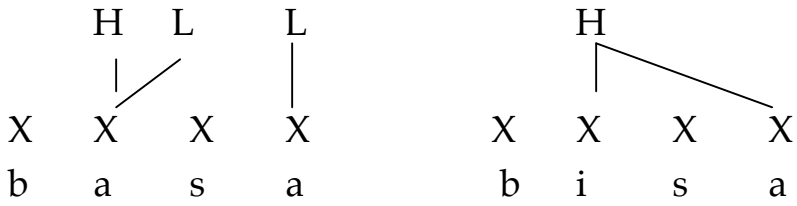
TONAL PHONOLOGY

There are many languages which utilize contrasts in relative pitch at which a syllable is pronounced to distinguish between wordforms. The relative pitch of the voice in such languages is subject to systematic restrictions just like any other phonetic property.

The relative pitch of the voice = Tone

The problem is to establish how tone is to be represented in tone languages: In particular, what is the nature of the tonal information contained in the lexicon and how phonological rules apply to modify this underlying tonal information so as to produce the correct surface tonal shapes?

(1)



The lines in (1) (called the association lines) indicate that the tonal elements H and L are articulated together with the relevant vowels

TONE STABILITY

LOMONGO, a Bantu language of Zaire.(Hulstert (1961), quoted in Kenstowicz and Kisseberth (1979))

` = low tone, ´ = high tone, ^ = falling tone

Prefixes: tó- 'we' bá- 'they'

Verbal roots:

	kàmb 'work',	fénd	'cross'
	às 'search'	ís	'hide'

(2)	tó-kàmb-à 'we work'	tó-fénd-à	'we cross'
	bá-kàmb-à 'they work'	bá-fénd-à	'they cross'
	tsw-âs-à 'we search'	tsw-ís-á	'we hide'
	b-âs-à 'they search'	b-ís-à	'they hide'

(3) X --> Ø / __ X
V V

(4)

		L	H		H			L	H		H	
		|	|		|			\	|		|
	X	X	X	X	X	-->	X	_	X	X	X	
	b	a	a	s	a		b		a	s	a	

MARGI, a Chadic language of Nigeria (Hoffman (1963), Kenstowicz (1991))

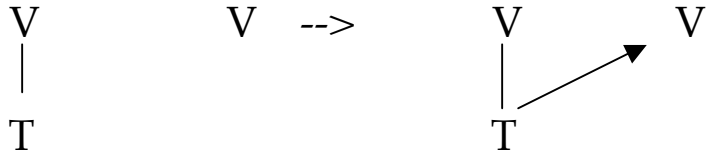
Changing affixes

(5)	a.	cṵ	‘speak’	cḯ -bá	‘tell’
		ghà	‘reach’	ghà-bá	‘reach’
		fĩ	‘swell’	fì -bá	‘make swell’
	b.	sá	‘go astray’	sá-ná	‘lead astray’
		dlà	‘fall’	dlà-nà	‘overthrow’
		bdlŭ	‘forge’	bdlə̀ -ná	‘forge’

Nonlinear account of Margi facts.

(6)

(7)



(8) a. sa + na --> sa + na ->(7)-> sa + na

H H H

b. bdlu + na --> bdu + na

H L H L

c. bdlu --> bdlu ->(6)-> bdlu

H L H L H L

Changing verbs.

(9)high	cụ́	cḯ -bá	cḯ -ŋgə́ rḯ	‘speak’
low	ghà	ghà-bá	ghà-ŋgə́ rḯ	‘reach’
changing	hụ̀	hú-bá	‘take’	
	fà		fá-ŋgə́ rḯ	‘take many’

(10) fa ŋgəri --> fa ŋgəri --> fa ŋgəri

H H H

(11) V --> V (Default assignment of Tone)

L

(12) hu ‘take’ --> hu

L

TONAL PHONOLOGY IN ORIENTAL LANGUAGES

Cantonese Chinese: (in the traditional transcription of Chinese tones proposed by the Chinese linguist Chao in 1928, 5 represents high pitch and 1 low pitch)

(13)	55	si	'poem'	22	si	'affair'
	33	si	'try'	21	si	'time' (phonologically 11)
	53	si	'silk'	24	si	'city'
	35	si	'cause'			

How can we represent these tonal contrasts:

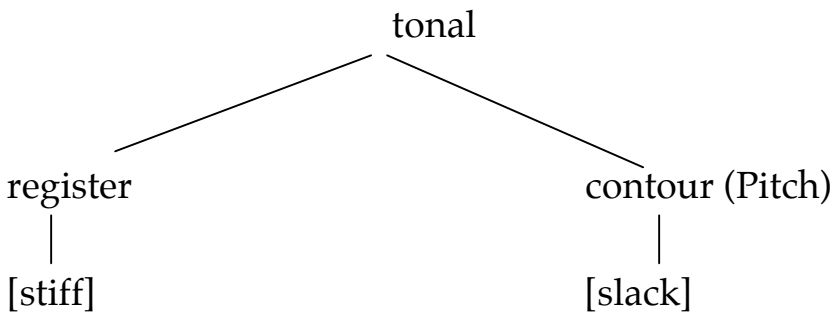
Tone and register:

Two different registers:

(14)	Yin register	55	22	53	35
	Yang register	33	21		24
		level	level	falling	rising

Yip (1980) distinguishes between a Register feature and a Pitch feature:

(15)

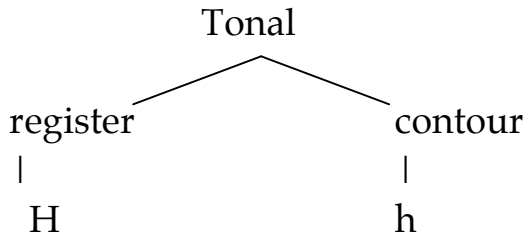


(16)

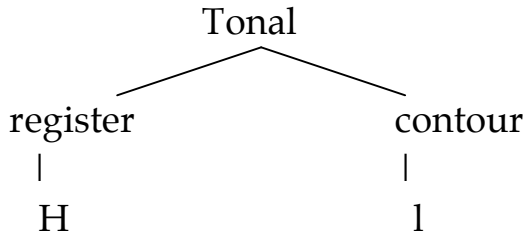
+stiff	=	H
-stiff	=	L
+slack	=	l
-slack	=	h

Cantonese:

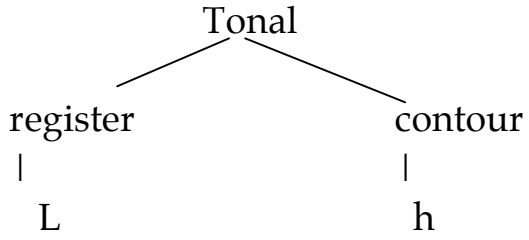
(17) a. 55 =



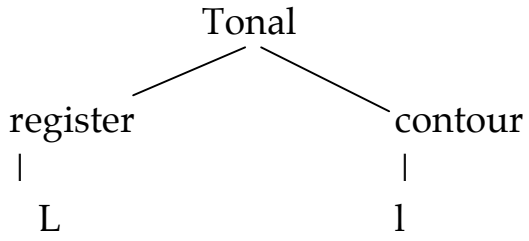
b. 33 =



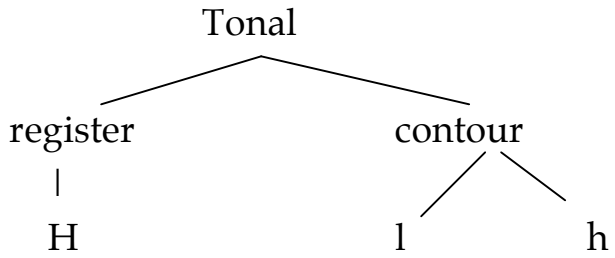
c. 22 =



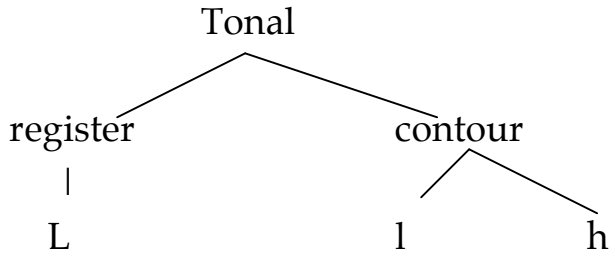
d. 11 =



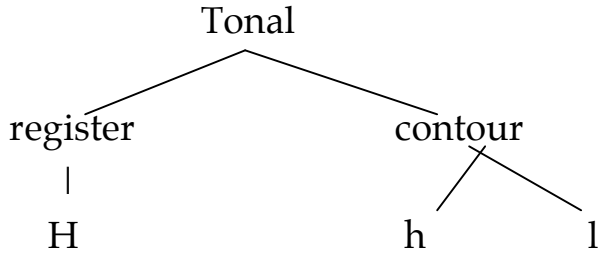
e. 35 =



f. 24 =

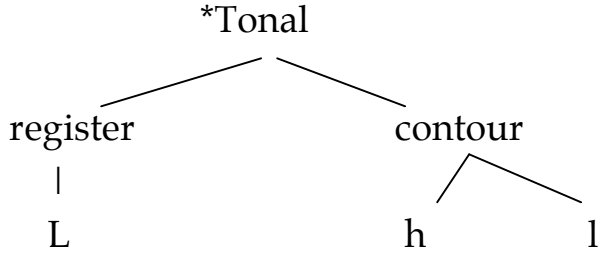


g. 53 =



Missing tonal pattern in Cantonese:

h. 42 =



AFRICAN LANGUAGES:

(18) *[astiff vocal folds, aslack vocal folds]

(19)
a.	[H, h]	*[H, l]
b.	[L, l]	*[L, h]

Hypothesis: Contour tones in the African languages always involve two tonal nodes.

Vowel Harmony

Palatal Harmony in TURKISH (Clements and Sezer (1982)

(20)

yel-ler ‘winds’	iz-ler ‘footprints’
cö l-ler ‘deserts’	gü l-ler ‘roses’
bas-lar ‘heads’	kol-lar ‘arms’
kul-lar ‘ slave’	kɨz-lar ‘daughters’
el-in ‘hand (gen. sing)	kIz-In ‘girl(gen. sing)’
ip-in rope’	sap-ɨn ‘stalks’

Palatal Harmony rule in Turkish:

(21)