

# THE EPENTHETIC AND PARAGOGIC VOWELS OF PIJIN

ANDREI A. AVRAM

**Abstract.** Previous analyses of epenthesis and paragoge in Pijin account for the nature of both the epenthetic and paragogic vowel in terms of rules of vowel harmony. These rules are said to apply to the choice of the vowel of the transitive suffix as well. The present paper proposes an alternative analysis of the factors determining the quality of the epenthetic or paragogic vowels. Three such factors are identified: vowel copying, labial attraction and the use of two default vowels. These are also shown to account for the choice of the vowel of the transitive suffix. On this analysis, vowel harmony does not determine in any way the quality of the epenthetic or paragogic vowel in Pijin.

## 1. INTRODUCTION

The aim of the present article is threefold: (i) to identify the factors involved in epenthesis and paragoge in Pijin<sup>1</sup> which have gone unnoticed in the literature; (ii) to propose a new analysis of epenthesis and paragoge; (iii) to evaluate the alleged role of vowel harmony in epenthesis or paragoge.

The article is organized as follows. Section 2 presents the system of vocalic and consonantal phonemes and the syllable structure of Pijin. Section 3 discusses the previous accounts of the choice of the epenthetic and paragogic vowels in Pijin. A new analysis is proposed in section 4. Circumstantial evidence in support of this new analysis is presented in section 5, which looks into the mechanisms accounting for the quality of the vowel of the transitive suffix in Pijin. The findings are summarized in section 6.

All examples are rendered in the orthography or in the system of transcription used in the sources mentioned. For all forms discussed the etymon and the gloss are also indicated. Epenthetic and paragogic vowels appear in boldface.

## 2. AN OVERVIEW OF PIJIN PHONOLOGY

According to the descriptions in Jourdan (2003 and 2004), Jourdan and Selbach (2004), Jourdan (2007), the vowel system of Pijin consists of five monophthongs and of three diphthongs:

<sup>1</sup> Also known as Solomon Islands Pidgin English.

## (1) a. monophthongs:

	front	central	back
high	i		u
mid	e		o
low		a	

## b. diphthongs:

ae  
ao  
oe

There appears to be no significant variation in the phonetic realization of vowels. Jourdan (2007: 108) only mentions the fact many speakers distinguish between short vowels like [a] in [puskat] ‘cat’ and long vowels such as [a:] in [ba:] ‘bar’.

Pijin basically has the following system of consonantal phonemes (based on Jourdan 2007: 109):

	Labial	Alveolar	palatal	velar	laryngeal
Stops	p	t		k	h
	b	d		g	
Fricatives	f	s			
	v				
Affricates			tʃ		
			dʒ		
Nasals	m	n			
Liquids		l			
		r			
Glides	w	j			

According to Keesing (1991a: 316-317), Pijin is “still connected to particular groups of [Eastern Oceanic] languages”. Similarly, Jourdan and Keesing (1997: 402) state that “most speakers of [...] Solomon Pijin can still calque heavily and directly on their first languages”. Accordingly, the phonetic realization of some consonantal phonemes varies widely, in accordance with the phonological system of the first languages<sup>2</sup> of the speakers of Pijin. As noted by Jourdan and Keesing (1997: 409), “given that more than 60 languages [...] are spoken in the Solomons, this immediately imposes considerable diversity in speech patterning among bush speakers”. For instance, the voiceless oral stop /p/ may be realized as [b] or [ʰb]; the voiced oral stops /b/, /d/ and /g/ are also realized as the pre-nasalized stops [ᵐb], [ᵐd] and [ᵐg] respectively<sup>3</sup>; the voiceless fricative /f/ may be realized as [p]; the voiceless affricate /tʃ/ is also realized as [s] or [ʃ]; the voiced affricate /dʒ/ is also

<sup>2</sup> These include Kwaio, To’aba’ita, Arosi, Gela, Kwara’e, Lau, Oroha, Sa’a / Ulawa, ’Are’are and Talise (Jourdan and Keesing 1997: 409, Siegel 2008: 195). For the languages spoken in the Solomon Islands see Lynch (1998: 36 and 48).

<sup>3</sup> See also Lee (2008: 57).

realized as [s] or [dj]. Consider the following examples of what Jourdan and Keesing (1997: 409) refer to as “consonant substitution to fit the phonology of the speaker’s first language”<sup>4</sup>:

- (3) a. L1 Kwaio, which lacks /p/:  
       **bilai** (< *play*) ‘play’  
       b. L1 Lau, which lacks /p/:  
       **sia<sup>m</sup>bu** (< *jump*) ‘jump’  
       c. L1 ’Are’are, which lacks /b/:  
       **perem** (< *bury, him*) ‘bury’  
       d. L1 Talise, which lacks /f/:  
       **pinis** (< *finish*) ‘finish’  
       e. L1 Kwaio, which lacks /dʒ/:  
       **Diapane** cf. *Japan* (< *Japan*) ‘Japan’  
       f. L1 Lau, which lacks /dʒ/:  
       **sia<sup>m</sup>bu** (< *jump*) ‘jump’

As for its syllable structure, Pijin allows two- and three-consonant clusters in the onset, but disallows clusters in coda position. The syllable structure of Pijin thus differs in complexity from that of its substrate languages. Generally, in the Oceanic languages “syllable structures tend to approximate a simple CV type” (Lynch et al. 2002: 34). As mentioned by Jourdan and Keesing (1997: 413-414), “consonant clusters are rare in the vernacular languages [of the Solomons], where the regular phonological pattern are CVCV and VCVCV”. Lynch (1998: 83) writes that “languages that allow only open syllables occur in [...] the southeastern Solomons”. Finally, Jourdan and Selbach (2004: 699) also note that “consonant clusters do not occur in most of the languages of the Solomon Islands”. Consequently, as shown e.g. by Jourdan (2003 and 2007: 110-111), there is considerable inter-speaker variation in Pijin with respect to both onset clusters and codas. Consider the reflexes of English spoon, exhibiting different degrees of syllable structure complexity:

- (4) a. *spun* / **supun** / **supuni** (< *spoon*) ‘spoon’

As can be seen, Pijin reflexes of the same etymon may have: a complex onset and a simple coda; simple syllabic margins exclusively; open syllables only. The last two types of variant contain epenthetic and paragogic vowels, the topic of the next two sections.

### 3. PREVIOUS ANALYSES OF THE EPENTHETIC AND PARAGOGIC VOWELS OF PIJIN

Several previous works account for epenthesis and paragoge in Pijin in terms of vowel harmony. Jourdan (2003) states that “speakers will tend to insert

<sup>4</sup> The L1-influenced consonant appears in boldface.

epenthetic vowels in Pijin words in order to avoid clusters” and that “the choice of the vowel is directed by a rule of vowel harmony.” Jourdan and Selbach (2004: 699) write that “speakers will tend to insert epenthetic vowels in Pijin words to avoid clusters”. In their opinion, “the choice of the vowel is directed by rules of vowel harmony” (Jourdan and Selbach 2004: 699). Finally, Jourdan (2007: 110) notes that “the Solomonians will tend to insert a vowel between the consonants of words borrowed from English” and concludes that “the rule of vowel harmony governs the choice of the vowel which will be used.” As for paragoge, Jourdan and Selbach (2004: 700) write that it “is used in avoidance of word-final clusters” and that “most rural speakers, and older speakers for whom vernaculars are the overwhelming medium of communication will tend to add a final vowel to Pijin words derived from English words ending in a consonant”. According to Jourdan and Selbach (2004: 700), the paragogic vowel is selected “according to the same principle of vowel harmony”. More recently, Jourdan (2007: 110) also states that this applies “in a similar way” to paragoge”.

However, the rule of vowel harmony assumed to apply both in epenthesis and paragoge is never formulated. An explicit account in terms of vowel harmony is proposed only for the selection of the vowel of the transitive suffix (Jourdan 2004: 710, Jourdan and Selbach 2004: 706, Jourdan 2007: 183-184). Thus, according to Jourdan (2004: 709), the vowel of the transitive suffix “varies according to a rule of vocalic harmony between the stem of the verb and the transitive suffix”:

(5) verb stem vowel    transitive suffix

-a	-em
-e	-em
-i	-im
-o	-em
-u	-um

Jourdan (2004: 709) further writes that “this rule [of vowel harmony] is more or less regular”.

Jourdan and Selbach (2004: 706) also state that “the vowel in -Vm is selected with respect to rules of vowel harmony”. On their analysis, “roots containing mid and low vowels take -em as a suffix, but roots with high vowels will take the identical high vowel in the suffix, -im or -um”. They also write that “[t]he specific rules of vowel harmony can [...] vary from one speaker to the next” (Jourdan and Selbach 2004: 706). While acknowledging that the “variation in the realization of the vowel in the transitivizing suffix is large”, they claim that “vowel harmony nevertheless determines the insertion of the vowel into the suffix” (Jourdan and Selbach 2004: 707).

In the most recent description of Pijin, Jourdan (2007) slightly modifies the analysis of the vowel of the transitive suffix. In this new version “transitive verbs are built by adding a transitivity suffix /-em/, /-im/, /-um/, /-om/ to the root”

(Jourdan 2007: 183). The rule of vowel harmony is reformulated as follows: “the choice of the appropriate suffix is made depending on the vowel harmony between the last vowel of the root of the verb and that of the transitivity suffix” (Jourdan 2007: 183):

(6) last vowel of verb root	transitive suffix
-a	-em, -om
-e	-em
-i	-im
-o	-em, -om
-u	-um

A number of objections can be raised with respect to the above formulations of the rule of vowel harmony. First, vowel harmony is normally regular across speakers<sup>5</sup>, hence inter-speaker variation should not occur. Second, a high vowel as the last one in the root actually triggers vowel copying, not vowel harmony. Third, the transitive suffix never has the form *-om*, as stated by Jourdan (2007: 184). This claim is based on a faulty morphological analysis. As shown below, the vowel /o/ is actually part of the root of the verb, not of the transitive suffix:

- (7) a. *falo-m* vs. \**fal-om* (<follow) ‘follow’  
 b. *boro-m* vs. \**bor-om* (<borrow) ‘borrow’

Jourdan and Selbach (2004: 707) also write that “[t]he quality of the vowels added to the stem is determined by the stem” and that “this applies for epenthesis, paragogue and suffixation of the transitive suffix”. It follows that the same rules posited for the choice of the vowel in the transitive suffix also operate in epenthesis and paragoge. The only way in which these rules could possibly apply would be to assume that the quality of the intrusive vowel is determined by the following vowel in epenthesis into word-initial onset clusters, but by the preceding vowel in epenthesis into coda clusters and in paragoge:

(8) following / preceding	intrusive
vowel	vowel
-a	-e
-e	-e
-i	-i
-o	-e
-u	-u

To sum up, on these vowel harmony analyses (henceforth VHA), the quality of the intrusive vowel, whether epenthetic or paragogic, is assumed to be determined by rules of vowel harmony, exactly as in the case of the vowel of the transitive suffix.

<sup>5</sup> Of the same variety.

#### 4. THE EPENTHETIC AND PARAGOGIC VOWELS OF PIJIN REVISITED

Both epenthesis and paragoge must have occurred much more frequently in earlier stages of Pijin<sup>6</sup>. However, the data examined include very few examples from early written records of Pijin, such as Keesing (1991b), Tryon and Charpentier (2004), Avram (2005 and 2007), Jourdan (2007). The early written records available provide unfortunately little insight into the phonology, given the faulty transcriptions or the tendency of English-speaking transcribers towards a normalizing orthography, frequently restoring English-like forms<sup>7</sup>. The unavailability of significant evidence regarding epenthesis and paragoge in early Pijin is somewhat compensated for by the inclusion of forms attested in the so-called “bush pidgin”<sup>8</sup>, from Keesing (1991a), Jourdan and Keesing (1997), and from transcripts of recordings by Jourdan (2003 and 2007) of elderly speakers who must have learned Pijin in the 1930s or in the 1940s. Methodologically, this decision can be defended on the following grounds. First, as put by Goulden (1990: 54), ““bush” varieties of Pidgin English conserve archaic material and thus provide insights into the history and development of MPE”<sup>9</sup>. Second, as noted by Jourdan and Keesing (1997: 408), “bush speakers use a Pijin phonology that fits the phonemic systems and phonological patterns of their first languages”. It is assumed that such forms reflect, faithfully enough, the phonology of earlier Pijin, in accordance with what Rickford (1986: 162) calls “feed-back from current usage”. In the case of Pijin “current usage” refers to forms elicited from rural speakers since, as noted by Jourdan and Keesing (1997: 413), urban, creolizing pidgin is characterized by the “disappearance of interconsonantal and epenthetic vowels”. Finally, also included are forms attested in dictionaries (Jourdan 2002, Beimers 2006), glossaries (Jourdan 2007: 116-172), phrasebooks (Lee 2008) and in the magazine *Link Komik* (n. d.).

The forms in the corpus in which either epenthesis or paragoge occurs are examined in light of the predictions made by VHA discussed in section 3. Consider first the resolution of word-initial onset clusters. Epenthetic [i] can break up /s/ + consonant clusters:

- (9) a. *sikin* (< *skin*) ‘skin’  
 b. *silip* (< *sleep*) ‘sleep’  
 c. *sikarapu* (< *scrub*) ‘bush’  
 d. *sitoe* (< *store*) ‘store’  
 e. *simel* (< *smell*) ‘smell’

<sup>6</sup> For an analysis of syllable restructuring in early Pijin, see Avram (2005) and (2007a).

<sup>7</sup> For a discussion of these issues see Hancock (1977) and Avram (2000).

<sup>8</sup> Also called “Plantation Pidgin” (Jourdan and Keesing 1997).

<sup>9</sup> MPE = Melanesian Pidgin English.

As can be seen, in (9c) the epenthetic vowel is [i], and the following vowel is /a/. In (9d) the epenthetic vowel is also [i], and the following vowel is /o/. Finally, in (9e) the epenthetic vowel is again [i], and the following vowel is /e/. VHA predicts the epenthesis of [e] in both these cases. The vowel [u] is epenthesized, if the following vowel is /u/, as predicted by VHA:

- (10) a. *supun* (< *spoon*) ‘spoon’  
 b. *sukulu* (< *school*) ‘school’

Consider next the adjustment of stop + liquid clusters. Either [i] or [e] may be epenthesized when the following vowel is /e/.

- (11) a. *piles* (< *place*) ‘place’  
 b. *birek* (< *break*) ‘break’  
 c. *pelet* (< *plate*) ‘plate’

The prediction of VHA, i.e. epenthetic [e], is borne out only by the form in (9c). A stop + liquid cluster is also broken up by [i] when the following vowel is /a/:

- (12) *bilai* (< *play*) ‘play’

VHA predicts [e]. The epenthetic vowel may again be [i] when the following vowel is /o/:

- (13) *kilok* (< *clock*) ‘clock’

According to VHA the epenthetic vowel should be [e]. In a number of forms stop + liquid clusters are broken up by [a] if the following vowel is /a/, including in the diphthong /ae/:

- (14) a. *parapela* (< *propeller*) ‘propellor’  
 b. *barata* (< *brother*) ‘brother’  
 c. *tarae* (< *try*) ‘to try’  
 d. *kalaem* (< *climb*) ‘to climb’  
 e. *karae* (< *cry*) ‘to cry’  
 f. *garanim* (< *grind, him*) ‘to grind’

VHA predicts the occurrence of epenthetic [e] in all these cases. Stop + liquid clusters may be resolved by epenthesizing [u] when the following vowel is /u/:

- (15) *turu* (< *true*) ‘really’

This is in accordance with the predictions of VHA. However, either [u] or [i] may occur if the following vowel is /e/ or /a/, as in the following competing variants:

- (16) a. *pulande* (< *plenty*) ‘plenty’  
 b. *pilenti* (< *plenty*) ‘plenty’

VHA predicts [e] in both cases. Finally, stop + liquid clusters are broken up by [o], if the following vowel is /o/, as predicted by VHA:

- (17) a. *dorop-em* (< *drop*) ‘drop’  
 b. *koros-im* (< *cross*) ‘cross’  
 c. *torou-em*<sup>10</sup> (< *throw, him*) ‘throw’

<sup>10</sup> The Pijin reflex of English /θ/ is /t/.

Fricative + liquid clusters are also subject to epenthesis. Consider first a form in which [i] is epenthesized:

(18) *filen*<sup>11</sup> (< *plane*) ‘plane’

VHA predicts the occurrence of epenthetic [e] since the following vowel is also /e/. When the following vowel is /a/ the epenthetic vowel is also [a], not [e] as predicted by VHA:

(19) *faraepenim* (< *fry, pan, him*) ‘fry’

Epenthesis of [o] is also attested if the following vowel is /o/:

(20) *forom* (< *from*) ‘from’

Here again VHA predicts the use of epenthetic [e].

Epenthesis is a repair strategy used for the resolution of coda clusters as well. Thus, in reflexes of stop + /s/ coda clusters the epenthetic vowel is [i] if the preceding vowel is also /i/, as predicted by VHA:

(21) *mikis* (< *mix*) ‘mixture’

These clusters are also broken up by either [i] or [e] when the preceding vowel is /e/:

(22) a. *fenis* (< *fence*) ‘fence’

b. *nekistumoro* (< *next, tomorrow*) ‘the day after tomorrow’

c. *nekes* (< *next*) ‘next’

VHA predicts the occurrence of epenthetic [e] exclusively. If the preceding vowel is /a/, the epenthetic vowel is [i]. Consider the following examples<sup>12</sup>:

(23) a. *takis* (< *tax*) ‘tax’

b. *manis* (< *month*) ‘month’

c. *banis* (< *bunch*) ‘bunch’

d. *oranis* (< *orange*) ‘orange’

VHA predicts [e] in all the above forms. Similarly, instead of the epenthetic [e] predicted by VHA, [i] also occurs when the preceding vowel is /o/:

(24) *bokis* (< *box*) ‘box’

Word-internal codas are also resolved by epenthesis. As predicted by VHA, the epenthetic vowel is [e] when the preceding vowel is the diphthong /ae/:

(25) *waetemane* (< *white, man*) ‘white man, European’

Contrary to the predictions of VHA, when the preceding vowel is /o/ the epenthetic vowel is [o], not [e]:

(26) a. *solodia* (< *soldier*) ‘soldier’

b. *solowata* (< *salt, water*) ‘sea’

The findings so far are set out in (27), where the epenthetic vowel predicted by VHA is compared to the one actually attested. All the types of onset and coda clusters as well as of word-internal codas resolved via epenthesis are illustrated with one form. Instances where the epenthetic vowel predicted by VHA differs from the actually occurring one are highlighted in boldface.

<sup>11</sup> In this form /f/ is the reflex of English /p/. Kwaio, the L1 of the speaker, lacks /p/.

<sup>12</sup> Note that /s/ is the reflex of English /θ/ in 22b, of /tʃ/ in 22c and of /dʒ/ in 22d.



(27)	Form	Epenthetic vowel predicted by VHA	Actually occurring epenthetic vowel
	<i>sikarapu</i>	[e]	[i]
	<i>sikin</i>	[i]	[i]
	<i>sitoa</i>	[e]	[i]
	<i>simel</i>	[e]	[i]
	<i>silip</i>	[i]	[i]
	<i>supun</i>	[u]	[u]
	<i>piles</i>	[e]	[i]
	<i>pelet</i>	[e]	[e]
	<i>bilai</i>	[e]	[i]
	<i>kilok</i>	[e]	[i]
	<i>barata</i>	[e]	[a]
	<i>turu</i>	[u]	[u]
	<i>pulande</i>	[e]	[u]
	<i>pilenti</i>	[e]	[i]
	<i>doropem</i>	[o]	[o]
	<i>filen</i>	[e]	[i]
	<i>faraepenim</i>	[e]	[a]
	<i>forom</i>	[o]	[o]
	<i>mikis</i>	[i]	[i]
	<i>nekistumoro</i>	[e]	[i]
	<i>nekes</i>	[e]	[e]
	<i>takis</i>	[e]	[i]
	<i>bokis</i>	[e]	[i]
	<i>waetemane</i>	[e]	[e]
	<i>solodia</i>	[e]	[o]

As can be seen, VHA fares rather poorly. VHA correctly predicts the epenthetic vowel in only 10 out of 25 cases, i.e. in only 40% of the instances of epenthesis as a repair strategy resolving the various onset or coda clusters and word-internal codas. VHA cannot even predict the occurrence of epenthetic [a] and [o]. As shown above, their epenthesis is triggered by a following /a/ and respectively by a preceding or following /o/. In all these cases VHA wrongly predicts that [e] should be selected as the epenthetic vowel.

Unlike VHA, the alternative account of epenthesis in Pijin outlined below takes into account not only the nature of the preceding or following vowel but also that of adjacent consonants. Moreover, it is suggested that Pijin has two default epenthetic vowels. The analysis developed here is illustrated with forms from (27), repeated below for ease of exposition.

Epenthesis of [a] is exclusively due to vowel copying. The vowel [a] is inserted into an original cluster only if the following vowel is also /a/:

(28) a. *barata* (< *brother*) ‘brother’

b. *faraepenim* (< *fry, pan, him*)

Epenthetic [u] obtains via vowel copying, i.e. it is a copy of a following /u/:

(29) a. *supun* (< *spoon*) ‘spoon’

b. *туру* (< *true*) ‘true’

However, [u] is also epenthesized after a labial consonant. Therefore, in these cases epenthesis of [u] is an instance of labial attraction:

(30) *pulande* (< *plenty*) ‘plenty’

Circumstantial evidence in support of this analysis is offered by the occurrence of the following variant of the possessive preposition *bilong*:

(31) *bulong* (< *belong*) ‘of’

As can be seen, labial attraction leads to the use of [u] instead of the expected [i].

Epenthesis of [o] occurs only if the following vowel is also /o/, i.e. it is an instance of copy vowel epenthesis:

(32) a. *doropem* (< *drop*) ‘drop’

b. *forom* (< *from*) ‘from’

Here again circumstantial evidence can be adduced. Consider the following variant of the possessive preposition *bilong*, in which the [o] occurs instead of the expected [i]:

(33) *bolong* (< *belong*) ‘of’

As for [i] and [e], these appear to be the default epenthetic vowels of Pijin. Their occurrence can be triggered by vowel copying. However, if neither vowel copying nor labial attraction occurs the epenthetic vowel is always [i] or [e]. Moreover, epenthetic [i] and [e] are attested in the same phonological environments, e.g. between the voiceless stop /p/ and the liquid /l/:

(34) a. *piles* (< *place*) ‘village’

b. *pelet* (< *plate*) ‘plate’

Finally, epenthetic [i] and [e] occasionally appear in reflexes of the same etymon. Consider the reflexes of English *next* in the words below:

(35) a. *nekistumoro* (< *next, tomorrow*) ‘the day after tomorrow’

b. *nekes* (< *next*) ‘next’

The preferred default epenthetic vowel is [i], which occurs in a larger number of phonological contexts.

Let us now turn to paragoge and the predictions of VHA regarding the nature of the paragogic vowel. Word-final coda clusters are normally resolved either through epenthesis, as illustrated by examples (21)-(24), or through the deletion of the final consonant<sup>13</sup>. However, coda clusters are occasionally adjusted via paragoge. If the preceding vowel is /i/ the paragogic vowel is also [i], as predicted by VHA:

(36) a. *isti* (< *east*) ‘east’

b. *pristi* (< *priest*) ‘priest’

<sup>13</sup> See Avram (2007).

Epenthetic [i] also occurs when the preceding vowel is /e/:

- (37) a. *endi* (< *end*) 'end'  
 b. *westi* (< *west*) 'west'

VHA predicts the choice of [e] as the paragogic vowel.

Consider next reflexes of simple word-final codas. Paragoge is attested in a considerable number of forms in the corpus. Thus, the paragogic vowel is [i] if the preceding vowel is /i/:

- (38) a. *sipsipi*<sup>14</sup> (< *sheep*) 'lamb'  
 b. *biki* (< *big*) 'big'  
 c. *bikibiki*<sup>15</sup> (< *pig*) 'pig'  
 d. *kiki* (< *kik*) 'kick'  
 e. *siki* (< *sick*) 'sick'  
 f. *silifi* (< *sleep*) 'sleep'  
 g. *finisi* (< *finish*) 'finish'  
 h. *kabisi* (< *cabbage*) 'leafy greens'  
 i. *winisi* (< *winch*) 'winch'

This is accordance with the predictions of VHA.

Either [i] or [e] occurs when the preceding vowel is /e/ or the diphthong /ae/:

- (39) a. *gobeke* (< *go back*) 'go bak'  
 b. *seke* (< *check*) 'check'  
 c. *legi* (< *leg*) 'leg'  
 d. *nese* (< *nurse*) 'nurse'  
 e. *oraete* (< *alright*) 'alright'  
 f. *faeti* (< *fight*) 'fight'  
 g. *naeti* (< *night*) 'night'  
 h. *baeki* (< *back*) 'back'

VHA predicts the occurrence of paragogic [e] exclusively.

If the preceding vowel is /a/, the paragogic vowel is either [i] or [e]:

- (40) a. *lake* (< *luck*) 'luck'  
 b. *trake* (< *truck*) 'truck'  
 c. *faki* (< *fuck*) 'shit'  
 d. *hanwasi* (< *hand, watch*) 'watch'  
 e. *Diapane* (< *Japan*) 'Japanese'  
 f. *waeteman* (< *white man*) 'white man'  
 g. *aelani* (< *island*) 'island'  
 h. *Japani* (< *Japan*) 'Japanese'  
 i. *olomani* (< *old man*) 'old man'

VHA predicts paragogic [e] in all these cases. The paragogic vowel can also be [a], as illustrated by the forms below:

<sup>14</sup> With total reduplication.

<sup>15</sup> With total reduplication.

- (41) a. *bata* (< *but*) 'but'  
 b. *ambaka* (< *humbug*) 'trick'  
 c. *waka* (< *work*) 'work'  
 d. *banga* (< *bang*) 'bang'

VHA predicts the occurrence of [e].

In accordance with the predictions of VHA, [u] is the paragogic vowel if the preceding vowel is /u/:

- (42) a. *gutu* (< *good*) 'goods'  
 b. *ruku* (< *look*) 'look'  
 c. *sukulu* (< *school*) 'school'

The forms below exhibit paragogic [i]. Since the preceding vowel is /u/, VHA predicts the choice of [u]:

- (43) a. *parasuti* (< *parachute*) 'parachute'  
 b. *suti* (< *shoot*) 'shoot'  
 c. *nogudi* (< *no good*) 'bad'

The vowel [u] also occurs if the preceding vowel is /e/:

- (44) *hemu* (< *him*) 'he'

VHA predicts the occurrence of paragogic [e]. Paragogic [u] is also attested in several forms in which the preceding vowel is /a/:

- (45) a. *go apu* (< *go up*) 'go up'  
 b. *isitapu* (< *stop*) 'stay'  
 c. *sikarapu* (< *scrub*) 'bush'  
 d. *sia<sup>m</sup>bu* (< *jump*) 'jump'  
 e. *antafu* (< *on top*) 'on'  
 f. *koafu* (< *go up*) 'go up'  
 g. *lafu* (< *laugh*) 'laugh'  
 h. *kamu* (< *come*) 'come'

In all these words the paragogic vowel predicted by VHA is [e]. Finally, one form in the corpus shows that paragogic [u] also occurs if the preceding one is /o/:

- (46) a. *robu* (< *rope*) 'vine'

This again runs counter to VHA, which predicts the occurrence of [e].

Forms exhibiting paragogic [o] are exclusively those in which the preceding vowel is also /o/:

- (47) a. *toko* (< *talk*) 'talk'  
 b. *longo* (< *along*) 'in'  
 c. *toko* (< *toko*) 'talk'

VHA predicts the selection of [e] as the paragogic vowel. In a large number of forms the paragogic vowel is either [i] or [e] although the preceding one is /o/ or the diphthong /ao/:

- (48) a. *loti* (< *road*) 'road'  
 b. *ae fosi* (< *air force*) 'air force'  
 c. *bikosi* (< *because*) 'because'

- d. *bosi* (< boss) ‘boss’
- e. *siosi* (< church) ‘choose’
- f. *olobaoti* (< all about) ‘all over’
- g. *daoni* (< down) ‘down’
- h. *Solomone* (< Solomon) ‘Solomon’
- i. *olraone* (< all round) ‘all around’
- j. *taone* (< town) ‘town’

The occurrence of [i] in the words under (48) runs counter to the predictions of VHA, according to which the paragogic vowel should be [e].

The types of paragoge identified are exemplified in (49) with one relevant form. The paragogic vowel predicted by VHA is compared with the actually occurring one. Instances where the two vowels differ appear in boldface:

(49) Form	Paragogic vowel predicted by VHA	Actually occurring paragogic vowel
<i>isti</i>	[i]	[i]
<i>westi</i>	<b>[e]</b>	<b>[i]</b>
<i>biki</i>	[i]	[i]
<i>legi</i>	<b>[e]</b>	<b>[i]</b>
<i>nese</i>	[e]	[e]
<i>oraete</i>	[e]	[e]
<i>naeti</i>	<b>[e]</b>	<b>[i]</b>
<i>Diapane</i>	[e]	[e]
<i>Japani</i>	<b>[e]</b>	<b>[i]</b>
<i>waka</i>	<b>[e]</b>	<b>[a]</b>
<i>sukulu</i>	[u]	[u]
<i>suti</i>	<b>[u]</b>	<b>[i]</b>
<i>hemu</i>	<b>[e]</b>	<b>[u]</b>
<i>lafu</i>	<b>[e]</b>	<b>[u]</b>
<i>robu</i>	<b>[e]</b>	<b>[o]</b>
<i>olo</i>	<b>[e]</b>	<b>[o]</b>
<i>bosi</i>	<b>[e]</b>	<b>[i]</b>
<i>daoni</i>	<b>[e]</b>	<b>[i]</b>
<i>taone</i>	[e]	[e]

VHA correctly predicts the paragogic vowel in only 7 out 19, i.e. in only 36.84% of the instances of paragoge. Moreover, VHA cannot predict the occurrence of [a] and of [o] as paragogic vowels. The former occurs when the preceding vowel is /a/ and the latter if the preceding vowel is /o/ or the diphthong /ao/. VHA wrongly predicts in both cases the occurrence of [e] as the paragogic vowel.

As in the case of epenthesis, the analysis of paragoge proposed here also considers the potential effect of adjacent consonants and suggests that there are two default paragogic vowels. The analysis is illustrated with forms from (49), repeated below for ease of exposition.

Paragogic [a] only appears in words in which the preceding vowel is also /a/. Such forms therefore illustrate copy vowel paragoge:

- (50) *waka* (< *work*) ‘work’

Similarly, the occurrence of paragogic [u] is also due to vowel copying:

- (51) *sukulu* (< *school*) ‘school’

In addition, paragogic vowel [u] is the result of labial attraction:

- (52) a. *hemu* (< *him*) ‘he’  
 b. *lafu* (< *laugh*) ‘laugh’  
 c. *robu* (< *rope*) ‘vine’

The occurrence of paragogic [o] is exclusively due to vowel copying:

- (53) *toko* (< *talk*) ‘talk’

Finally, vowel copying can also trigger the occurrence of paragogic [i] and [e]. However, there is evidence showing that [i] and [e] are in fact the default paragogic vowels of Pijin. First, the epenthetic vowel is always either [i] or [e], if neither vowel copying nor labial attraction occurs. Second, both paragogic [i] and [e] are attested in the same phonological environments. For instance, either [i] or [e] occurs after /aet/:

- (54) a. *naeti* (< *night*) ‘night’  
 b. *oraete* (< *alright*) ‘alright’

Both [i] and [e] are found after /an/:

- (55) a. *Japani* (< *Japan*) ‘Japanese’  
 b. *Diapane* (< *Japan*) ‘Japanese’

Either [i] or [e] is the paragogic vowel after /aon/:

- (56) a. *daoni* (< *down*) ‘down’  
 b. *taone* (< *town*) ‘town’

Third, both [i] and [e] are attested in reflexes of the same etymon. Consider the reflexes of English *man* in the following forms:

- (57) a. *waeteman* (< *white man*) ‘white man’  
 b. *olomani* (< *old man*) ‘old man’

It appears that [i] is the preferred option as a default paragogic vowel since it occurs in a larger number of phonological environments.

## 5. THE VOWEL OF THE TRANSITIVE SUFFIX IN PIJIN

As mentioned in section 3, in previous works (Jourdan 2003, Jourdan and Selbach 2004 and Jourdan 2007) it is claimed that rules of vowel harmony also govern the choice of the vowel of the transitive suffix in Pijin in the variants [-im], [-em] and [-um]. Moreover, again as mentioned in section 3, the rules of vowel harmony in Pijin are specified only with respect to the quality of the vowel of the transitive suffix. If vowel harmony can be shown not to be the factor determining the vowel of the transitive suffix, this would further weaken the case for the role of vowel harmony in the selection of the epenthetic or paragogic vowel in Pijin.

Avram (2008 and 2009) examines the mechanisms involved in the selection of the vowel of the transitive suffix in Pijin. The results of this investigation are summarized in what follows. Thus, two factors are conducive to the occurrence of the form [-um]: vowel copying, as in (58a), or labial attraction, as in (58b). While the former is compatible with VHA, the occurrence of [u] after a labial consonant cannot even be envisaged by VHA which does not take into consideration the effect of adjacent consonants:

- (58) a. *hukum* (< *hook*) ‘hook’  
 b. *bomum* (< *bomb*) ‘bomb’

The vowel occurs in free variation<sup>16</sup> with [i] when the last vowel of the root is /u/:

- (59) *putum* / *putim* (< *put*) ‘put’

VHA predicts the occurrence of [u] exclusively.

Finally, [u] also occurs in free variation with [e] if the final consonant of the root is labial:

- (60) *pamum* / *pamem* (< *pump*) ‘pump’

VHA only predicts the choice of [e].

The form [-im] is attested in a large number of contexts. First of all it can occur when the last vowel of the root is /i/, /e/, the diphthong /ae/, /a/, /o/, the diphthong /ao/ or /u/:

- (61) a. *hitim* (< *hit*) ‘hit’  
 b. *trenim* (< *train*) ‘train’  
 c. *baptaesim* (< *baptise*) ‘baptise’  
 d. *pronansim* (< *pronounce*) ‘pronounce’  
 e. *strongim* (< *strong*) ‘strengthen’  
 f. *saonim* (< *sound*) ‘imitate a sound’  
 g. *kukim* (< *cook*) ‘cook’

VHA correctly predicts the nature of the vowel in only one case (61a): when the last vowel of the root is /i/. VHA wrongly predicts the occurrence of [e] in forms such as those in (61b)-(61f), in which the final vowel of the root is /e/, the diphthong /ae/, /a/, /o/ or the diphthong /ao/. Finally, VHA erroneously predicts [u] instead of the actually occurring [i] in forms such as the one in (61g), where the last vowel of the root is /u/.

As predicted by VHA, [e] is indeed the vowel of the transitive suffix if the last vowel of the root is /e/, the diphthong /ae/, the diphthong /oe/, /a/, /o/ or the diphthong /ao/:

- (62) a. *letem* (< *let*) ‘let’  
 b. *laekem* (< *like*) ‘like’  
 c. *joenem* (< *join*) ‘link’  
 d. *askem* (< *ask*) ‘ask’  
 e. *kolem* (< *call*) ‘call’  
 f. *daonem* (< *down*) ‘lower’

<sup>16</sup> Including intra-speaker variation, as shown in Avram (2008 and 2009).

However, in five of these phonological environments, namely when the last vowel of the root is /e/, /ae/, /a/, /o/ or /ao/, the vowel of the transitive suffix can also be [i], as seen in the forms under (61). Further, VHA cannot possibly account for the occurrence of [e] in the form below, in which it predicts [u] as the vowel of the transitive suffix:

(63) *kiurem* (< *cure*) ‘cure’

Moreover, VHA is incompatible with the large number of instances of free variation<sup>17</sup> between [i] and [e]. This free variation in the vowel of the transitive suffix is attested when the final vowel of the root is /e/, the diphthong /ae/, /a/, /o/ or the diphthong /ao/:

- (64) a. *mekim* / *mekem* (< make) ‘make’  
 b. *gaedim* / *gaedem* (< guide) ‘guide’  
 c. *wakim* / *wakem* (< work) ‘work’  
 d. *hotim* / *hotem* (< heat) ‘heat up’  
 e. *saotim* / *saotem* (< shout) ‘shout’

Finally, consider the following minimal pair:

(65) *agensim* (< *against*) ‘oppose’ vs. *agensem*<sup>18</sup> (< *against*) ‘against’

Not only does VHA not predict such instances, but the very possibility of such minimal pairs is ruled out by definition if one assumes rules of vowel harmony.

To sum up, the factors determining the quality of the vowel in the transitive suffix are essentially identical with those which have been shown to apply in epenthesis and paragoge. Thus, [u] is selected via vowel copying or labial attraction. Both [i] and [e] appear to function as default vowels since they compete mostly for the same environments, they may occur in free variation and they even occur in minimal pairs. As in epenthesis and paragoge, there is a preference for [i] as the vowel of the transitive suffix<sup>19</sup>.

## 6. CONCLUSIONS

The findings of the present paper can be summarized as follows.

The occurrence of intrusive [a] is due to vowel copying. VHA posits vowel copying only in the case of [i] and [u]. Moreover, VHA erroneously predicts [e] instead of the actually occurring [a].

<sup>17</sup> These include both inter- and intra-speaker variation. See the examples in Avram (2008 and 2009).

<sup>18</sup> This is a so-called prepositional verb. Prepositional verbs function as prepositions but retain morphologically the structure of transitive verbs (Keesing 1991b: 319, Jourdan 2007: 188). Some authors prefer the term verbal prepositions (Lee 2008: 65).

<sup>19</sup> In recently coined transitive verbs, including anglicized forms containing diphthongs otherwise not attested, e.g. *voutim* (< *vote*) ‘to vote’.



Intrusive [u] is the result of either vowel copying or labial attraction. VHA only considers the role of the preceding or of the following vowel, hence it cannot account for labial attraction, which illustrates the role of adjacent consonants in determining the quality of the epenthetic and respectively paragogic vowel.

Intrusive [o] obtains via vowel copying. VHA posits vowel copying only in the case of [i] and [u], and wrongly predicts [e] instead of the actually occurring [o].

Intrusive [i] and [e] are attested in the same phonological environments, occur in free variation and even in minimal pairs. VHA is incompatible with all these three situations.

To sum up, epenthesis and paragoge involve vowel copying, labial attraction and the use of the vowels [i] and [e] as default options. The same factors also account for the nature of the vowel of the transitive suffix. This constitutes further evidence that the quality of intrusive vowels in Pijin is not determined by rules of vowel harmony.

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