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A Guide to Constructed Tone Languages

Gabriel Swai

1 Introduction

60–70 percent of natural languages possess some form of tone (Yip, 2002); however, tone is present in less than a quarter of the artlangs surveyed for the Conlang Atlas of Language Structures ("CALS: Feature: Tone", n.d.) A possible reason for this is the fact that tone is not as common in Europe as other parts of the world, and the tone systems that do exist in Europe often go unnoticed due to their association with stress (Yip, 2002). In my experience, many of the conlangs that do have tone do not take advantage of some of the more elaborate (and, in my opinion, more interesting) tonal processes that natural languages across the world use. I believe that this is due to a somewhat limited pool of resources specifically for conlangers who wish to create naturalistic conlangs with intricate systems of tone; as such, I hope that this paper is able to expand that pool and showcase some less well-known tonal features.

1.1 A Brief Overview of Tone

To add this to one's conlang, it is undoubtedly important to first learn the elemental parts of how tone works crosslinguistically, which requires the answering of a vital question: What exactly *is* tone? SIL characterizes tone as "a pitch element or register added to a syllable to convey grammatical or lexical information" ("Tone", 2003); a language that uses tone is considered tonal. For the purposes of this article, the way that a language uses tone comes in two main forms: lexical and grammatical (Maxwell, 1976).[1] SIL defines lexical tone as "the distinctive pitch level carried by the syllable of a word which is an essential feature of the meaning of that word" ("Lexical Tone", 2003). The four Mandarin words below are a classic example of lexical tone:

[1] There are other types of tone that exist (e.g. *characteristic* tone, *emotional* tone, etc.) However, because these types of tone are found in all languages, they are not of particular interest in understanding what a "tonal" language is. For further reading, see Chapter 1 of Maxwell (1976).

(1) a. **/ma˥/** "*mother*" High

b. **/ma˧˥/** "*hemp*" Rising

c. **/ma˨˩˧/** "*horse*" Dipping

d. **/ma˥˩/** "*scold*" Falling

The four words in (1) constitute a clear minimal set of the tones present in Mandarin; each word consists of the sequence **/ma/** with a different tone. Because (1) demonstrates that tone is able to create lexical differences in the language—i.e. it has a phonemic status in the language—Mandarin is considered to be a lexical tone language.

In contrast, SIL states that "grammatical tone is the distinctive pitch level which marks contrasts in grammatical features such as tense, aspect, and case" ("Grammatical Tone", 2003). While lexical tone distinguishes between the meaning of words, grammatical tone differentiates distinct grammatical features. As an example, compare the following verbs from Rendille (Cushitic, Kenya):

(2) a. **ìnàm** "*boy* (*subject*)"

b. **ínàm** "*boy* (*object*)"

In (2), the Rendille word for "*boy*" appears in both the subject and object case. The sole difference between these two grammatical cases lies in the pattern of tones—called a *tone melody*—present on the root morpheme: **LL** (low low) for the subject case and **HL** (high low) for the object case;[2] this shows that Rendille is a grammatical tone language.

However, while lexical tone languages such as Mandarin do not use tone to distinguish grammatical features, grammatical tone languages like Rendille do use lexical tone:

(3) a. **ìnàm** "*boy*"

b. **ìnám** "*girl*"

(3) is a minimal pair that differs only in tone melody; **LL** (low low) in (3a) and **LH** (low high) in (3b).

Some other sources may distinguish between "register" and "contour" tone as opposed to "grammatical" and "lexical" tone respectively. Register tones are level in pitch; their main distinction is their height (low, high, mid, etc.) In contrast, contour tones are distinguished by their shape (rising, falling, dipping, etc.) However, register tone languages often possess contour tones, and vice versa. Because of this, the terms grammatical and lexical tone are more descriptive of the languages they classify, and therefore they will be used throughout

[2]In this example—and, in fact, most discussions of grammatical tone—the grave accent (**à**) represents low tone, while the acute accent (**á**) represents high tone. If a language possesses it, mid tone is represented by a macron (**ā**). Because—as is explained in a later section—contour tones are treated as sequences of multiple level tones on a single vowel, they are represented by combining the three aforementioned diacritics (e.g. the caron (**ǎ**) represents rising tone (**à** + **á**)). Additionally, some languages with more than three levels of tone may use the double grave accent (**ȁ**) and double acute accent (**ő**) to represent super low and super high tone respectively

the rest of the article.[3] Additionally, this guide specifically explores grammatical tone and not lexical tone, as, in my experience, there are far fewer sources for conlangers about creating constructed tone languages, even though grammatical tone is comparably more complex and underrepresented in conlangs.

1.2 Autosegmental Phonology

With a basic grasp of tone, a critically important theory to further an understanding of complex tonal processes can now be investigated: autosegmental phonology. What sets autosegmental phonology apart from other phonological frameworks is its separation of segments onto different tiers (Goldsmith, 1990). Take (4) for example; it demonstrates the autosegmental representation of the Mende (Mande, Sierra Leone) word **nìkílì** "peanut" (Keffala, 2007).

(4)

n	ì	k	í	l	ì
	|		|		|
	L		H		L

"*peanut*"

Note that tones—low (**L**) and high (**H**) in this case—are on the *tonal tier*, separate from the consonants and vowels on the *segmental tier*. *Autosegments* (segments on a tier) are *associated* with one another through the drawing of *association lines*; for instance, the first vowel **ì** on the segmental tier in (4) is associated with the first **L** on the tonal tier. A crucial benefit of this model is that it allows a single underlying autosegment on one tier to associate with multiple on another, like in the autosegmental representation of the Mende word **bɛ̀lɛ̀** "*pants*" shown in (5):

(5)

b	ɛ̀	l	ɛ̀
	\		/
		L	

"*pants*"

Multiple underlying register tones may also associated to a single vowel, forming a single surface contour tone:

(6)

mb	ă
	/\
L	H

"*rice*"

[3] See Swai (2024) for a more detailed explanation of the terms surrounding tone languages.

In (6), a **L** and **H** both associate with a single **ă**, forming a rising tone. In grammatical tone languages, contour tones are generally best represented as a sequence of register tones on a single vowel.[4]

Autosegmental phonology can reveal phonological patterns that would otherwise be invisible on a surface level, such as the underlying tonal similarities between the three Mende nouns shown in (7):

(7) a. mb ă̂

L H L

"*companion*"

b. ny à h â

L H L

"*woman*"

c. n ì k í l ì

L H L

"*peanut*"

Notice that these words have the exact same sequence of tones on the tonal tier: **LHL**. Through a traditional phonological lens, the tonal patterns of these words would be difficult to see, but with the autosegmental model their resemblance is much clearer.

[4]Some evidence does suggest, however, that for some cases contour tones in grammatical tone languages are best described as a single autosegmental unit. See Newman (1995) for an example from Hausa (Chadic, Niger and Nigeria).

2 Tonal Processes

2.1 Tone Inventories

Much like segmental phonological inventories, grammatical tone languages vary in their number of tones (Odden, 2020). The simplest and most common number of register tones for a language to possess is two: high and low. While less common, languages with three levels (high, low, and mid) are not necessarily rare. Four levels is considerably less common, but does occur in various different regions. Languages with any more register tones are incredibly scarce, but Chori (Plateau, Nigeria) is documented as having six.

As for contour tones, the hierarchy below illustrates their general complexity (Hyman, 2007):

(8) **peaking** (**LHL**), **dipping** (**HLH**) > **rising** (**LH**) > **falling** (**HL**)

If a language possesses one of the contour tones in (8), then it will likely possess all of the tones to the right as well. A language with a rising tone, therefore, is probable to also have a falling tone, but a language with a falling tone does not necessarily also need a rising tone. For example, Hausa (Chadic, Niger and Nigeria) permits only falling—not rising—contour tones (Newman, 1995).

Additionally, languages may restrict the types of words and syllables to which contour tones may associate (Hyman, 2007). Similar to that of (8), in (9) there are four more hierarchies regarding syllable and word types. To the left is the type most likely to allow contour tones, while the right is the least likely; **S** and **O** represent sonorant and obstruent consonants, respectively:

(9) a. **Syllable rime:** **CV: > CVS > CVO > CV**
b. **Syllables in a word:** **1 > 2 > 3+**
c. **Stress:** **stressed > unstressed**
d. **Word position:** **final > non-final**

Keep in mind, however, that these hierarchies and general rules that grammatical tone languages follow are not absolute; there are counterexamples.

Grammatical tone languages may also only allow certain tone melodies. As an example, Mende permits low, rising, falling, and peaking tones on syllables with short vowels (Goldsmith, 1976); morphemes may have up to three syllables. Given the number of tones and syllables in a morpheme, mathematically it is expected that Mende uses **5** (**5^1**) melodies for monosyllabic morphemes, **25** (**5^2**) for disyllabic, and **125** (**5^3**) for trisyllabic—**155** total. In actuality, however, Mende only possesses **5**: **H**, **L**, **HL**, **LH**, and **LHL**; see (7) for an example of how these underlying tone melodies surface on morphemes with different numbers

of syllables. A morpheme like *__nyákìmá__ with the melody *__HLH__, for instance, could not exist in Mende.

2.2 Initial Association

Many tonal languages utilize synchronic *tone rules*: phonological rules that dictate how the surface tones of a word are realized. These rules may break or create association lines, altering the surface tone of syllables without changing the underlying tone melody. The *initial association rule* is the first tone rule that applies to words. As the name suggests, this rule serves as the initial association of tones to vowels (Goldsmith, 1990). The most common initial association rule for a language to have is the following:

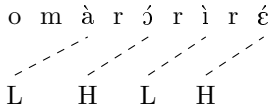
(10)

In (10), an unassociated tone (**T**) is associated with an unassociated vowel (**V**), the dashed line indicating that this rule creates a new association line. Typically, this rule applies from left to right. However—as with most linguistic phenomena—some languages differ from this. For instance, in Hausa, tones associate from right to left (Goldsmith, 1990). Another example of a unique initial association rule is that of Kikuyu (Bantu, Kenya), shown below (11):

(11)

As an example of this rule, the initial association process of a conjugated Kikuyu verb is shown in (12).

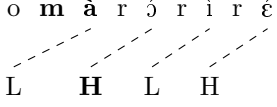
(12)



"*We looked at them.*"

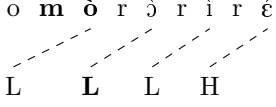
It is clear that Kikuyu tones associate one vowel to the right of their original morpheme, because if a single morpheme is changed, the vowel to the right of it changes tone:

(13) a.



"*We looked at **them**.*"

b.



"*We looked at **him**.*"

Notice that while the underlying distinction between (13a) and (13b) is in the second syllable, the tonal difference surfaces on the third syllable. Finally, to apply a tone to the first unassociated vowel, the first tone will spread to it:

(14) t ò m à r ɔ́ r ì r ɛ́

L H L H

This Kikuyu example demonstrates that conlangers can be quite creative in how they decide to initially associate tones and vowels, as they may act independently of each other.

2.3 Floating Tone

If the initial association rule of a language fails to associate all tones to vowels, however, some tones may end up being unassociated, called *floating tones*. For instance, suppose that a language has a word with the following autosegmental form:

(15) C V́ C V̀

H L H

In (15), there are three tones yet only two vowels, making a one-to-one association impossible. One way a language could handle this is by simply associating the rightmost **H** to the final **V̀**, creating a contour tone (Aannestad, 2018):

(16) C V́ C V̌

H L H

However, if the syllable is unable to bear a contour tone, it may be converted to one that is able:

(17) C V́ C V̌ː

H L H

In (17), the final vowel lengthens to allow a rising tone to form. This may occur in a language which does not permit contours on short vowels, but does on long ones.

A language may also allow the tone to remain floating; this floating tone can still play a role in tone rules. Take (18)—from Mixtec[5] (Oto-Manguean, Mexico)—as an example (Goldsmith, 1990):

[5]Mixtec has "dialects" with various levels of mutual intelligibility; different varieties possess different tone systems. This example is specifically from the San Miguel El Grande dialect.

(18) a. k ē ē
M M H
"*eat*"

b. k ē ē
M M
"*go away*"

On the surface, (18a) and (18b) are both pronounced the same: **kēē**. However, they create different effects on neighboring words:

(19) a. k ē ē s ú č í
M M H L H
"*The child will eat.*"

b. k ē ē s ù č í
M M L H
"*The child will go away.*"

The association line with a strike-through in (19a) represents the deletion of that line. Therefore, the only surface-level difference between (19a) and (19b) is in the tones present on **sùčí** "*child*", not on the morpheme with the floating tone.

2.4 Spreading

Of the tone rules that tone languages use, *spreading* is the most basic and is commonly found in many languages (Hyman, 2007). Tone spreading occurs when a single underlying tone spreads to one or more neighboring tones:

(20) k u y á ng á n i ts a
H
"*to inspect closely*"

In the example above from Chichewa (Bantu, Malawi), a marked **H** associated with the second vowel **á** spreads rightward one syllable (Goldsmith, 1990). Languages may use spreading rules of any tone (high, low, mid, etc.); however, they typically abide by the following hierarchy (Hyman, 2007):

(21) **H** > **L** > **M**

(21) posits that the most probable tone for a spreading rule to use is **H**, then **L**, and finally **M**. A large reason for the order of the hierarchy is that many languages have high tone spreading (HTS) but not low tone spreading (LTS) or mid tone spreading (MTS); however, there are very few that have LTS or MTS and not HTS. If a language has MTS, then it is quite likely that it also has LTS. Additionally, of the languages that do have both HTS and LTS (or MTS, if the language has more than two levels of tone), many place more

restrictions on LTS than HTS. In Kuki-Thaadow (Tibeto-Burman, India and Myanmar), a **L** will not spread rightward over two **H**s (e.g. /**L-H-H**/ does not go to /**L-L-L**/), but a **H** spreads rightward over two **L**s (e.g. /**H-L-L**/ goes to /**H-H-H**/). A similar hierarchy exists for the direction of spreading; tones are more likely to spread right than left:

(22) **Right > Left**

Spreading rules (and, as we will see, some other synchronic tone processes) can either be *bounded* or *unbounded*. The spreading illustrated in (20) is an example of bounded spreading, as the **H** spreads a fixed number of syllables—in this case only one. In contrast, unbounded spreading continues until reaching a word boundary, some other position in the word (e.g. some Bantu languages have unbounded spreading until the penultimate or antepenultimate syllable), or another marked tone.

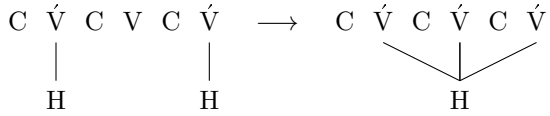
2.5 Other Tone Rules

Aside from initial association rules and spreading, grammatical tone languages use various other tone rules. While spreading occurs horizontally, *vertical assimilation* of tones also exists (Hyman, 2007; Snider, 1999):

(23) /**nyìlá**/ ⟶ [**nyīlá**][6]
/**L-H**/ ⟶ [**M-H**]

In the above example from Ewe (Gbe, Ghana and Togo), the low tone on the first vowel becomes a mid tone, assimilating to the high tone on the following vowel. Unlike initial association rules and spreading, it is not more common for vertical assimilation to occur from left to right—as (23) illustrates (Hyman, 2007). Instead, it is more common for a /**L-H**/ sequence to assimilate than a /**H-L**/ one. Additionally, it is common for vertical assimilation to both raise and lower.

Grammatical tone languages may also utilize *plateauing*. As the name suggests, it involves two of the same tone to "plateau" some number of vowels between (Hyman, 2000):

(24)


In the example from (24), an unassociated **V** becomes marked with tone between two **H**s. Like spreading, plateauing may be either bounded (affecting only a set number of vowels) or unbounded (affecting as long as there is no interruption). Note, however, that

[6] I did not put this example into autosegmental form as it is easiest to understand with simple phonological notation. Register tier theory gives a solid representation of the phenomenon in (23); see Snider (1999) for more information.

plateauing has only been known to occur with **H**s, not **L**s, converting unassociated vowels (Hyman, 2000).

A special type of spreading is *displacement*—also known as *shifting* (Hyman, 2007). The example below from Jita (Bantu, Tanzania) illustrates bounded displacement:

(25) k u β o n é r a
H
"*to get for*"

The **H** in (25) is underlyingly associated to the antepenultimate **o**, but is spread one vowel to the right and delinked from its original association, causing it to surface on the penultimate vowel **é** instead. Again—as with all spreading rules—displacement may be either bounded (e.g. (25)) or unbounded (e.g. (26)).

(26) a. u k ú hl e k a
H
"*to laugh*"

b. u k u hl é k i s a
H
"*to amuse* (*to make laugh*)"

c. u k u hl e k í s a n a
H
"*to amuse each other*"

The Zulu (Bantu, South Africa) example in (26) demonstrates unbounded displacement; the **H** underlyingly associated to the first vowel always associates to the antepenultimate syllable. Unlike plateauing, displacement may occur with both **H**s and **L**s (Hyman, 2000).

(25) in particular may be thought of as typical bounded spreading one vowel to the right, followed by a *reduction* (or *dissimilation*) of the first of two **H**s in a sequence (Hyman, 2007). The same can be said for (26): a **H** spreads unbounded to the penultimate vowel, followed by a subsequent delinking of all but the rightmost **H**.

This reduction may also occur without an initial spreading. The example (27) from Kirundi (Bantu, Burundi) illustrates a dissimilation rule typical of Bantu languages (Wee, 2019):

(27) a. n a r á z i b á r ii r a
H H
"*I was sewing them.*"

b. n a r á b a r ii r a
H H
"*I was sewing.*"

With the removal of the prefix **zi-** "them", the two **H**s of (27b) come in contact, causing the rightmost one to break association. The reduction found in (27) is an example of *Meeussen's Rule* (MR): the reduction of two sequential high tones commonly found in many Bantu languages. This reduction can lead to quite interesting surface forms when paired with other rules, such as this alternating pattern found in Kirundi, formed when MR applies after high tone spreading (Hyman, 2000):

(28) **kubáza**
kubíbaza
kubímubáza
kubímukúbariza
kuhábimúkubáriza
"*to ask him for them for you there*"

Dissimilation may also occur as a rule that only affects contour tones, called *contour simplification*. For instance, the Luba (Bantu, DRC) example in (29) illustrates the simplification of a rising tone (Hyman, 2007):

(29) a. b à d ì é l á → b. b à d y ě l á → c. b à d y è l á
L L H H L L H H L L H H

"*They threw themselves.*"

(29a) starts with four tones associated with four vowels; however, due to the gliding of /**ì**/ ⟶ [**y**], only three vowels are present in the surface form of the word. Because of this, the floating **L** originally associated to **ì** associates to **ě** in (29b), creating a rising contour tone. Finally, contour simplification takes place and disassociated the first **H** from its original vowel, producing the surface result in (29c). This only occurs in this case because of the second **H**—hence the reduction of two of the same tone. This simplification typically removes the tone in the right of the contour (e.g. /**LH-H**/ goes to /**L-H**/) rather than that of the left (e.g. /**L-LH**/ goes to /**L-H**/). This rule is a common manner in which languages may simplify illegal contour tones to legal level tones.

2.6 Privativity

In phonology, a *privative* contrast is one in which there is a marked segment distinguished from an unmarked one (Hyman, 1975). The English phonemes /**b**/ and /**p**/ serve as an example of privative opposition; the only difference between them lies in /**b**/ being marked for voicing, while /**p**/ lacks it. Privative tone systems are composed of one or more marked tones underlyingly and an unmarked tone that only appears on the surface. Below are some different systems of privative tone:

(30)

Language	*Phonological*	*Phonetic*
Navajo	/**H**/ vs. /**Ø**/	[**H**] vs. [**L**]
Jabêm	/**Ø**/ vs. /**L**/	[**H**] vs. [**L**]
Yoruba	/**H**/ vs. /**Ø**/ vs. /**L**/	[**H**] vs. [**M**] vs. [**L**]
Margi	/**H**/ vs. /**L**/ vs. /**Ø**/	[**H**] vs. [**L**]
Engenni	/**Ø**/ vs. /**L**/	[**H**] vs. [**M**] vs. [**L**]
Kom	/**H**/ vs. /**L**/	[**H**] vs. [**M**] vs. [**L**]

The /**Ø**/s in (30) represent unmarked tones. For instance, Navajo (Athabaskan, US Southwest) contrasts /**H**/ vs. /**Ø**/ (unmarked tone); [**L**]s only appear as the *default tone* for unassociated vowels. In Navajo, tonal processes only affect /**H**/s, as a /**Ø**/ cannot spread, float, displace, etc. This is the chief difference between a /**H**/ vs. /**Ø**/ and a /**H**/ vs. /**L**/ system: the latter may manipulated /**L**/s in tone rules. While Navajo has default [**L**] and marked /**H**/, Jabêm (Austronesian, PNG) possesses default [**H**] and marked /**L**/.

Privative contrasts may also exist with more than one marked tone (Hyman, 2000). An example of this is the /**H**/ vs. /**Ø**/ vs. /**L**/ opposition found in Yoruba (Volta–Niger, Nigeria); in this system, [**M**] is the default tone. Margi (Chadic, Nigeria) also has a privative /**H**/ vs. /**Ø**/ vs. /**L**/ contrast; however, it differs from Yoruba in that the default tone is either [**L**] or [**H**] depending on the phonological environment—not [**M**]. This means that tone rules may manipulate both /**L**/s and /**H**/s, but that there are still some unassociated tones that are not affected. Engenni (Volta–Niger, Nigeria) also utilizes a privative tone system similar to Yoruba, but in a different way. Like Yoruba, it has three phonetic level tones; however, underlyingly it has an opposition of only two: /**Ø**/ vs. /**L**/. Engenni /**Ø**/ is realized as [**M**] unless followed by a /**L**/, in which case it becomes a [**H**]. Finally, Kom (Grassfields, Cameroon) has no underlying /**Ø**/ in its three-tone system, but instead derives a phonetic [**M**] depending on the phonological environment of /**L**/ or /**H**/.

(30) illustrates a fairly wide variety of privative tone systems, but some are much more common that others (Hyman, 2000). The most crosslinguistically widespread privative tone contrast is /**H**/ vs. /**Ø**/ with default [**L**]. This is the system used in many Bantu languages (including Proto-Bantu). However—as (30) also shows—there is quite a lot of variety in terms of privative systems for tone languages; this is even true of closely-related languages.

Ruwund (Bantu, DRC and Angola), for instance, uses a /**Ø**/ vs. /**L**/ system while Xhosa (Bantu, South Africa) contrasts /**H**/ vs. /**Ø**/; both are Bantu languages.

2.7 Diachronic Tone

This, then, raises the question: How did this difference occur? The tone system of Ruwund is an example of "*flip-flop*" (Greenberg, 1948). Where Proto-Bantu had an underlying /**H**/, Ruwund has an underlying /**L**/ and vice-versa.[7]

This flip-flop is just one of many ways that tone is known to change over time. Although these diachronic tone processes are quite understudied, there is some information on the subject. For instance, floating tone may come about from the elision of a vowel while still maintaining the underlying tone (Nurse & Philippson, 2003).

However, the most-well-known diachronic tone process by far is *tonogenesis*: the development of tone in a non-tonal language (Michaud & Sands, 2020). Phonemic tone typically arises through some sort of conditioned phonological rule depending on surrounding consonants, followed by a merger of that consonant.

(31)

Word	Proto-Dene	Chipewyan	Gwich'in	Hupa
smoke	***ɬəd**	**ɬə̀r**	**ɬád**	**ɬid**
belly	***wət'**	**bə́r**	**vàd**	**mət'**

The table in (31) shows two words in Proto-Dene and their subsequent derivatives in the indigenous Canadian languages Chipewyan, Gwich'in, and Hupa (Michaud & Sands, 2020). In Chipewyan, a vowel preceding a glottalic consonant gained a high tone. Afterwards, the contrast between /**d**/ and /**t'**/ was lost in certain environments, leading to a privative phonemic contrast of /**H**/ vs. /**Ø**/. However, the exact opposite occurred in Chipewyan, which has a /**Ø**/ vs. /**L**/ opposition from marking vowels before glottalic consonants. We know that tonogenesis must have occurred as Hupa does not have tones and still maintains the word-final glottalic contrast of Proto-Dene. Glottalic vs. non-glottalic is far from the only contrast, however:

(32)
a. **glottalic** vs. **non-glottalic**
b. **voiced** vs. **voiceless**
c. **aspirated** vs. **unaspirated**
d. **geminated** vs. **ungeminated**

The list in (32) is non-exhaustive. Oppositions may also rarely arise from contrasting vowels, such as Cheyenne (Algonquian, Montana and Oklahoma) gaining high tones on long vowels (Frantz, 1972).

[7] See Chafe (1968) for more information on the mechanics of how flip-flop happens.

Additionally, a language may lose tone due to the influence of a non-tonal language, such as Swahili (Bantu, East Africa) from contact with Arabic (Greenberg, 1948); this is not very common, though. Tone is also quite an areal feature, and may spread from one distant or unrelated language family to another if they are geographically close (Aannestad, 2018).

3 Conlang Case Study

To give an example of one way in which one may use tone in a conlang, this section will illustrate the tonal system of Classical Arettian: a naturalistic artlang that I have developed.

3.1 Tone Inventory

Classical Arettian has an underlying contrast of /**H**/ vs. /**L**/ with surface [**H**] and [**L**]. Rising and falling contour tones are both permitted, although they are restricted to syllables with either a long vowel or a sonorant coda. Therefore, a syllable like /**mâr**/ or /**sǐː**/ would be perfectly legal, while one like */**ɬê**/ or */**ŭt**/ would not.

A way that I have gotten creative with Classical Arettian's tonal system is by allowing different tone melodies for noun and verb roots than for other morphemes:

(33) Noun and Verb roots: **H**, **L**, **HL**, **LH**, and **LLH**
Other morphemes: **H**, **L**, and **LH**

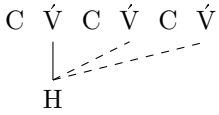
While I have not seen this exact restriction in any natural languages, it is not an inherently naturalistic feature; some natural languages may have different melodies for different tenses or aspects, for example (Goldsmith, 1990).

3.2 Tone Rules

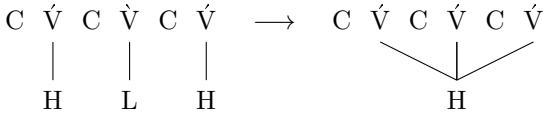
Classical Arettian uses a standard initial association rule, associating tones from left to right on each individual morpheme; this is essential what is shown in (10). If there are any unassociated vowels left, the final tone will spread to them.

There are four other rules that occur after this initial association; they are listed below in the order that they apply:

(34) a. **Bounded /H/ Spreading**



b. **Bounded /H/ Plateauing**



c. **Contour Simplification**
LH ⟶ **L** / _ **L**

d. **Horizontal Assimilation**
H ⟶ **LH** / **L** _ *if a contour tone would be legal on the syllable*

Notice that I specifically chose to have /**H**/ spread and plateau, but not /**L**/. This is due to the fact that /**H**/ spreading is generally more common and less restricted crosslinguistically.

3.3 Floating Tone

Classical Arettian also utilizes floating tone. The prefix /**yù**/- for a class one noun has an allomorph [**yw**]- with a floating /**L**/ that appears before non-back vowels.

(35) a. y w **à** **s**

L **H**

"*messenger*"

b. n ò s è k **á** **s**

L L **H**

"*I used to send messages.*"

(35a) illustrates the floating tone of [**yw**]- delinking the underlying /**H**/ of the emboldened root /**ás**/ and associating with its vowel. (35b), in contrast, shows /**ás**/ with its tones unaltered. The floating /**L**/ of [**yw**]- does not appear on the morpheme itself, as it has no vowels; it only surfaces on adjacent syllables, similar to the Mixtec example in (19). This allomorph arose due to a conditioned gliding of /**u**/ before non-back vowels, causing the tone attached to that vowel to become floating. Again, this mirrors the natural language example in paragraph two of §2.7.

4 Conclusion

Given the limited number of resources for those who wish to put tone in their conlangs, I hope that this guide serves its purpose to expand that pool with resources on the various ways that natural languages utilize tone, and how that can be applied to constructed languages. For anyone interested in learning more about tone, below are sources that I would recommend.

Resources

- Aannestad, 2018 (*conlang specific*)
- Goldsmith, 1990
- Hyman, 2000 (*privativity*)
- Hyman, 2007 (*tone rules*)
- Michaud and Sands, 2020 (*tonogenesis*)
- Odden, 2020
- Snider, 1999
- Swai, 2023 (*conlang specific*)
- Yip, 2002

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