Vowel–consonant Harmony

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In past videos, we've talked about consonant harmony (harmony that involves consonants only) and vowel harmony (harmony that involves vowels only). Links in the usual places. In this video, we're gonna look at the final type of harmony found in human language: vowel-consonant harmony. Which, you guessed it, is harmony that involves both vowels and consonants.

> Vowel-Consonant Harmony
>
> C̲VCVC -> **C̲VCVC**
>
> (Underline = trigger)
>
> (bold= harmonised segments)

This is gonna get a bit intense so buckle up folks!

NASAL VOWEL-CONSONANT HARMONY

Nasal vowel-consonant harmony is a type of vowel-consonant harmony where, at least in theory, all contiguous vowels and consonants within a given domain (usually the word) agree in nasality. Either all plain or all nasal.

CVCV (all plain)

C̃Ṽ C̃Ṽ (all nasal)

Of course in practice, it's never that simple! In Epena Pedee, a Choco language spoken in Colombia, nasal vowel-consonant harmony is triggered by nasal vowels. The harmony spreads progressively (left-to-right), nasalising any glottals, vowels, glides and liquids present ...

ãhowe**r**a -> ãh̃õw̃ẽr̃ã

(This is not an Epena word, just proof of concept)

... and the harmony is blocked by obstruents (plosives, fricatives & affricates) and the alveolar trill.

ãhisa -> ãh̃ĩsa

(This is not an Epena word, just proof of concept)

Epena Pedee, here, is following pretty closely this implicational hierarchy.

vowels > glides > liquids > fricatives > stops

That is, if a language allows a given category to undergo nasal vowel-consonant harmony, everything else to the left will also undergo harmony. Similarly, if a given category blocks (or is transparent to) nasal harmony, then so too will everything to the right.

Epena Pedee also has a few additional idiosyncrasies going on. Plosives that block harmony get pre nasalised ...

ãhida -> ãh̃ĩⁿda

(This is not an Epena word, just proof of concept)

And onsets in syllables containing nasal vowels also get nasalised, specifically voiced stops become fully nasal ...

/dãwe/ -> [nãw̃ẽ] 'mother'

voiceless stops are unaffected ...

/kʰĩsia/ -> [kʰĩsiə] 'think'

and everything else gets nasalised

wãhida -> ẅãh̃ĩⁿda 'they went (go PAST.PL.)

The Panoan language, Capanahua, spoken predominantly in Peru, does basically the reverse. Nasal vowel-consonant harmony in Capanahua is triggered by nasal stops, it spreads regressively (right-to-left) onto vowels, glides & glottals and is blocked by obstruents and liquids.

pojan -> põj̃ãn ‘arm’

ʔonampan -> ʔõnãmpãn ‘I will learn’

Finally, in Tuyuca, a Tucanoan language spoken in Colombia and Brazil, nasal vowel-consonant harmony spreads in both directions and no blocking occurs; instead voiceless stops and fricatives are transparent to the harmony.

bipí 'swollen' vs mĩpí̋ 'badger'

wáa 'to go' vs ẅa̋ã 'to illuminate'

EMPHASIS VOWEL-CONSONANT HARMONY

Emphasis harmony! Oh, boy ::exhales deeply:: emphasis harmony.

So emphasis harmony, also known as post-velar harmony, is found in a bunch of languages but it's most famously attested in the semitic languages, particularly in Arabic and its various dialects. To understand what emphasis harmony is, we first need to understand what an 'emphatic' consonant is.

This varies language to language but, in general, emphatic consonants are consonants that are pharyngealised or uvularised.

Plain: s

Pharyngealised: sˤ

Uvularised: sˠ

That is, they are pronounced just like you normally would but whilst also positioning the back of the tongue backwards in the mouth towards the pharynx. Compare plain [sssss] with pharyngealised/emphatic [sˤsˤsˤsˤsˤ].

The effect basically is that emphatic consonants sound deeper, lower and darker than their plain counterparts.

Emphatic consonants also tend to affect surrounding vowels. Again, this can vary language to language but in general surrounding vowels will get backed, lowered, retracted … that kinda thing. My pronunciation here is never gonna be 100% accurate but compare [sssssssssæ] v [sˤsˤsˤsˤsˤsˤɑˤ].

So, with all that in the bag, we can say that emphasis harmony is harmony where, at least in theory, all contiguous vowels and consonants within a given domain (usually the word) agree in “emphatic-ness”. Either all plain or all emphatic.

CVCV (all plain) vs CˤVˤCˤVˤ (all emphatic)

Again, in practice, it’s never so simple.
In Egyptian Arabic, emphasis harmony is triggered by the coronal emphatics [dˤ, tˤ, sˤ, zˤ & rˤ] or the emphatic low vowel [ɑˤ]. Which is basically a regular [ɑ] but with the pharynx constricted somewhat during production.

If the emphatic low vowel is present anywhere in a word, all sounds will be emphatic.

[bˤɑ:ˤbˤɑˤ] ‘dad’ vs [ba:ba] (name of a Coptic month)

If the coronal emphatics are present, they will spread harmony bi-directionally. Regressive (right-to-left) harmony spreads to the beginning of the word unimpeded.

bɑsɑtˤ -> bˤɑˤsˤɑˤtˤ ‘entertained’

tɪnbɪsɪtˤ -> tˤɪˤnˤbˤɪˤsˤɪˤtˤ ‘you become entertained’

Whereas progressive (left-to-right) harmony is blocked by high, front type vowels and consonants, specifically [ɪ, i:, e:, ʒ]

tˤɑbbɑx -> tˤɑˤbˤbˤɑˤxˤ ‘cook’

tˤɑbɑʔe:n -> tˤɑˤbˤɑˤʔe:n ‘two plates’ (e: = blocker)

A similar setup is found in other dialects of arabic. In southern Palestinian Arabic, emphasis harmony is triggered by the emphatic consonants and the spread is bidirectional. Regressive spreading is unimpeded whilst progressive spreading is subject to blocking by high front segments, specifically [i, j, ʃ, dʒ].

ʔabsa:tˤ -> ʔabsa:tˤ 'happier'

sˤaba:ħħ -> sˤaba:ħħ 'morning'

sˤajja:d -> sˤajja:d 'fisher, hunter'

(Underline indicates the domain of emphasis harmony)

RETROFLEX HARMONY

Retroflex vowel-consonant harmony is where, at least in theory, all contiguous vowels and consonants within a given domain agree in retroflexion. Either all plain or all retroflex.

CVCV (all plain) vs $C^{ɻ}V^{ɻ}C^{ɻ}V^{ɻ}$ (all retroflex)

But once again, say it with me now, it's never that simple in practice.

In Sanskrit, retroflex vowel–consonant harmony is triggered by the non-lateral retroflex continuants (ɻ, ʂ). The harmony spreads progressively, targeting the dental nasal /n/ and turning it retroflex /ɳ/

ká:m-e:na 'by desire'

naɻ-e:ɳa 'by man'

manuʂj-e:ɳa 'by human'

However, the harmony is blocked by intervening coronal consonants.

ɻátʰ-e:na ‘by chariot’ (*ɻátʰ-e:ɳa)

Now, on the face of it, this looks like plain consonant harmony, but research indicates that the tongue, once in retroflex position, remains in retroflex position until an obstacle is met—be it a blocker or word boundary. Therefore, we class retroflex harmony as a type of vowel-consonant harmony.

naɻ-e:ˈɳaˈ ‘by man’

Same basic schtick happened in Mpakwithi, a Northern Paman language once spoken in Queensland, Australia only this time harmony is regressive (right-to-left) and explicitly, rather than implicitly, targets vowels.

gwapɹa -> [ŋgwaˈfɻa] ‘is eating’

NON-LOCAL VOWEL-CONSONANT HARMONY SYSTEMS

So nasal, emphasis, and retroflex vowel-consonant harmony are the three main types of vowel-consonant harmony attested in human language. They are what's known as local vowel-consonant harmony—harmony that spreads over continuous segments.

Local Vowel-Consonant Harmony

C̲VCVC -> **C̲VCVC**

(Underline = trigger)

(bold= harmonised segments)

Other types of vowel-consonant harmony are attested though these are relatively rare and non-local. That is, they are harmony systems where the harmonising segments are not right next to one another.

Non-local Vowel-Consonant Harmony:

CVCVCV**C̲** -> C**V**C**V**C**VC̲**

(bold=harmonising)

(underline = trigger)

In the Salishan language, Snchitsu'umshtsn, preceding uvulars or pharyngeals aka faucals, /i/ is retracted to [ɛ], and /ɛ/ is retracted to [ɑ]. This occurs both locally ...

u-tiq^{w} -> u-teɛq^{w} 'it is bright red'

... but also non locally.

niʔ-sɛ́ttʃ-iʔqs-n -> nɛʔ-sɑ́ttʃ-ɛʔqs-n 'crank (on a car)'

Here the uvular /q/ retracts this /i/ to [ɛ] and because of that this vowel gets retracted and so does this one. Without the intervening consonants being affected at all. This type of vowel-consonant harmony is called faucal harmony.

Spoken in Northwest China, the Tungusic language, Sibe Gisun, does something similar only instead of consonants altering vowels, the reverse is true. Velar consonants in suffixes are turned into uvulars if a non-high vowel appears anywhere in the preceding stem. As far as I can tell, this is fairly marginal in Sibe.

ɨldɨ(n)-kɨn -> ɨldɨ(n)-kɨn 'bright (diminutive)'

sula-kɨn -> sula-qɨn 'loose (diminutive)'

adʑi(g)-kɨn -> adʑi(g)-qɨn 'small (diminutive)'

And finally, in the Semitic language, Harari, the right-most coronal consonant (except /r/) in the second person feminine singular is turned into a palatal consonant by the -i suffix.

ti-kaft-i -> ti-kaftʃ-i ‘you (f.s) open’

ti-sabr-i -> ti-ʃabr-i ‘you (f.s) break’

ti-barr-i -> tʃi-barr-i ‘you (f.s) fly’

And like with the previous example of non-local vowel-consonant harmony, the effect can spread …

ti-bitas-i -> ti-bitaʃ-i / ti-bitʃaʃ-i ‘rip’

ti-fit’an-i -> ti-fitʃaɲ-i ‘hurry’

The -i suffix causes these guys to palatalise which in turn, causes these guys to palatalise, and all intervening segments are not affected by the harmony. I’m not sure if this is the official term but I tend to refer to what’s going in Harari as palatalisation harmony. And just like Sibe, I’m pretty sure this is fairly marginal in Harari

SUMMARY

In sum, vowel-consonant harmony may be local or non-local. Nasal, emphasis and retroflex vowel-consonant harmony are the main players in this space, but other types such as faucal and palatalisation harmony exist, though they are rarer.

Each of the big three show affinities towards certain spreading directions

Nasal vowel-consonant harmony: progressive, regressive, bi-directional

Emphasis harmony: bi-directional

Retroflex harmony: progressive, regressive

Blocking is common and transparency is rare and … that's that! Vowel-consonant harmony … done!

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