TABLE 7
CHART OF TONE PATTERNS

Tone Sequence	Two-syllable	Three-syllable	Four-syllable	Five-syllable	Six-syllable
High	´ ´	´ ´ ´	´ ´ ´ ´	´ ´ ´ ´	´ ´ ´ ´ ´ ´
High-low	´ `	´ ´ ` ´ ` `	´ ´ ´ ` ´ ´ ` ` ´ ` ` `	(´ ´ ´ ´ `) ´ ´ ´ ` ` ´ ´ ` ` ` ´ ` ` ` `	´ ´ ´ ´ ´ ` (´ ´ ´ ´ ` `) ´ ´ ´ ` ` ` ´ ´ ` ` ` ` ´ ` ` ` ` `
High-falling-low		´ ^ `	´ ´ ^ ` ´ ^ ` `	´ ´ ´ ^ ` (´ ´ ^ ` `) ´ ^ ` ` `	(´ ´ ´ ´ ^ `) (´ ´ ´ ^ ` `) ´ ´ ^ ` ` ` ´ ^ ` ` ` `
Falling-low	^ `	^ ` `	^ ` ` `	(^ ` ` ` `)	^ ` ` ` ` `
Low	` `	` ` `	` ` ` `	(` ` ` ` `)	(` ` ` ` ` `)
Low-high	` ´	` ` ´ ` ´ ´	` ` ` ´ ` ` ´ ´ ` ´ ´ ´	` ` ` ` ´ ` ` ` ´ ´ ` ` ´ ´ ´ ` ´ ´ ´ ´	` ` ` ` ` ´ ` ` ` ` ´ ´ ` ` ` ´ ´ ´ ` ` ´ ´ ´ ´ ` ´ ´ ´ ´ ´
Low-high-low		` ´ `	` ´ ` ` ` ´ ´ ` ` ` ´ `	` ´ ` ` ` ` ´ ´ ` ` ` ´ ´ ´ ` ` ` ´ ´ ` ` ` ´ ` ` ` ` ` ´ `	` ´ ` ` ` ` ` ´ ´ ` ` ` ` ´ ´ ´ ` ` ` ´ ´ ´ ´ ` ` ` ´ ´ ´ ` ` ` ´ ´ ` ` ` ` ´ ` ` ` ` ` ` ´ ` ` (` ` ` ´ ´ `) (` ` ` ` ´ `)
Low-falling-low		` ^ `	` ` ^ ` ` ^ ` `	` ` ` ^ ` ` ` ^ ` ` ` ^ ` ` `	(` ` ` ` ^ `) (` ` ` ^ ` `) (` ` ^ ` ` `) ` ^ ` ` ` `
Low-high-falling-low			` ´ ^ `	(` ´ ^ ` `) ` ´ ´ ^ ` ` ` ´ ^ `	` ´ ^ ` ` ` (` ´ ´ ^ ` `) ` ` ´ ´ ^ ` (` ´ ^ ` ` `) ` ` ` ´ ^ ` ` ` ` ´ ^ `

TABLE 8
TONE PERTURBATION OF NOUN IN POSSESSIVE PHRASE*
(Tone of emphasized noun in left subcolumn; tone with emphasized possessor in right subcolumn)

	múmá 'vomit'	*áyaqa* 'intestine'	*á'nóm:a* 'head'	*aítauqa* 'foot'
iyám:á 'dog'		´´´ (1)	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
iyá'kóní 'the dog's'	´´ | ` `	´´´ (1)	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
'póma 'pig'		´´´ ` ` `	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
'pógoni 'the pig's'	´´ | ` `	´´´ ` ` `	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
wáábímá 'water creature'		´´´ (1)	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
wáábígoni 'the water creature's'	´´ | ` `	´´´ (1)	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
numamá 'bird'		´´´ (1) (2)	` ´ ´ (2)	` ´´´´ (2)
numagóní 'the bird's'	´´ | ` `	´´´ (1)	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
'ko'kórima 'chicken'		´´´ ` ` `	´´´ | ` ` `	` ´´´´ | ` ` ` ` `
'ko'kórigoni 'the chicken's'	´´ | ` `	´´´ ` ` `	´´´ | ` ` `	` ´´´´ | ` ` ` ` `

* In spaces where neither possessive suffix nor prefix is present, a descriptive rather than possessive noun phrase is indicated and the tone is not pertinent to this chart. An all high-tone sequence does not occur on nouns that have obligatory possessive prefixes.

which occurs stress group medially and finally. The distributional-distinctive feature basis for the distinctions between phoneme classes in Usarufa may be summarized in chart form as in Table 9.

TABLE 9
DISTINCTIVE FEATURES DISTRIBUTION IN STRESS GROUP

	Consonantal	Vocalic	Initial	Medial	Final
Consonants	+	−	+	+	−
Vowels	−	+	+	+	+
Liquid	+	+	−	+	−
Glide	−	−	−	+	+

2. PHONEMES

2.1. *Phonetic Inventory*

Defined in terms of position within the stress group the following vocalic phones occur, as summarized in Table 10.

TABLE 10
USARUFA VOCALIC PHONES

Stress Group Initial		Stress Group Medial		Stress Group Final	
[i]	[u]	[i] [ɨ]	[u]	[i] [ɨ]	[u]
[e]	[o]	[e]	[o]	[e]	[o]
[ɛ] [ə]		[ɛ] [ə]			[ə]
[a]		[a]			[a]
		[r]	[l]		

Initially [ɛ] fluctuates with [e] when occurring with high pitch and preceding either an acute and/or checked consonant or the glide [ʔ]:

[ɛ́nəìmə̀/énəìmə̀]   'yesterday'
[ɛ́ʔkurə̀ìye/éʔkùrə̀ìyè]   'It is dark.'

Medially contiguous to acute phones [i] fluctuates with [ɨ]:

[mìnínímə́/mɨnínímə́]   'that woman'
[tìíníyè/tiɨníyè]   'He will say it.!
[yíníyè/yínɨyè]   'He will come.'

[e] and [ɛ] fluctuate under the same conditions as stress group initially:

[pétórî̂ʔə́/pɛtórî̂ʔə̀]   'brimmed hat'
[kɛ̀ʔò̀ʔkɛ̀ʔə̀/kɛ́ʔò̀ʔkɛ̀ʔə̀]   'every kind'

[ə] fluctuates with [ɛ] preceding unchecked nasal phones when following[l] or [y]:

[wə̀yə̀m:ə́/ẁə̀yə̀m:ə́] 'white'
[ìlə̀mə́/ìlɛ̀mə́] 'fire'

and [l] occurs only following [i] and following [ə] if preceding acute vowel phones or [a]:

[tìlùm:ɔ́] 'my liver'
[ə̀líbùrì?ɔ̀] a variety of sweet potato
[ə̀láátìyò] 'Show him!'

Finally [e] fluctuates with [ɪ] following acute phones and [r]:

[kàày ə́ré/kàày ə̀rɪ̀] 'two'
[nə̀núnè/nə̀núnɪ̀] 'I will eat.'
[kóìyè/kóìyí] 'He goes.'

[a] in all positions occurs only contiguous to [a]:

[nààm:ɔ́] 'house'
[áárə̀rəm:ə̀] 'his ear'

Nonvocalic phones occur within the stress group as demonstrated in Table 11.

TABLE 11
USARUFA NONVOCALIC PHONES

Stress Group Initial	Stress Group Medial				Stress Group Final
[p] [ʈ] [k]	[ˀp]	[ˀt]	[ˀk]	[ˀ]	[ˀ]
[m] [n]	[b]	[t]	[g]		
[w] [y]	[m]	[n]			
	[m:]	[n:]			
	[ˀm]	[ˀn]			
	[w]	[y]			
	[ˀw]	[ˀy]			

2.2. *Interpretation*

The interpretation of sequences of nonvocalic phones within the stress group presents the first major problem of analysis. The interpretation which is chosen will affect the phoneme and distinctive feature inventories, the description of syllable structure, and the statement of morphophonemic change. The extent and nature of the effect must be considered when making the decision as to which interpretation most adequately handles the data.

Several possibilities of interpretation of sequences of nonvocalic phones might be considered:

A. *Interpret the sequences of glottal plus consonant as clusters of two diverse phonemes.* This interpretation simplifies (i.e., numerically) both the phoneme and distinctive features inventories. The description of syllable structure with this interpretation remains relatively simple. However a prob-

ships between phonemes and distinctive features more clearly than other methods of presentation allow.
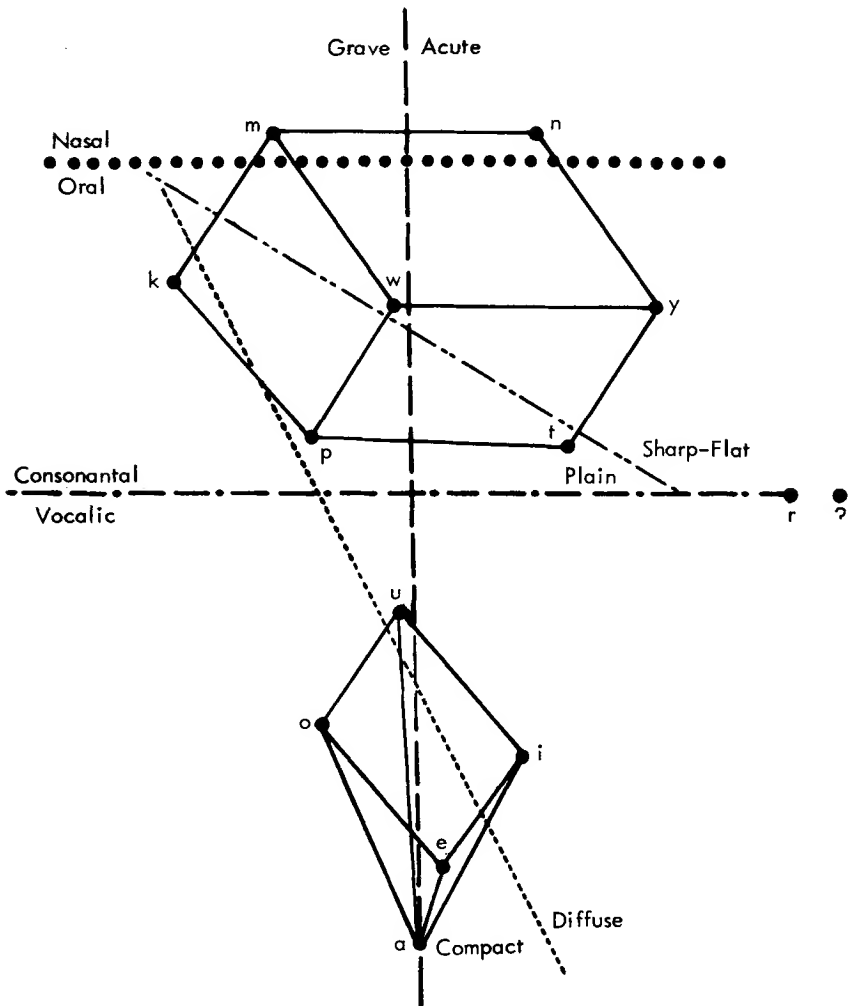

Figure 1. Composite diagram for Solution I

3.2. *Prosodic Features*

Both solutions require three degrees of pitch or three contrastive tones. Each syllable peak contains one of the three pitch features, high (´), low (unmarked), and falling (ˆ). Stress may be considered a component of the
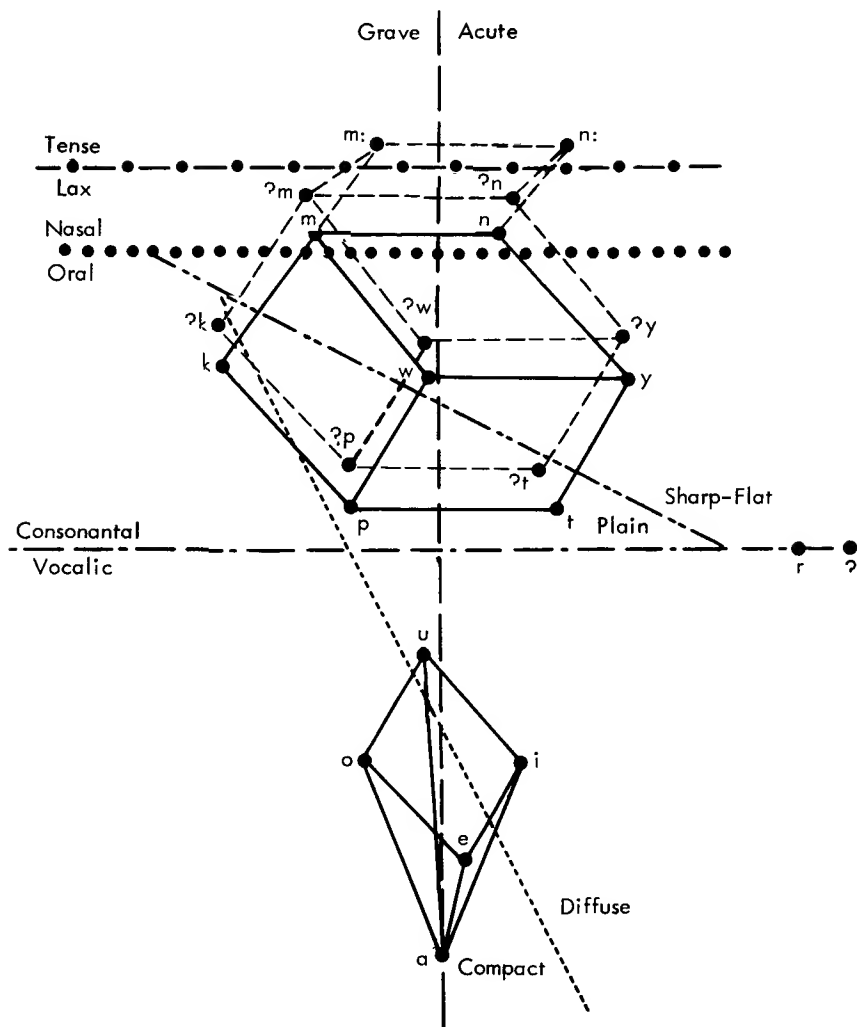
Figure 2. Composite diagram for Solution II

pitch feature being conditioned by tone placement.[5] Each stress group contains no more than one series of syllables with high and/or falling pitch. Therefore a sequence high-low-high is not possible within the system.

[5] A more definitive statement of the tone and stress features appears in Chapter XII.
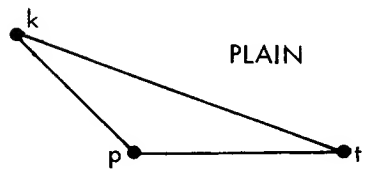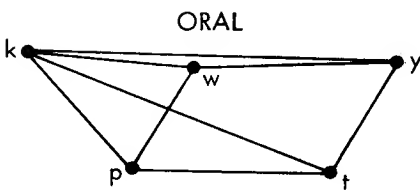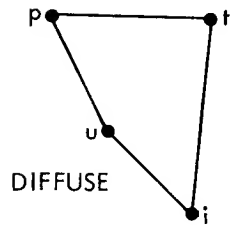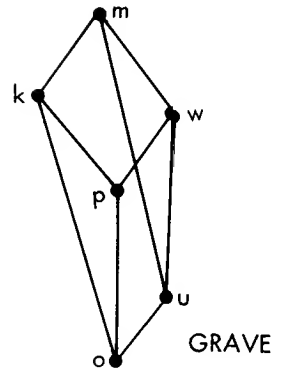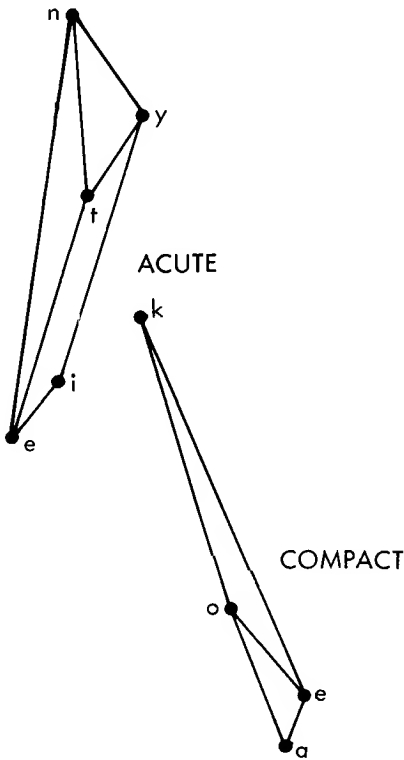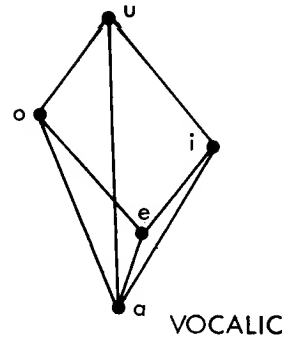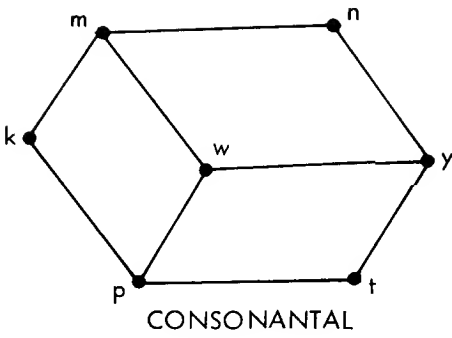
Figure 3. Oppositional subclasses

The Languages of the Eastern Family of the East New Guinea Highland Stock

Edited by HOWARD McKAUGHAN