with the difference that its applicability is limited. While paragoge is an option any time that a monosyllabic verb ends with a consonant, resyllabification can only occur when the following syllable has an empty site for a consonant. Thus, it can apply to */tek ewe/*, 'take away', yielding [*te*$*ke*$*we*], but not to */tek dan/* 'take down,' [**te*$*kd̃ã*].

The motivation for resyllabification can be found in Clements and Keyser's [1983] Onset First Principle, particularly in its first half:

(5) **Onset First Principle**

a. Syllable-initial consonants are maximized to the extent consistent with the syllable structure conditions of the language

b. Subsequently, syllable-final consonants are maximized to the extent consistent with the syllable structure conditions of the language in question (p. 37).

When there is a word-final consonant in LIE and an available C slot in the first syllable of the following word, what is required is a *re*syllabification across word boundaries. That is, the word boundary is dropped and the Onset First Principle re-invoked.

In the discussion that follows, I will explore the types of resyllabification that are possible. First, however, it is appropriate to consider the special nature of resyllabification as a process. That is, in the case of paragoge or deletion, there is a change in segments. One of these rules adds a segment, and the other deletes one. In the case of resyllabification, there has been no such change, no such ready sign of the operation of a rule. In determining whether or not resyllabification has occurred in a given instance, except where it is impressionistically clear that resyllabification has *not* taken place, I have taken the retention of the consonant on the surface as evidence of some sort of link to the following syllable. In many

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This rule operates most often when the nasal is */n/*, less often when it is */m/* or */ŋ/*. A further point relevant to paragoge is that, in relative clause constructions where the direct object of the clause is its head, LIE frequently inserts a resumptive pronoun (cf. Singler [1988]). When the appropriate pronoun is *e* 'it', it is frequently not possible to tell whether the vowel that follows the verb represents a resumptive pronoun or an instance of paragoge. The sentence in (ii) illustrates this.

(ii) *di mɔne, di pravɛ, di wɔn wa de kɔle/kɔl e pɔ̃gala, da fɔ dala.*
the money the private the one what they "calli"/call it *pɔ̃gala,* that four dollar

'The salary, for a private, the amount they call "pohngala" [in Loma], that's four dollars a month.' (Overseer)

In order to avoid ambiguity of this sort, I have removed from the data sample tokens where the DO has been fronted (whether a paragogic-vowel/resumptive-pronoun shows up after the verb in question or not).

cases, the resyllabification is perceptually (impressionistically) distinct. In others, the consonant has become ambisyllabic.[12] Regardless, if the consonant is still present and not obviously and only linked to the preceding syllable (as a syllable-final consonant), then I have considered that token to count as an instance of resyllabification. It is possible that what I am calling resyllabification may in some cases be instances where an active resyllabification has not actually taken place but where, instead, deletion has been blocked (still, I would argue, as a consequence of the following phonological environment). While such tokens are clearly in the minority, I do not mean to suggest that they do not exist.

Sometimes a verb-final consonant is followed by a consonant identical to it, e.g. */mek kɔ̃tri mɛdɛsɛn/* 'make traditional (country) medicine'. When paragoge does not occur in such an environment, it is generally not possible to characterize the fate of the verb-final consonant. That is, it is not possible to tell whether it has been subject to deletion, resyllabification, or some type of merger with its twin. Accordingly, for all rules other than paragoge, I have removed from consideration those tokens where what follows the verb phonologically is a consonant that is identical to the verb-final consonant (or is identical to it in everything but voicing).

Of the various environments in which resyllabification is possible, the most important is one in which the following word begins with a vowel. Given that Loma essentially requires lexical items to be consonant-initial, it would seem that resyllabification would be doubly desirable in LIE, that is, it both removes a syllable-final consonant and provides a syllable-initial one.

Of the syllable-initial consonant clusters permitted by English, the following are relevant here:

/*s*/ + nasal
/*s*/ + /*p, t, k*/
obstruent + liquid
obstruent + glide

As noted in §1.4, Loma permits some velar-glide clusters, and the Liberian Mande languages in general "almost" have obstruent-liquid ones. On the other hand, there seems to be no basis in Loma for either the /*s*/-nasal or obstruent-obstruent (/*sp*/, /*st*/, /*sk*/) clusters.

In addition to these types of resyllabification, another one is possible, one involving a word-final voiceless stop followed by a word-initial /h/. In this case the stop takes over the position occupied by the /*h*/.

The types of resyllabification and an example of each are presented in Table 3.

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[12]In general, there is no parallel in LIE for the widespread ambisyllabicity of intervocalic consonants in American English (cf. Kahn [1976]). This fact about LIE is consistent with the variety's overall avoidance, wherever possible, of consonants in syllable-final position.

Table 3. Resyllabification: Sequences of verb-final consonant and following segment.

	Verb-final consonant	First segment of following word	Example	
a.	stop	vowel	*tek ɛni*	'take any'
b.	fricative	vowel	*lev ɛ̃*	'live in'
c.	liquid	vowel	*kel ɛni*	'kill any'
d.	/s/	nasal	*as mi*	'ask me'
e.	/s/	stop	*lɔs de*	'lost a day'
f.	obstruent	liquid	*kuk ras*	'cook rice'
g.	obstruent	glide	*wep yu*	'whip you'
h.	stop	/h/	*bit hĩ*	'beat him'

2.3. Deletion. The most straightforward of the rules is deletion. It is blocked from occurring when the verb-final consonant is /*p*/.[13] Otherwise, it is without complication.

2.4. Glottal-stop formation. In addition to the rules already listed, there is a rule that changes a word-final consonant into a glottal stop.

In examining this rule of glottal-stop formation, I have limited consideration to those cases where the verb occurred non-prepausally. When a word-final consonant is in prepausal position and is not realized, it is usually not possible to determine whether the "absent" consonant has been deleted or has been converted to a glottal stop. There are 39 "absent" prepausal consonants in the corpus; I have counted them all as having undergone deletion (rather than glottal-stop formation).

For all practical purposes, in the present corpus glottal-stop formation is limited in its application to instances where the verb-final consonant is a voiceless stop. More mesolectally, it seems, the rule has a broader domain, but for the Borkeza speakers its rate of application on other verb-final consonants is so low as to be considered categorically non-occurring.[14] A special point about glottal-stop

[13]The rate of deletion when /*p*/ is the verb-final consonant is 3% (1/34). In accordance with the usual procedure in variation studies, I have counted any frequency of less than 5% as an example of categorical non-occurrence. In all cases where I make reference to categorical non-occurrence, I am pointing out that the rule did not take place in a given environment; I am not saying that the grammar blocks it from occurring there. The present analysis is based entirely on what speakers did and did not say. It does not draw on speakers' intuitions about what they can and cannot say.

[14]Glottal-stop formation when the verb-final consonant is not a voiceless stop occurs with the following frequency:

formation is its relationship to the rule of deletion. There are ways in which glottal-stop formation seems like partial or incomplete deletion. That is, a consonant that undergoes it has been stripped of all distinctive features, with only a "skeleton" remaining. To be sure, for the Borkeza corpus, because glottal-stop formation is confined to voiceless stops, the presence of a glottal stop indicates that a voiceless stop (and not just any consonant) is underlyingly present. At the same time, as noted earlier, replacing the rule of word-final consonant deletion with a rule of glottal-stop formation edges LIE closer to English phonotactics and away from Mande phonotactics. However restricted or incomplete a glottal stop may seem as a consonant, it is a consonant nonetheless.

Section 2 has presented four rules that "compete" for word-final consonants in LIE. Table 4, given below, shows the frequency of occurrence of each of these rules by speaker. Each frequency is a percentage of the number of times the rule operates as a fraction of the possible times that the rule could operate. For paragoge, that is 75 times for each speaker. For the other rules, I have removed tokens where the verb-final consonant is followed by an identical consonant (or one identical except for voicing). In addition, because deletion is categorically non-occurring when the verb-final consonant is /*p*/, I have removed /*p*/-final tokens from the deletion column of the table. Further, I have limited glottal-stop formation to tokens where the verb-final consonant is a voiceless stop in a non-prepausal environment (and is followed neither by an identical consonant nor a nasal; see fn. 14), and I have limited resyllabification to instances where operation of the rule is possible.

Verb-Final Consonant		%
/l/	1/60	2
a fricative	1/107	1
a voiced stop	0/22	0

Glottal-stop formation is also sensitive to following phonological environment; in particular, categorical non-occurrence obtains when the following segment is a nasal or when it is identical to the verb-final consonant (or identical to it in all save voicing). For instances where the verb-final segment is a voiceless stop and would otherwise be eligible for glottal-stop formation, the following frequencies show up:

Following Segment		%
nasal	0/37	0
identical segment	1/63	2

These restrictions on the occurrence of glottal-stop formation converge to make the point that, for the present speakers at least, this rule's domain of operation is quite limited.

Table 4. Frequency of rule operation by speaker.

	Paragoge		Deletion		Resyllabification		Glottal-Stop	
Blaster	10/75	13%	30/58	52%	4/19	21%	7/27	26%
Bottlepicker	6/75	8%	45/66	68%	9/14	64%	1/10	10%
Fr. Soldier	14/75	19%	26/70	37%	10/19	53%	6/30	20%
Overseer	36/75	48%	24/59	41%	4/10	40%	1/31	3%
PFC	27/75	36%	26/58	45%	6/19	32%	2/26	8%
Tailor	39/75	52%	6/59	10%	11/20	55%	2/16	13%
Tapper	40/75	53%	6/40	15%	8/13	62%	0/26	0%
n	**525**		**410**		**114**		**166**	

Table 4 points to the vast range of variation from rule to rule, from speaker to speaker. For example, the frequency of occurrence of deletion ranges from 10% to 68%, that of paragoge from 8% to 53%. Are there patterns in the variation? What causes the variation, and what causes the patterns? These are the questions that §3 addresses.

3. The Factors That Shape Variation

In the discussion that follows, six factor groups will be considered, one after the other. Though these factor groups vary in importance, four are of statistical significance for every rule. They are the speakers, following grammatical environment, following phonological environment, and word-final consonants.[15] In addition, the frequency of the verb's occurrence and the height of the vowel in the verb are sometimes statistically significant as well.

3.1. The speaker. For every one of the rules under discussion, variation among speakers is statistically significant. For example, the probabilities by speaker for paragoge are given in Table 5. In this and subsequent tables, probabilities greater than .50 favor application of the rule; probabilities less than .50 disfavor it. The

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[15]Simultaneous attention to following grammatical environment and following phonological environment introduces an overlap when the verb is the final word of a clause, e.g.

(i) *a kɛ̃ supos tu it*
I HAB supposed to eat (HAB = habitual aspect)
'I'm supposed to eat.' (PFC)

In order to avoid the overlap, tokens of this type were removed from consideration as a following grammatical environment and were only evaluated as a type of following phonological environment. A further point raised by the example in (i) is the fact that the study of verb-final consonants is not confined to finite verbs. Verbs were considered regardless of whether they were past or nonpast, were bare or had one or more auxiliaries, and were finite or nonfinite; however, none of these differences prove to be statistically significant.

further a factor's probability is from .50, the stronger the factor's effect upon the rule.[16]

Table 5. Speakers as a factor group for paragoge.

Blaster	.18
Bottlepicker	.22
French Soldier	.24
PFC	.62
Overseer	.74
Tapper	.75
Tailor	.78

The probabilities reveal a sharp split among the speakers. Note that it is an occupational split: the two men who worked outside the plantation and the military are joined by the watchman in disfavoring paragoge. In contrast, the soldier and the three longtime rubber tappers all favor it strongly. The correlation of job status with frequency of paragoge need not be surprising, for in Liberia paragoge is a shibboleth, a stigmatized feature of basilectal speech.

Evidence of the socially marked status of the paragogic vowel comes from David Peewee, a first-language-Loma speaker who is a high school graduate. Peewee is a son of a soldier and spent part of his childhood in army camps. Asked how soldiers talk, Peewee gives the answer in (6):

(6) *e se, "luki æ? hẽ. luki æ? hẽ." e min, "luk æt hem."*
they say look at him look at him it mean look at him

bɔ de jɔs put e dakana we, "luki æ? hẽ."
but they just put it that-kind-of way look at him

'They say, "Looki at him. Looki at him." It means, "Look at him," but they just put it that way, "Looki at him."'

[16]The probabilities listed in Table 5 and subsequently are the ones that obtain when all statistically significant factor groups for a particular rule are determined simultaneously. Thus, the values in Table 5 represent an evaluation of paragoge that is determined not only by the role of individual speakers but also by the importance of following grammatical factor, following phonological factor, vowel height, and verb-final consonant. The full listing of statistically significant factor groups for a particular rule is given in the Appendix. In the case of paragoge, however, the sharp split among speakers represents a difference not only in the extent to which they favor or disfavor paragoge but also a pervasive difference as to which environments favor paragoge and which disfavor it; this is discussed in §3.2 below. Thus, the Appendix presents two sets of probabilities for paragoge, one for the top three speakers in Table 4 and one for the bottom four.

Peewee served as my research assistant in 1980-81. At that time he interviewed an elderly friend of his, a speaker of basilectal LIE whose first language is Dan. In an instance where he seeks to clarify something that the Dan speaker has said, Peewee converts the Dan speaker's form from basilectal to mesolectal. The basilectal speaker then echoes Peewee.[17]

(7) Nimba Watchman:

de	*bede*	*tu,*	*sɔ̃*	*waze*	*fɔ*	*dɛ̃.*
they	build	two	some	houses	for	them

no	*zɛ̃.*
no	zinc

de	*puti*	*tasi*	*ɔn*	*e.*
they	put	thatch	on	it

Peewee:

pam	*tæ.*
palm	thatch

Nimba Watchman:

pam	*tæ.*
palm	thatch

NW: 'They built two, uh, some houses for them. They didn't use zinc.They put thatch on it.'

P: 'Palm thatch.'

NW: 'Palm thatch.'

The examples in (6) and (7) make the same point, namely that paragoge is a basilectal feature, a salient and stigmatized basilectal feature.[18] Indeed, it is perhaps the single most salient badge of basilectal status. Deletion of word-final consonants, on the other hand, is not identified exclusively with the basilect and does not carry the same negative affect, a point that is returned to below. A further

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[17]While Nimba Watchman's paragogic vowel in (7) is unusual in that it occurs on a noun, the relevant point—that paragoge is stigmatized speech—is the same. In the half-hour segment from which this example comes, Nimba Watchman adds the paragogic vowel forty times to verbs and three times to nouns.

[18]The character of the grammar (or grammars) along the continuum has been an ongoing topic of discussion in creole studies (cf. Bickerton [1975]). As noted in §1.3, it is assumed that an individual occupies a range along the continuum, but it is also assumed that no speaker has a grammar that spans the entire continuum. Thus, in contrast to the seven speakers in the present study, David Peewee does not have the rule of paragoge, at least not as part of his ordinary *productive* competence. In discussing the social weight of paragoge, I don't mean to suggest that only the speakers who avoid paragoge are aware of its affect. Surely all the speakers in the corpus are aware of it. This leads to questions as to why basilectal speakers elect to retain stigmatized features in their speech, an issue that LePage's [1972, 1977] social psychological model addresses.

point, also to be discussed below, is that there is a connection in the present case between job status and linguistic behavior; specifically, the correlation for these speakers is between their job status and their place along the Liberian English continuum.

At first glance the results for resyllabification suggest an utter lack of parallel to those for paragoge. These results show no pattern that can be linked to speaker's occupation. These results are given in Table 6, with speakers listed in the same order in which they appeared in Table 5; there they were arranged from most strongly disfavoring paragoge to most strongly favoring it.

Table 6. Speakers as a factor group for resyllabification.

Blaster	.06
Bottlepicker	.44
French Soldier	.79
PFC	.48
Overseer	.19
Tapper	.96
Tailor	.51

In §1.6 I raised the issue of how to characterize the input of the variable rules under consideration. At that time I concluded that ordinarily it would be assumed that the input to a given rule would be all eligible forms. For resyllabification this means every token for which the following syllable had an available C slot in the onset. However, when paragoge is assumed to have operated prior to resyllabification, the results set forth in Table 6 change dramatically. In environments where resyllabification is possible, for the three speakers who favor paragoge most strongly (Tailor, Tapper, Overseer), resyllabification is categorical precisely when paragoge does not apply. Thus, the probabilities for these three speakers for resyllabification simply reflect the proportion of resyllabifiable environments in which paragoge occurred relative to the proportion in which resyllabification did. Clearly, to get at differences between speakers with regard to resyllabification, the more meaningful measurement is one in which tokens of paragoge have been removed from the input. Table 7 presents the results once this adjustment has been made. It lists first the probabilities for paragoge itself, then the probabilities for resyllabification when the paragoge tokens have been removed.

Table 7. Speakers as a factor group, first for paragoge and then for resyllabification (when instances of paragoge have been excluded)

	Paragoge	(Adjusted) Reyllabification
Blaster	.18	.02
Bottlepicker	.22	.71
French Soldier	.24	.77
PFC	.62	.86
Overseer	.74	(1.00)
Tapper	.75	(1.00)
Tailor	.78	(1.00)

The probabilities for the first four speakers in the second column of Table 7 are relative to one another; the three speakers displaying categorical behavior have been removed from consideration. As can be seen, once paragoge has been factored out, there are three groups of speakers when it comes to resyllabification: those speakers who resyllabify categorically, those who strongly favor resyllabification (but who do not resyllabify categorically), and the one speaker who strongly disfavors resyllabification. There is a connection with job status: the categorical resyllabifiers are the low-status rubber tappers. At the other end—strongly disfavoring resyllabification—is Blaster, one of the two men who achieved a non-plantation, non-military employment.

In the case of paragoge, the link between continuum and rule operation is apparent. Paragoge is a stigmatized rule. But why should resyllabification be tied to the continuum? Specifically, why should greater resyllabification be tied to more basilectal speech? It would seem that a case could be made for the claim that the opposite result is the expected one, i.e. that resyllabification would be most favored by those whose LIE is closest to English.

In fact, the answer seems to lie in the status of the third major rule, deletion. The probabilities for it by speaker are given in Table 8.

Table 8. Speakers as a factor group for deletion.

Blaster	.80
Bottlepicker	.75
Overseer	.66
French Soldier	.63
PFC	.57
Tapper	.22
Tailor	.07

This time there is a sharp distinction between the two most basilectal speakers (Tapper and Tailor) and the other five, with the two most basilectal speakers sharply disfavoring deletion. Of the other five speakers, Blaster and Bottlepicker distinguish themselves as strongly favoring deletion. In this case, the three speakers who are neither most basilectal nor least basilectal do stand intermediate between the two, but they are certainly closer to Blaster and Bottlepicker than to Tapper and Tailor.[19]

The results in Table 8 make the point quite emphatically that deletion is viewed positively by speakers. It would seem to be a sign of fluency, of greater facility in English. Certainly those in the present corpus closest to the mesolect (and acrolect) are the ones who delete most frequently. Moreover, truly mesolectal speakers of Liberian English, e.g. Monrovia speakers, delete consonants frequently (and never engage in paragoge). More acrolectally still, of course, deletion wanes. The relevant point here is that for the Borkeza speakers the deletion of consonants seems to correlate strongly with position on the continuum. To return, then, to the question of why less basilectal speakers do not resyllabify more, the answer seems to be that these speakers favor deletion instead. Rather than resyllabifying a word-final consonant whenever possible, they elect instead to delete it or to change it to a glottal stop.

Indeed, glottal-stop formation represents another cue of higher status on the continuum. As noted in §2.4, in the Borkeza corpus this rule is effectively limited to voiceless stops. Tapper does not display the rule at all (0/26); Overseer's rate of rule application (3%, 1/31) is so low as to count as categorical non-occurrence. Failure to use the rule of glottal-stop formation constitutes the basilectal extreme. For the other speakers, the distribution correlates with position on the continuum, but in a way that is slightly complicated. When what follows the verb is consonant-initial, there is no significant difference among the five remaining speakers. In contrast, when what follows the verb is vowel-initial, there is a sharp difference, with Blaster and Bottlepicker strongly favoring glottal-stop formation in this environment. This combination of factors (speaker and following phonological environment) yields the probabilities set out in Table 9:[20]

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[19]The possibility exists that deletion is like resyllabification in being skewed by the paragoge results. However, this prediction is not borne out, particularly not in the case of the gap between Tapper/Tailor and the remaining five speakers. When the instances of paragoge are removed, Tapper and Tailor continue to disfavor deletion strongly: the probability for deletion in Tapper's speech is .26, for Tailor's .08.

[20]The frequency of glottal stops by following phonological environment when the speakers are divided into less basilectal (Blaster and Bottlepicker) and more basilectal (all others) is the following:

Blaster, Bottlepicker			French Soldier, PFC, Tailor		
Following V	4/12	33%	Following V	2/17	12%
Following C	4/24	17%	Following C	8/58	14%

Table 9. Speakers and following phonological environment as a combined factor group for glottal-stop formation.

Blaster/Bottlepicker, following vowel	.77
Blaster/Bottlepicker, following consonant	
French Soldier/PFC/Tailor, following vowel	.23
French Soldier/PFC/Tailor, following consonant	

If all following-consonant tokens are removed from consideration and only following-vowel ones are examined, the same sharp distinction obtains between Blaster/Bottlepicker and the others. On the other hand, if all following-vowel tokens are removed from consideration and only following-consonant ones are examined, the difference between Blaster/Bottlepicker and the other speakers is not statistically significant.

An overview of speaker interaction with individual rules indicates the extent to which these rules are sensitive to a speaker's position on the continuum. Table 10 below and the accompanying Table 11 demonstrate the correlation that obtains across rules. In Table 10 I posit particular behavior as being "most basilectal", "least basilectal", or "intermediate". In the case of paragoge, deletion, and glottal-stop formation, it is quite clear that "least basilectal" behavior in the Borkeza corpus corresponds directly to mesolectal behavior in Liberian English more generally. This is precisely what is to be expected.[21]

Table 10. Rules pertaining to word-final consonants and their correlation with position on the continuum.

	paragoge	deletion	glottal-stop*	resyllab.**
Least basilectal	disfavor	strong favor	favor	disfavor
Intermediate	—	weak favor	disfavor	favor
Most basilectal	favor	disfavor	non-occurring	categorical

*Glottal-stop formation is with reference to following vowels only.
**Resyllabification is with reference to post-paragoge results.

[21]The link between "least basilectal" Borkeza speech and mesolectal Liberian English generally may also extend to resyllabification; it simply has not been investigated. The point should be made that the least basilectal Borkeza speech is pointing in the direction of the mesolect; it is not itself mesolectal speech. Clear differences exist to make this point. For example, the least basilectal Borkeza speakers use paragoge infrequently; mesolectal speakers use it not at all. Similarly, the least basilectal Borkeza speakers show some use of the rule of glottal-stop formation, but only when the input is a voiceless stop and, even then, not all that frequently. In contrast, the rule is far more widespread in mesolectal speech, both in domain and in frequency.

Table 11. Each speaker's performance relative to position on the continuum. ("least" = least basilectal, "inter." = intermediate, "most" = most basilectal)

	paragoge	deletion	glottal-stop	resyllab
Blaster	least	least	least	least
Bottlepicker	least	least	least	inter.
French Soldier	least	inter.	inter.	inter.
PFC	most	inter.	inter.	inter.
Overseer	most	inter.	most	most
Tailor	most	most	inter.	most
Tapper	most	most	most	most

Table 11 indicates the regularity across rules vis-a-vis the continuum in the Borkeza corpus. The two least basilectal speakers routinely display the least basilectal strategy (in all four cases for Blaster and three out of four for Bottlepicker). At the other end of the continuum, Tapper, Tailor, and also Overseer regularly display the most basilectal pattern. The most fully basilectal status of Tapper and Tailor correlates with their having held a low-status job—and no other—within the cash economy; Overseer's long history of employment at the rubber plantation makes it unsurprising that he talks like other rubber tappers. Finally, French Soldier and PFC stand intermediate between the two extremes. Except in the case of paragoge, which has no intermediate position, French Soldier and PFC always end up in the middle. These results indicate that PFC, who was a soldier but never a tapper, is located further up the continuum than Tapper and Tailor, who were tappers but never soldiers. While large generalizations based upon such a small number of speakers is risky, it does seem consistent with the nature of their occupations that soldiers would need to use pidgin far more extensively than tappers would. In turn a greater range of communicative need would seem to encourage less basilectal speech. At the same time, PFC is considerably younger than Tapper and Tailor, a fact which may also bear on the differences in their speech.

The social weight of paragoge is an obvious fact about LIE, one that speakers of Liberian English talk about. Tables 10 and 11 make the point that *all* the rules under consideration correlate with social position. But, given the strength of paragoge, is the seeming social significance of the other rules actually an illusion, a statistical consequence of the power of this one rule? The answer is no. For resyllabification the link to the continuum only emerges when the paragoge tokens are removed, and the correlation between speakers' position and rates of deletion and glottal-stop is unchanged when the paragoge tokens are removed from the input to these rules. For the Borkeza speakers, position on the continuum correlates not just with one rule but with all four, reflecting not only the extent to which a speaker retains basilectal rules like paragoge and resyllabification but also

the extent to which he uses mesolectal ones like deletion and glottal-stop formation.

3.2. Following grammatical environment. Tokens were divided according to what followed the verb, whether a full NP, a pronoun, an adverb or prepositional phrase, or a particle. "Particle" here refers to a word (ordinarily an "objectless preposition") that combines with the verb to form a "two-word verb" such as *nak ɔ* 'knock off, stop work for the day' or *mek fɔ* 'cause'. With one exception, all of the two-word verbs in the corpus are intransitive, i.e. *wi wek ɔ* 'we woke up,' not *wi wek ɔ koluba* or *wi wek koluba ɔ* 'we woke up Koluba'. The one exception is given in (8):[22]

(8) ... *du yu tẽk de we bak ɔ mĩ?*
do you think they will back up me
'... do you think they will back me up?' (Bottlepicker)

This sentence illustrates the general Liberian English requirement that the particle be next to the verb even when there is a pronominal object.

In §3.1 it was shown that in the case of paragoge there is a sharp split between the four more basilectal speakers (who strongly favor application of the rule) and the three less basilectal speakers (who strongly disfavor it). However, as Table 12 shows, the rate of paragoge when a particle follows the verb is precisely the opposite of the overall rate. While the less basilectal speakers display paragoge on the verb in verb-particle combinations about as often as they display it overall, the more basilectal speakers—the heavy users of paragoge—never display paragoge when the verb is part of a verb-particle combination. (The speaker Overseer has no particle tokens; for that reason, he has not been included in Table 12. In general, however, he patterns with the more basilectal group when it comes to paragoge.)[23]

Table 12. Frequency of paragoge for following particles and for all other words by group of speaker.

	Particle		Other words	
More basilectal speakers (Tapper, Tailor, PFC)	0/18	0%	103/189	54%
Less basilectal speakers (Blaster, Bottlepicker, French Soldier)	3/20	15%	27/170	16%

[22]*Do*-support is not a characteristic of LIE; the sentence in (8) is exceptional in that regard.
[23]Excluded from Table 12 are those instances where the verb is the final word in the sentence.

A verb-particle combination should perhaps be thought of as a single semantico-syntactic unit in LIE. Following from this, it seems to be the case that for the more basilectal speakers a verb-particle combination is a single *phonological* unit as well. Adding a vowel is essentially a word-final operation in LIE. Word-internal insertion of an epenthetic vowel between the final consonant of one syllable and the initial consonant of the next is rare. If the verb-particle unit is like a single word, then paragoge may be perceived by the speaker as inappropriate unit-internally. On the other hand, the fact that paragoge obtains for the verb in verb-particle combinations for less basilectal speakers suggests that, for these speakers, the verb and particle are separable.

If verb and particle are truly a single phonological unit for the more basilectal speakers, it might seem possible to have paragoge applying to the final consonant of the particle rather than to the verb, yielding forms like *luk-laki* (<*look like*) 'seem as if, resemble'. In fact, no such forms obtain. Paragoge is limited to monosyllabic forms, and a verb-particle combination is necessarily multisyllabic.

With regard to paragoge, the probabilities for following grammatical environment are given in Table 13. As noted, the speakers have been split into two groups. This has been done because the overall difference in frequency mapped out in Table 12 corresponds to a difference in distribution. The most dramatic aspect of this difference lies in the treatment of verb-particle combinations (as indicated in Table 12).

Table 13. Following grammatical environment as a factor group in paragoge.

More basilectal speakers (Tapper, Tailor, PFC, and Overseer)

Full NP	.72
Adverb/PP	.42
Pronoun	.34
Particle	(.00)

Less basilectal speakers (Blaster, Bottlepicker, and French Soldier)

Full NP	.78
Particle	.68
Adverb/PP	.31
Pronoun	.22

Syntactically, the status of a direct or indirect object is ordinarily the same whether it is a full NP or a pronoun. Phonologically, on the other hand, the two are not the same. For example, in English there is a rule of *v*-deletion that applies to the /*v*/ in the verb *save* in (9a) but not in (9b) [Selkirk 1972]:

(9) a. Save me a seat. [$v \rightarrow \emptyset$]

b. Save Mary a seat. [$v \not\rightarrow \emptyset$]

Differences of this type between full NP and pronoun objects are readily expressed via the Prosodic Hierarchy developed by Selkirk [1978, 1980, 1981] and Nespor and Vogel [1982, 1983]. The Hierarchy recasts syntactic bracketing to reflect phonological phrasing. Without going into great detail about the Hierarchy, I will draw on Hayes's [1989] expansion of the principles set forth in Selkirk in order to bring the insights of the formalism to bear on the issues at hand with regard to following grammatical environment. The counterpart in the Hierarchy to a syntactic phrase is the Clitic Group. (A critical difference, however, is that all units in the Hierarchy, including Clitic Groups, are non-recursive.) Hayes [1989:208] posits the following rules for the derivation of Clitic Groups from syntactic structure:

(10) **Clitic Group Formation**

a. Every content word (lexical category) belongs to a separate Clitic Group.

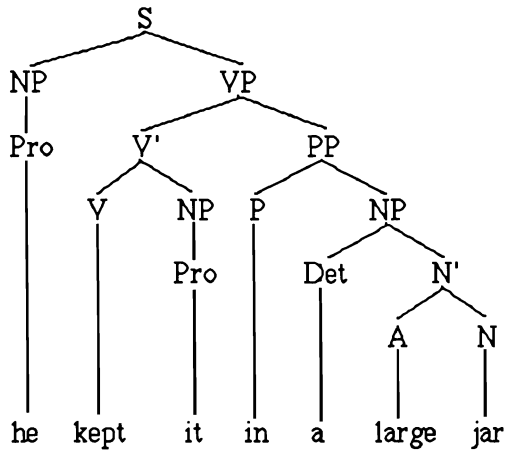
b. Definition: The HOST of a Clitic Group is the content word it contains.

c. Definition: X and Y SHARE CATEGORY MEMBERSHIP in C iff C dominates both X and Y.

d. Rule: Clitic words are incorporated leftward or rightward into an adjacent Clitic Group. The group selected is the one in which the clitic shares more category memberships with the host .

The sentence *He kept it in a large jar* can be used to illustrate the procedure of Clitic Group Formation. There are three content words, so there are necessarily three Clitic Groups. The syntactic structure given in (11a) gives rise to the Clitic Group designations in (11b). In terms of the relevant categories for the study of LIE consonants, full NP's, PP's, and adverbs each fall into a Clitic Group distinct from that of the verb that precedes them. Pronouns, on the other hand, are part of the same Clitic Group as the verb. The same is true for particles. Indeed, for the more basilectal speakers the possibility exists that verb and particle are seen not just as being in the same Clitic Group but as a single word (phonologically and not just syntactico-semantically).

(11) a.



b. [$_C$ *he kept it]* [$_C$ *in a large*] [$_C$ *jar*]

As the figures in Table 13 show, paragoge is strongly disfavored when the following word is in the same Clitic Group as the verb. It is either favored or less disfavored when the following word is in a separate Clitic Group from the verb. (There is a single exception to this, namely that paragoge is favored among the less basilectal speakers when a particle follows the verb. This is a phenomenon for which I have no explanation.)

With particular reference to the difference between full NP's and pronouns in their impact upon paragoge and other processes (see below), the difference between them with regard to Clitic Group membership vis-a-vis the verb is perhaps reinforced for the Borkeza speakers by what happens in Loma. Loma is an SOV language; in it, object pronouns surface as verb prefixes. While the word order differences between Loma and LIE may well mitigate Loma's influence on LIE in this regard, the Loma facts nonetheless converge with the English ones in distinguishing phonologically between objects that are full NP's and those that are pronouns.

While the Prosodic Hierarchy bears directly on the difference between full NP's and PRO's and also perhaps on the categorical avoidance of paragoge in verb-particle instances for the more basilectal speakers, it does not account for the difference between full NP's and adverb/PP's. For both the more and the less basilectal speakers, it is the case that a following adverb or PP disfavors paragoge while a following NP favors it. Certainly, if it were only a question of the Prosodic Hierarchy, then following adverbs and PP's would be expected to favor paragoge with a strength comparable to that of following full NP's.[24]

[24]Inasmuch as the locative adverbs *hya* 'here' and, especially, *dɛ* 'there' are arguably pronoun-like and may be thought of as grammatical items rather than lexical ones, the possibility exists

One possibility is that the difference between following NP's and following adverbs/PP's is to be explained by an alternate analysis, one in which the added vowel carries grammatical information, specifically to signal transitivity (with a full NP only). If paragoge is limited in application to instances where there is a Clitic Group juncture, i.e. to cases where what follows the verb is an NP, adverb, or PP, and if following NP's predominate in this environment, speakers may re-analyze a meaningless vowel that has been tacked on for reasons of euphony as a meaning-bearing element that is inserted only when a full NP follows. This alternative view of what vowel insertion does gets the most support from Tapper's speech. In the corpus Tapper has 41 following NP's and only 6 following adverbs/PP's. For NP's the rate of paragoge is 85%; for adverbs/PP's it is a much lower 33%. This kind of re-analysis by speakers, even if it is incompletely realized, would help to account for the difference between following NP's and following adverbs/PP's as regards their impact on paragoge.[25]

In the present corpus, glottal-stop formation appears to be another rule that applies word-finally but not word-internally. The same kind of correlation between Clitic Group membership and frequency of rule operation that obtains for paragoge shows up here, too. Indeed, for glottal-stop formation the probabilities grow stronger when a simple dichotomy is made between membership in a different Clitic Group from the verb (NP, Adverb/PP) or in the same one as it (Particle, PRO). Table 14 reflects this.

Table 14. Following grammatical environment as a factor group in glottal-stop formation

Different Clitic Group (Full NP, Adverb/PP)	.80
Same Clitic Group (Particle, Pronoun)	.20

In sum, when the following item is in a different Clitic Group, glottal-stop formation is strongly favored; equally, when the next word is in the same Clitic Group, glottal-stop formation is disfavored.

In the cases of resyllabification and deletion, the correlation between Clitic Group membership and frequency of rule operation is partially borne out and partially confounded. In terms of boundaries, since resyllabification entails the dismantling of a word boundary, it follows that weaker boundaries would be more

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that they should not be considered hosts of their own Clitic Group but should instead be incorporated into the verb-hosted Clitic Group preceding them. If these adverbs behaved differently from other adverbs with regard to paragoge and the other processes, that could be seen as support for such an analysis. In fact, there is insufficient data in the present sample to support or refute any claims along these lines.

[25]In the use of a front vowel post-verbally to signal transitivity, LIE would parallel Tok Pisin. However, unlike the case of Tok Pisin, there seems to be no obvious substratal source for a transitivity marker for LIE.

ready to fall, more likely to favor resyllabification. As Table 15 makes clear, this prediction holds for pronouns, not for particles.

Table 15. Following grammatical environment as a factor group in resyllabification

Pronoun	.93
Particle	.53
Adverb/PP	.37
Full NP	.10

The question that arises is why particles do not behave like pronouns. There seem to be two parts to the answer. One is the fact, noted earlier, that less basilectal speakers are willing to permit paragoge when there is a following particle. (As noted, I have no account for this.) The second, more important reason why following particles do not favor resyllabification even as following pronouns do lies in the fixed nature of verb-particle combinations. Any transitive verb can enter into a verb-pronoun combination. In contrast, verb-particle combinations are usually frozen, there being a limited number of them. Thus, in theory a verb-particle sequence such as *luk lak* 'seem as if, resemble' is subject to resyllabification, to yield \$*lu*\$*klak*\$; in reality, however, the frequent occurrence of this combination as a single semantic unit has yielded the pronunciation [*lula*], as in (12):

(12) *des ma, e lula hi stupe*
this man it look-like he stupid
'It seems as if this man is stupid.' (PFC)

With frequently occurring lexical chunks, "erosion" is possible. In the present case, apart from differences in boundary strength, this means that deletion correlates with frequency of occurrence and resyllabification with infrequency. This account, one that links verb-particle combinations with frequency of occurrence and links infrequency of occurrence with resyllabification, has its parallel in the fact that a verb that occurs infrequently in the corpus favors resyllabification (regardless of the verb's following grammatical environment). This issue of verb frequency is discussed in §3.5 below.

A further point about Table 15 is the fact that, while following full NP's and following adverbs/PP's are alike in disfavoring resyllabification, there is a difference in their strength, with full NP's disfavoring resyllabification far more strongly than do adverbs/PP's. In fact, this difference is strictly a byproduct of the strong affinity that following full NP's have for paragoge. When all the instances of paragoge are removed from the consideration of resyllabification, i.e. removed from the input, the difference between following NP and following adverb/PP with

regard to resyllabification virtually disappears, with following adverb/PP actually disfavoring resyllabification slightly more than following NP (.25 for following NP's, .20 for following adverbs/PP's).

With regard to deletion, following phonological environment is of greater statistical significance than following grammatical environment. Moreover, in ways that did not obtain in the case of other rules, there is skewed distribution between these two types of following environment, phonological and grammatical. To avoid the skew, the examination of following grammatical environment is confined to cases where a consonant follows the verb. The grammatical-environment factor group's probabilities vis-a-vis deletion are given in Table 16.

Table 16. Following grammatical environment as a factor group in deletion
(Limited to cases where the following segment is a consonant.)

Adverb/PP	.69
Pronoun	.51
Particle	.48
Full NP	.31

Here (as in the case of NP vs. adverb/PP for resyllabification), the differences within the factor group are largely a byproduct of the facts of paragoge and, to a lesser extent, resyllabification. When all tokens which show paragoge on the surface are removed from the consideration of deletion, i.e. removed from the input, following grammatical environment ceases to be statistically significant.

3.3. Following phonological environment. The role of following phonological environment in glottal-stop formation has already been noted: in less basilectal speech, glottal-stop formation is strongly favored when a vowel follows. There is a complement to this in deletion. There, for all speakers, when a vowel follows, deletion is strongly disfavored, as Table 17 indicates.

Table 17. Following phonological environment as a factor group for deletion

Pause	.78
Consonant	.77
Vowel	.08

The fact that a following vowel has the opposite impact on deletion from what it does on glottal-stop formation makes the point that glottal-stop formation is not simply quasi-deletion. While the two rules seem to carry similar social weight, they are distinct, favored by opposing environments.

Another rule where following phonological environment is statistically significant is that of resyllabification. Here, however, it is not following

environment alone that should be looked at. Rather, it is the combination of following segment with the verb-final consonant that matters. Accordingly, for resyllabification a factor group was devised of pairs of segments. The factors in this group were given in Table 3 and are repeated below:

Table 3. Resyllabification: Sequences of verb-final consonant and following segment.

	Verb-final consonant	First segment of following word	Example	
a.	stop	vowel	*tek ɛni*	'take any'
b.	fricative	vowel	*lev ɛ̃*	'live in'
c.	liquid	vowel	*kel ɛni*	'kill any'
d.	/s/	nasal	*as mi*	'ask me'
e.	/s/	stop	*lɔs de*	'lost a day'
f.	obstruent	liquid	*kuk ras*	'cook rice'
g.	obstruent	glide	*wep yu*	'whip you'
h.	stop	/h/	*bit hĩ*	'beat him'

Included in the /*s*/-stop sequence are instances where the stop is voiced. This was done inasmuch as there is no contrast in English between voiced and voiceless stops following an initial /*s*/. In fact, whether such cases are included or not is inconsequential: resyllabification does not take place here.[26] In fact, of all English clusters, obstruent-obstruent ones seem to be least likely to appear on the surface in LIE. Indeed, the reduction of such clusters has, in some cases at least, been lexicalized, e.g. *pɛ tapa*, (< *spare tapper*) 'a substitute rubber tapper', and *fayaton* 'Firestone'. Given the tendency to avoid the initial /*s*/ in such a cluster when it occurs within a word, the failure of resyllabification to create new instances of the cluster should be expected.

A few further comments with regard to the list in Table 3 are in order. To begin with, in the case of obstruent-liquid and obstruent-glide combinations, consideration was limited to those where the resultant resyllabification would yield a permissible cluster in English. For example, *put rɔba* 'put rubber' would have been included but not *put letɛs* 'put latex'. All of the obstruent-liquid combinations are actually stop-liquid ones. Similarly, almost all of the obstuent-glide combinations are stop-glide (and most of them involve velar stops).[27]

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[26]The only exception in the corpus to the statement that LIE speakers do not resyllabify /*s*/-stop clusters is Blaster, specifically with three occurrences of *lɔs de* 'lost a day (of work)'. Apart from that, resyllabification of these clusters was categorically rejected by all.

[27]Inasmuch as Liberian English parallels American English in blocking *sy* and *ty* sequences (and coronal-/*y*/ sequences generally), I excluded them from consideration here.

Finally, fricative-V and liquid-V combinations have been merged. The results for the entire factor group are given in Table 18.

Table 18. The combination of verb-final consonant and following segment as a factor group for resyllabification

/s/-Nasal	.90
Stop-Vowel	.84
Stop-/h/	.62
Stop-Liquid	.57
Fricative/Liquid-Vowel	.17
Obstruent-Glide	.05

It was noted in §2.2 that in the case of the stop-/*h*/ sequence the segmentation changes. There is a split among speakers with respect to the operation of resyllabification in this instance. Only the three most basilectal speakers—these are the same speakers who resyllabify categorically after paragoge has operated—carry out this rule. Loma does not have an /*h*/. It can be argued that the most basilectal speakers in the corpus lack /*h*/ in LIE (or are ambivalent about its status there). In that case, resyllabification of a stop-/*h*/ sequence is for them simply a variant, if not an instantiation, of the stop-vowel sequence. In contrast, less basilectal speakers would seem to have syllable-initial /*h*/ in their LIE. For these latter speakers, the phonemic status of /*h*/ blocks resyllabification from occurring.

Sankoff and Rousseau [1989] raise the issue that in some instances a single variable rule may reflect the operation of more than one underlying rule. That would not seem to be the case where paragoge is involved. It seems to be a unitary process, one whose output is readily recognizable. On the other hand, in the case of resyllabification Sankoff and Rousseau's observation probably applies. In fact, the six factors in Table 18 may represent as many as four distinct processes. By this reckoning, there is one rule that links a verb-final /*s*/ to a following nasal. This rule is virtually categorical, occurring 14 times out of 15 in the corpus. (The fifteenth time is an instance of paragoge.) There is a second rule that links a verb-final consonant to a following vowel. This rule is highly favored by a verb-final stop and highly disfavored by any other verb-final consonant. Similarly, there are rules that resyllabify a verb-final stop to a following liquid and a verb-final obstruent (ordinarily a stop) to a following glide. As noted, the stop-/*h*/ sequence is essentially a variant of the stop-vowel rule in more basilectal speech and is blocked from operating in less basilectal speech. Thus, it does not constitute a separate rule.

If, as I am suggesting, resyllabification comprises four rules rather than one, the factor groups that favor and disfavor each of these processes need to be worked out, but a larger sample is required for this. Two obvious questions for further

study are why the /s/-nasal sequence favors resyllabification so strongly and why stops favor resyllabification pre-vocalically while other consonants do not.

Finally with regard to following phonological environment, there is this factor group's role in paragoge. When the Borkeza corpus is split into more and less basilectal speakers, following phonological environment is not statistically significant for the more basilectal group. For the less basilectal speakers, on the other hand, it is statistically significant, but in a way that seems backward. That is, paragoge would seem to be most strongly favored when what follows is a pause or a consonant. In these instances it would prevent a verb-final consonant from reaching the surface in word-final position. On the other hand, when a vowel follows, paragoge seems less likely. After all, in these cases resyllabification is looming as a possibility. However, as Table 19 sets forth, a following vowel favors paragoge, a following consonant or pause disfavors it. I have no explanation for this.

Table 19. Following phonological environment as a factor group for paragoge for less basilectal speakers

Vowel	.76
Consonant	.42
Pause	.31

3.4. The verb-final consonant. For the most part, there are only six oral consonants that occur word-finally in verbs in LIE: /*l*/, /*p*/, /*t*/, /*k*/, /*s*/*š*/, and /*v*/.[28] (As noted in fn. 2, LIE is truly /*r*/-less; the postvocalic /*r*/'s of English do not obtain at any level of LIE, phonological or phonetic.)

In getting at the variation in the processes under consideration, differences among the verb-final consonants themselves are crucial. In the case of glottal-stop formation, only voiceless stops undergo the rule. (The differences among /*p*/, /*t*/, and /*k*/ with regard to glottal-stop formation are not themselves statistically significant.) Then, in the case of resyllabification, the interaction of verb-final consonants with following segments is crucial. There resyllabification is highly favored for /*s*/-nasal and stop-vowel sequences.

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[28]In addition to the final consonants that I have listed, the corpus also contains tokens of the following words:

bed	'build'	*grab*	'grab'
lod	'load'	*rog*	'steal'
hod	'hold, detain'	*flɔg*	'flog, beat'
ad	'add'		

Apart from the rule of glottal-stop formation (which is limited in application to voiceless stops), there is no instance in the present study where the distinction between voiced and voiceless stops displays any statistical significance. Accordingly, for all rules other than glottal-stop formation, the voiced stops have been classed with their voiceless counterparts.

For paragoge, there is a distinct difference in pattern between the more basilectal and less basilectal speakers. For the more basilectal speakers, /*p*/ and, to a lesser extent, /*s*/ favor application of the rule; the other consonants disfavor it, /*k*/ and /*v*/ weakly, /*t*/ and /*l*/ strongly. No generalization seems to exist as to which types of consonants favor paragoge and which disfavor it. In contrast, for the less basilectal speakers, fricatives strongly favor paragoge, while stops as a group strongly disfavor it and /*l*/ weakly disfavors it. (Internal to the stop category, /*p*/ favors paragoge weakly while /*t*/ and /*k*/ both disfavor it strongly.) Probabilities for word-final consonants for the two groups of speakers are given in Table 20.

Table 20. Verb-final consonants as a factor group for paragoge

	More basilectal (Tapper/Tailor/ Overseer/PFC)	Less basilectal (Blaster/Bottlepicker/ French Soldier)	All speakers combined
/p/	.85	.56	.80
/t/	.29	.26	.26
/k/	.45	.25	.38
/v/	.43	.72	.59
/s/	.69	.75	.68
/l/	.25	.45	.27

When consonants are classified by type for the less basilectal speakers, the probabilities that obtain are the following: stops, .30; fricatives, .75; and /*l*/, .44.

The results for paragoge can be juxtaposed with those for deletion; the comparison of the two (using the third column of Table 20) is given in Table 21.

Table 21. Verb-final consonants as a factor group for paragoge and deletion

	Paragoge	Deletion
/*p*/	.80	(.00)
/*t*/	.26	.67
/*k*/	.38	.35
/*v*/	.59	.40
/*s*/	.68	.13
/*l*/	.27	.90

As Table 21 indicates, there is a complementarity between the two processes. Thus, /*p*/ and /*s*/ strongly favor paragoge and strongly disfavor deletion (/*p*/ categorically); at the same time, /*t*/ and /*l*/ strongly disfavor paragoge and strongly favor deletion. (The two remaining consonants, /*k*/ and /*v*/, are essentially intermediate in both cases.) A complementarity of this type is, from a statistical

perspective, not surprising. That is, if paragoge applies pervasively to a given consonant, there will be relatively few tokens left to which deletion can apply. The proof that the complementarity is not simply a result of the statistical procedure employed comes when the paragoge tokens are removed from the input for deletion, as Table 22 shows. While the two intermediate consonants (*/k/* and */v/*) undergo something of a change (with */k/*'s disfavoring of deletion disappearing), the consonants whose presence most strongly affects the probability of rule operation—*/p/*, */t/*, */s/*, and */l/*—have hardly changed at all.[29]

Table 22. Verb-final consonants as a factor group for deletion (with varying inputs)

	all tokens	with paragoge removed
/p/	(.00)	.08
/t/	.67	.64
/k/	.35	.52
/v/	.40	.59
/s/	.13	.17
/l/	.90	.95

The comparison of the force of individual verb-final consonants in paragoge and deletion makes the point that there is, overall, a genuine correlation between the two. However, the fact that this correlation exists does not explain why particular consonants favor paragoge and others deletion. It is not clear to me why consonants pattern in the way that they do with respect to these two rules.

3.5. Frequency of occurrence of the verb. An additional factor group classified verbs by the number of times each occurred in the corpus. The original division was into four categories: 1-2 tokens, 3-9, 11-24, and more than 24. (The latter category consists of three verbs: *gɛt/gɔt* 'get', 70; *mek* 'make', 50, and *tɛl* 'tell', 38.) Such a division is obviously crude; the verbs represented in the corpus are not necessarily a mirror of the actual distribution of verbs in LIE more generally. Nonetheless, verb frequency proves to be statistically significant both for glottal-stop formation and for resyllabification. In each case there is a sharp dichotomy between the two groups of less frequent verbs and the two groups of frequent ones. Thus, the finer distinction into four groups gives way to a binary distinction between "infrequent" verbs, those occurring fewer than ten times in the corpus, and "frequent" ones, those occurring more than ten times.

The distribution of infrequent and frequent verbs in the two cases where frequency proves to be statistically significant is given in Table 23.

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[29]When the paragoge tokens are removed from consideration, the frequency of */p/*-deletion is 7% (1/14) and is no longer below the cutoff point (of 5%) for categorical non-occurrence.

Table 23. Frequency of the verb's occurrence as a factor group in resyllabification and glottal-stop formation

	Resyllabification	Glottal Stop
Infrequent	.86	.28
Frequent	.14	.72

Infrequently occurring verbs strongly favor resyllabification, while frequently occurring ones favor glottal-stop formation. The consonant is preserved in resyllabification, while it is lost in glottal-stop formation. Whether it is because glottal-stop formation is a kind of fast-speech rule (and resyllabification not) or because a less complete signal is needed when a frequently occurring verb is used, in either case the correlation between frequency and reduction of the underlying form is not surprising.

3.6. Vowel height. A final factor group to be considered is the height of the vowel in the verb. These are all monosyllabic verbs, and there is a widely operating rule of monothongization. Essentially, LIE has a seven-vowel Mande system plus a mid-central vowel that occurs in grammatical items. English /ɪ/ has merged with /e/, e.g. *gev* 'give', English /ʊ/ with /u/, e.g. *put* 'put', and English /ʌ/ with /ɔ/, e.g. /kɔt/ 'cut'. In the case of English /æ/, there is variation—it is sometimes realized as [ɛ], sometimes as [a], and less often as [æ].

Vowel height proves to be a factor only in paragoge. Its influence here further reflects the extent to which this rule focuses on the verb itself. The probabilities for this factor group are given in Table 24.

Table 24. Vowel height as a factor group in paragoge

More basilectal:	High	.25		Mid	.80	Low	.43
Less basilectal:	High/Low	.35		Mid	.65		

For the less basilectal speakers, when high and low are separated, the factor group is not statistically significant. The fact that the factor group is statistically significant when the two heights are combined merely makes the point that what matters for the less basilectal speakers, as for the more basilectal speakers, is the opposition between mid vowels and other vowels. It is not clear why middle height favors paragoge. The paragogic vowel is itself mid, and there may be something about a mid stem vowel that "attracts" the mid paragogic vowel. (On the other hand, the height of the paragogic vowel is optionally raised to high when the stem vowel is high.)

4. Conclusions

This study has examined the ways in which a pidgin resolves conflicts between the syllable structure conditions (SSC's) of the lexifier language and those of the substrate, particularly in a case where the substratal SSC's are more restrictive than those of the lexifier language. In such a case, the SSC's that result are intermediate between the lexifier and the substrate languages. Beyond that, the pidgin *creates* phonological rules that will move it still closer to the substratal SSC's. LIE did not get paragoge or final-consonant deletion from the Liberian Mande languages. These languages, lacking final consonants, have no need for such rules. Rather, these are innovated rules whose purpose is to make English-like underlying forms look as Mande-like as possible on the surface. Singh [1987] argues for a view of phonology in which "all truly phonological alternations are governed by WFC's [Well-formedness Conditions]" and "these WFC's trigger one of a universal set of repair strategies to fix or alleviate their violations as and when they arise" (p. 273).[30] (In this way Singh eliminates phonological rules as they are ordinarily envisioned in the literature.) Though Singh's focus was not pidgins or creoles, his model seems to capture the nature of the processes that affect verb-final consonants in LIE: they are all repair strategies.

Thus, paragoge, deletion, and resyllabification provide speakers with a choice of strategies for the "Mande-cization" of English words. In the present study, the use of variable rules has made it possible to see the linguistic and social factors that shape speakers' choices. The most important linguistic factors are Clitic Group membership (specifically, whether the word that immediately follows the verb is in the same Clitic Group as the verb or not), the phonological character of the first segment following the verb, and the verb-final consonant itself. In the course of the article, I have discussed the ways in which these factors have affected individual rules and have offered some explanations for the particular character of the interaction between factors and rules. The remaining factor group that proves to be critical is that of the speaker's place on the continuum. I linked a speaker's location directly to his work history. In terms of job status, the three longtime tappers are at the bottom, the soldier and the Firestone watchman in the middle, and the men who worked at iron ore mines and at factories in the capital at the top. A direct correlation between job status and linguistic behavior obtains here, but one should not always expect that neat kind of correlation; there are too many other pertinent social factors for this one always to prevail.

The link between position on the continuum and application of individual rules means that the most basilectal speakers favor paragoge and resyllabification while the least basilectal speakers favor deletion and glottal-stop formation. There is

[30]Singh specifies "truly phonological" to distinguish phonological from morphological. Because Singh argues that universal principles will determine which repair strategy will apply in a given situation, his proposal is not equipped to accommodate the *choice* of strategies available in LIE.

ample evidence for this pattern; further, it is worth noting that the promotion of Mande SSC's lasts well into the mesolect. The best way to recognize less basilectal speech is not by the high number of word-final consonants that show up on the surface but by the high number of word-final consonants that do *not* show up there, i.e. the high number of forms that have undergone deletion. But why is this so? Why should deletion be the best positive index of non-basilectal status? Since all of the rules except glottal-stop formation achieve the restoration of Mande syllable structure, why should one be stigmatized and another favored?

In considering this question of social stigma, I will focus on the two rules with broadest applicability, paragoge and deletion. There are two complementary facts that seem to me to be the basis for the difference in status of the two. One fact involves Loma, and the other English. As for Loma, it was observed in the introduction that, according to Sadler [1951:19], "the predominant basic word pattern for nouns, adjectives, and verbs is CVCV", where a single V refers to a short vowel. For verbs in Loma the only departures from this pattern are of three types. First, there are disyllabic forms with one or two long vowels, i.e. CV(:)CV(:). Second, there are CVV and CVVV forms, most of which obtain because a consonant has dropped out (see fn. 5). (If the vowels are identical in a CVV form that arose through medial-consonant loss, the form is a monosyllable; otherwise, it remains disyllabic.) And, third, there are some CV verbs. With these exceptions noted, the fact remains that most Loma verbs are disyllabic, and it is fair to speak of a CVCV template for Loma verbs.[31]

To return to LIE: in the case of a verb-particle combination, if it is a single phonological unit, it is already disyllabic. In other words, it already looks like a Loma verb and nothing need be added to it. On the other hand, in cases where the verb stands alone, i.e. without a following particle, if a paragogic vowel is added, the result is the canonical CVCV. (In contrast, if the final consonant is deleted, a monosyllabic verb remains.) This suggests that the speakers furthest from English, by showing a strong preference in LIE for disyllabic verbs, retain the Loma verb template. This view is supported by the fact that the operation of paragoge is confined—in the present sample at least—to monosyllabic verbs. Paragoge applied to a disyllabic verb moves it away from, rather than towards, the Loma template. In short, by their frequent use of paragoge the most basilectal speakers are the ones who conform most strongly to the Loma pattern.

As for the English facts and their bearing upon the choice between paragoge and deletion, within Liberia English is the prestige norm. Thus, that speech which sounds most like English is going to be the most highly valued. I would speculate that verbs whose final consonant has been deleted sound more English-like than verbs to which an extra syllable has been added, the addition of a syllable being

[31]Robin Sabino [p.c.] called my attention to this link between Loma verb structure and LIE paragoge, but it is also Robin who pointed out to me the anomaly that this approach, if valid, does not account for the behavior of nouns and adjectives, which are also ordinarily CVCV in Loma yet are largely immune to paragoge in LIE.

more salient perceptually than the loss of a single syllable-final consonant, particularly in a syllable-timed language like LIE.

A related point about LIE involves fluency and speed. When these obtain, fast-speech phenomena arise, and segments get reduced and even deleted. Because deletion is in general a cornerstone of fast speech, the LIE rule of deletion fits right into the model, while paragoge stands as a step in the opposite direction. That is not to say that there are no fast talkers among the paragoge-using speakers of Liberian English. There clearly are. I am instead offering a general proposition about the correlation of deletion with fast speech and the subsequent assignment of social weight to the fast-speech variant.

I take paragoge to be an old rule, one that may have arisen or, alternatively, been preserved as a result of the alternation of verb forms between the stem form and the suffixed form, e.g. *tek/tekẽ* 'take'/'taking'. (I think it likely that suffixed forms, at least of some verbs, have been a part of the pidgin from the outset. Whether the suffix was meaningfully interpreted is an entirely different question.) While deletion and glottal-stop formation are alike in correlating with more mesolectal speech, I think that their histories are quite different. Glottal-stop formation, it seems to me, is a rule that has been introduced to the basilect from the mesolect, a rule that is working its way down.[32] Deletion, on the other hand, is surely a rule of long standing. After all, for lexical items other than verbs, deletion is the primary strategy used by all of the basilect to address the problem of the word-final consonant. (And where resyllabification is not an option, deletion is the only strategy for these words.) I have presented arguments as to why deletion is more compatible with mesolectal language and parogoge less compatible. If the two rules are both ones of long standing, the question arises as to how the social differentiation that exists between them came to be put into practice. I would suggest that, so long as the two rules co-existed, paragoge was the dominant rule for verbs. Then, as paragoge took on a negative social evaluation, less basilectal speakers would have begun to stop using it so much, the increased use of deletion arising to fill the vacuum. The fact that it is not the increased presence of verb-final consonants that replaces paragoge but rather an increased occurrence of deletion fits in with an observation by Washabaugh [1977:334] that the "strongest motive for variation in decreolization is the pressure to avoid the basilect, not the pressure to acquire the acrolect". That is, paragoge is shunned, but English verbs with their final consonants intact are not adopted. While less basilectal speakers

[32]Glottal stops have no status in Loma [David Dwyer, p.c.] or in Liberia's Mande languages in general. As far as I know, the only use of glottal stops in the phonology of any of Liberia's Niger-Congo languages involves the Jlao (Sasstown) dialect of the Kru language Klao, where a glottal stop has replaced /k/. It is possible that the rule has come into Liberian English from other varieties of English, in particular Liberian Settler English. This variety is spoken by those whose ancestors were the African-American immigrants to Liberia in the nineteenth century (cf. Singler [1989]). The existence of such a rule in this variety could have given rise to the mesolectal pidgin rule.

would have been making the switch from paragoge to deletion, more basilectal speakers would have done so less vigorously if at all. The result of change in the upper basilect and a relative lack of change in the lower basilect would yield the social differentiation that obtains today.

Given its social standing, the question arises as to the future of paragoge. Formal education in English has entered the Mande-speaking area; since the 1960's elementary schools have been ubiquitous even though attendance is not universal and the dropout rate overwhelming. The presence of the schools has had the effect of introducing the mesolect into the region itself, a development that may well hasten the decline of paragoge. The disappearance of this rule, if it comes to pass, should not be equated with the disappearance of Mande influence on LIE syllable structure conditions, for this is an influence that persists, not only in the basilect but also in the mesolect and beyond.

APPENDIX

Probabilities for paragoge, resyllabification, deletion, and glottal-stop formation, all factor groups

Listed below for each rule are those factor groups that are statistically significant for its operation. They are listed in order of decreasing statististical significance. The threshold for statistical significance is $p < .05$.

PARAGOGE

More basilectal speakers		**Less basilectal speakers**	
Vowel Height		Following phonological environment	
high	.25	consonant	.42
mid	.80	vowel	.76
low	.43	pause	.31
Verb-final consonant		Verb-final consonant	
/p/	.85	/p/	.56
/t/	.29	/t/	.26
/k/	.45	/k/	.25
/v/	.43	/v/	.72
/s/	.69	/s/	.75
/l/	.25	/l/	.45
Following grammatical environment		Following grammatical environment	
NP	.72	NP	.78
pronoun	.34	pronoun	.22
adverb/PP	.42	adverb/PP	.31
particle	(.00)	particle	.68
		Vowel height	
		mid	.65
		non-mid	.35
input	.49	input	.13
$p < .000$		$p < .035$	

RESYLLABIFICATION

Following grammatical environment

NP	.10
pronoun	.93
adverb/PP	.37
particle	.53

Final consonant plus following phonological element

/*s*/-nasal	.90
stop-V	.84
stop-/*h*/	.62
stop-liquid	.57
nonstop-V	.17

Frequency of occurrence

frequent	.14
infrequent	.86

Speaker

Blaster	.06
Bottlepicker	.44
French Soldier	.79
Overseer	.19
PFC	.48
Tailor	.51
Tapper	.96

input	.56

$p < .001$

DELETION

Verb-final consonant

/*p*/	(.00)
/*t*/	.67
/*k*/	.35
/*v*/	.40
/*s*/	.13
/*l*/	.90

Speaker

Blaster	.80
Bottlepicker	.75
French Soldier	.63
PFC	.66
Tailor	.07
Tapper	.22

Following phonological environment

consonant	.77
vowel	.08
pause	.78

Following grammatical environment

NP	.31
pronoun	.51
adverb/PP	.69
particle	.48

input	.21

$p < .005$

GLOTTAL-STOP FORMATION

Following grammatical environment

NP, adverb/PP	.80
PRO, particle	.20

Speaker/following phonological environment

Blaster, Bottlepicker/vowel	.77
All other tokens	.23

Frequency of occurrence

frequent	.72
infrequent	.28

input .09
$p < .045$

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