

Exploring pathways to contrastive vowel nasalisation

*Or what today's articulatory patterns can tell us about
yesterday's sound change*

Stefano Coretta

Institute of Phonetics and Speech Processing LMU

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**INSTITUT FÜR PHONETIK
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Overview

- Conceptual background
- Typological survey
- Diachrony
- English MRI data

CONCEPTUAL BACKGROUND

Phon(et)ological systems

Phonologisation

Structuralism

Lexical Ph

Stratal OT

Life Cycle

Exemplar

Phonologisation is the creation of a new phonemic contrast, or in other words when a contextual allophone becomes *contrastive* (i.e. a phoneme).

— Kiparsky 2015

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TYPOLOGY

Contrastive vowel nasalisation

Konai

[d̩io] 'bone'

[d̩iɔ̃] 'grass'

Lakota

['su] 'seed'

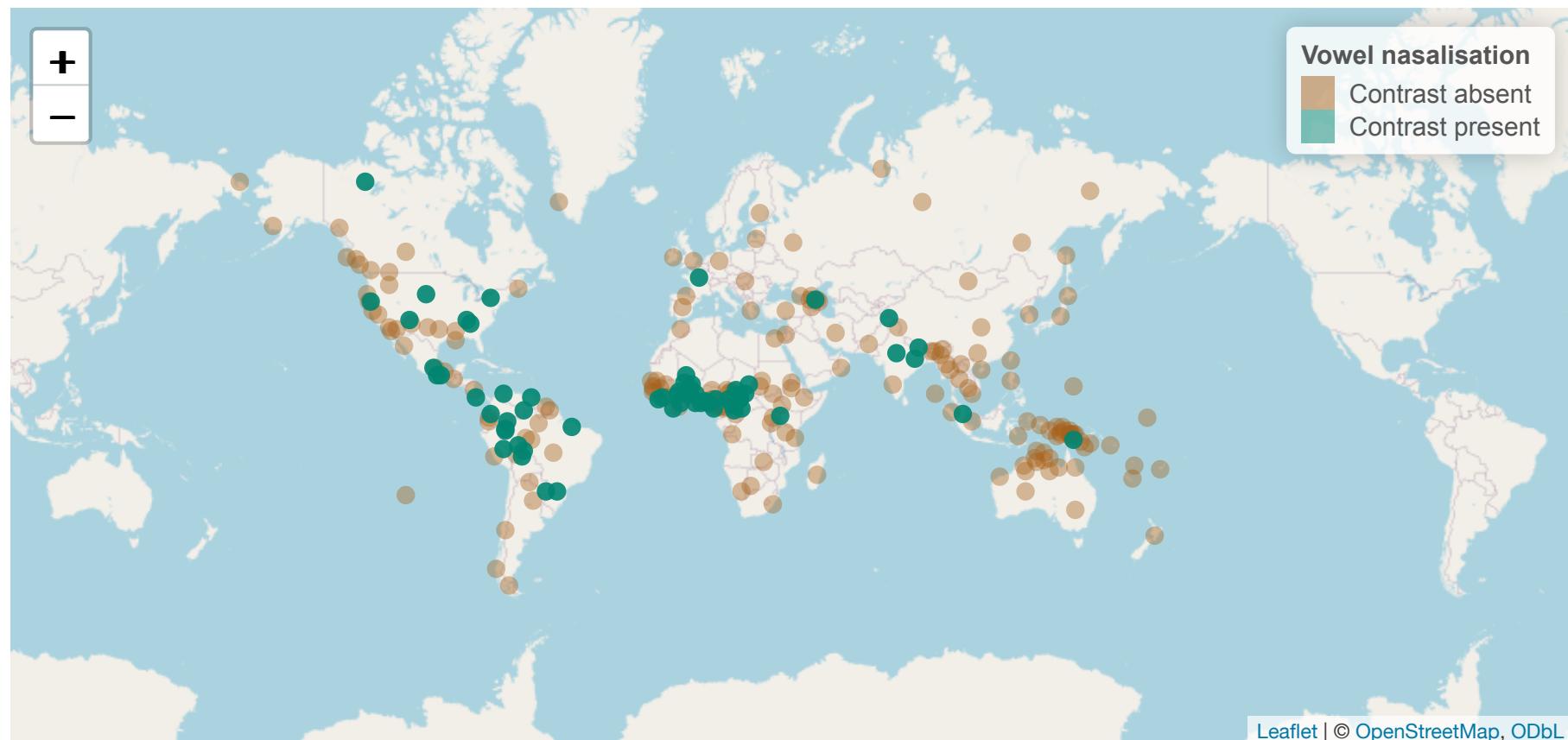
['sū] 'braid'

Palantla Chinantec

[háa] 'so'

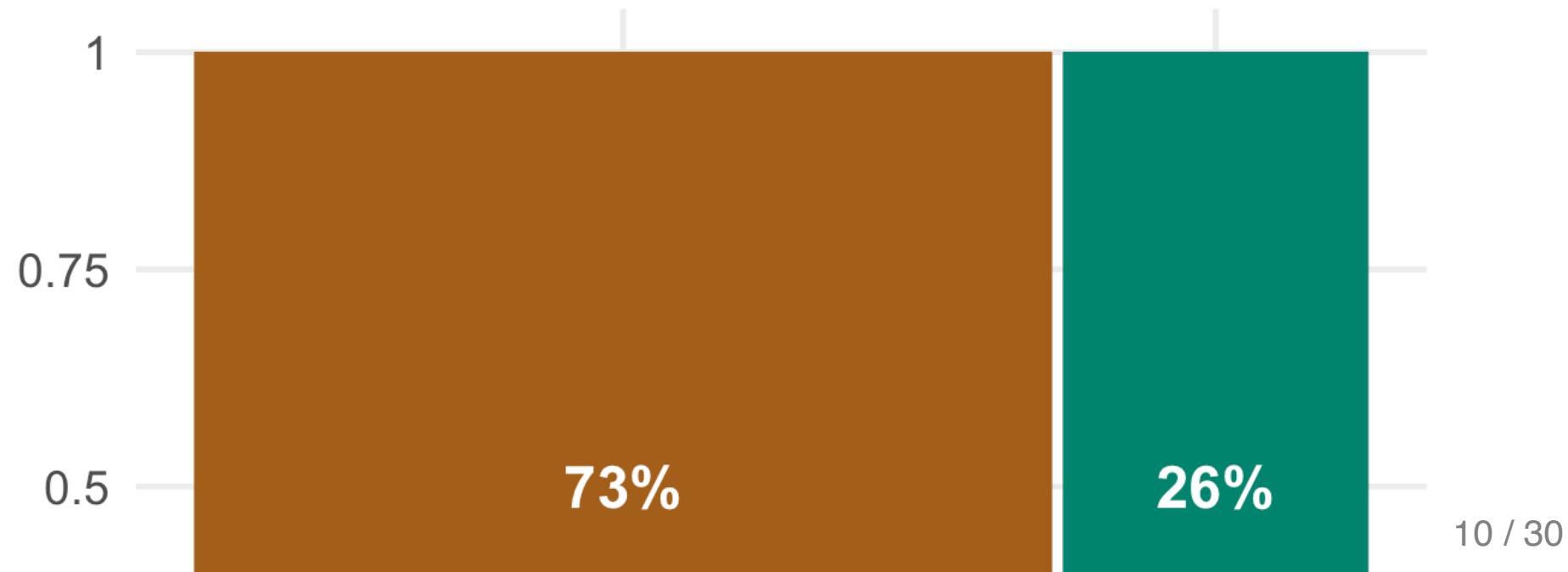
[háã] 'foam'

Distribution

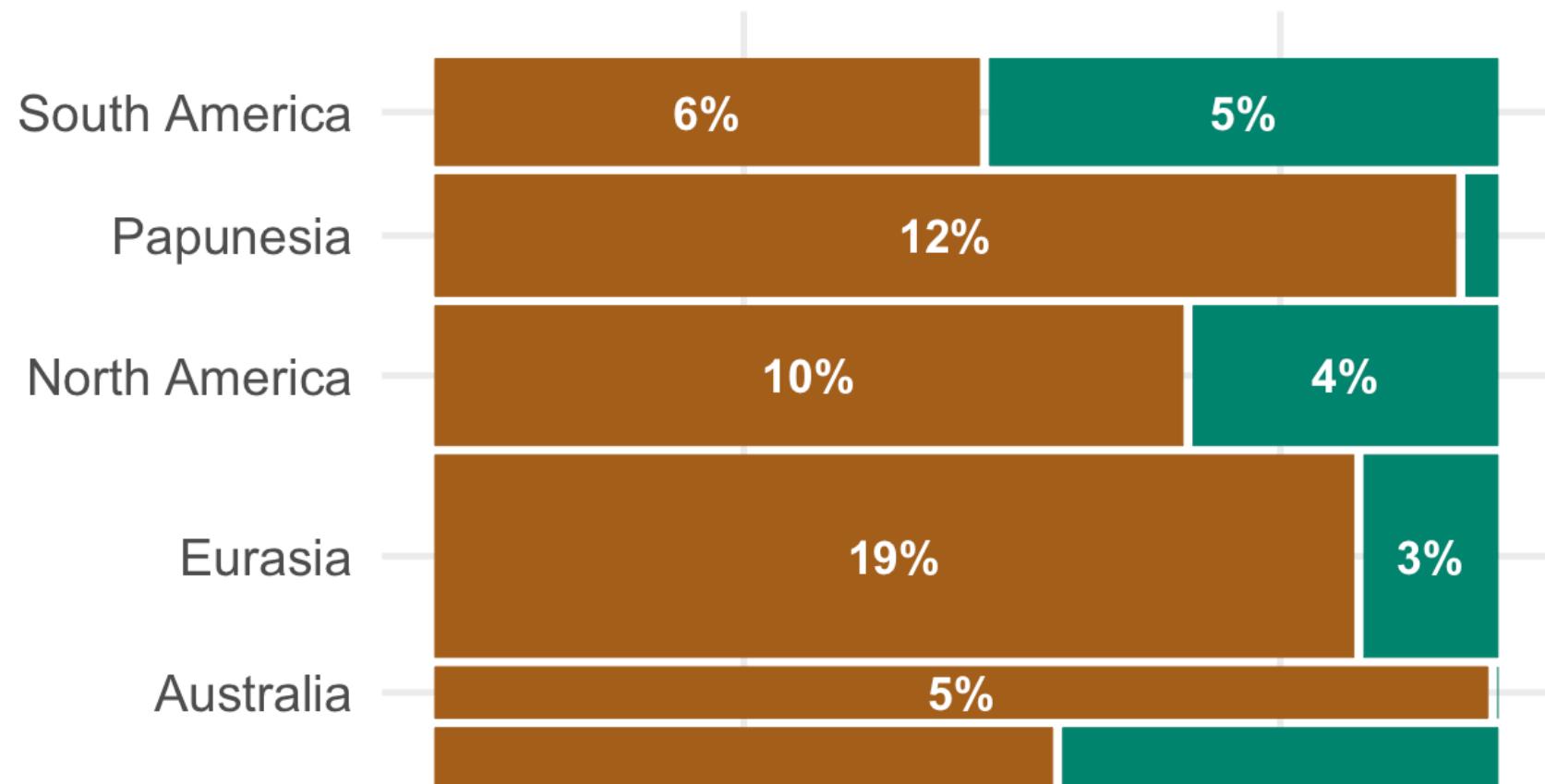


Vowel nasalisation in WALS 9 / 30

```
## Warning: The `scale_name` argument of `continuous_scale()` is deprecated as of ggplot2 3.5.0.  
## This warning is displayed once every 8 hours.  
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was  
## generated.  
  
## Warning: The `trans` argument of `continuous_scale()` is deprecated as of ggplot2 3.5.0.  
## Please use the `transform` argument instead.  
## This warning is displayed once every 8 hours.  
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was  
## generated.
```



```
## Warning: `unite_()` was deprecated in tidyverse 1.2.0.  
## i Please use `unite()` instead.  
## i The deprecated feature was likely used in the ggmosaic package.  
## Please report the issue at <https://github.com/haleyjeppson/ggmosaic>.  
## This warning is displayed once every 8 hours.  
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was  
## generated.
```



DIACHRONY

What does it take?

VOWEL~NASAL

COARTICULATION

Case study: Rio-Branco (Arawakan)



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Mawayana*/n-deɪ/*

1sg-child

→ Proto-Rio-Branco *nu '1sg'

/n-nū/

1sg-1sg.SUBJ

Wapishana*/ũ-də(-ni)/*

1sg-kin(-?)

/ũ(-gařt)/

1sg.SUBJ

$\tilde{V}N > \tilde{VN} > \tilde{VN} > \tilde{V}$

What does the reduction of nasals look like?

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nasal
=

oral constriction
+

velum opening

nasal
=

tongue tip constriction
+

velum opening

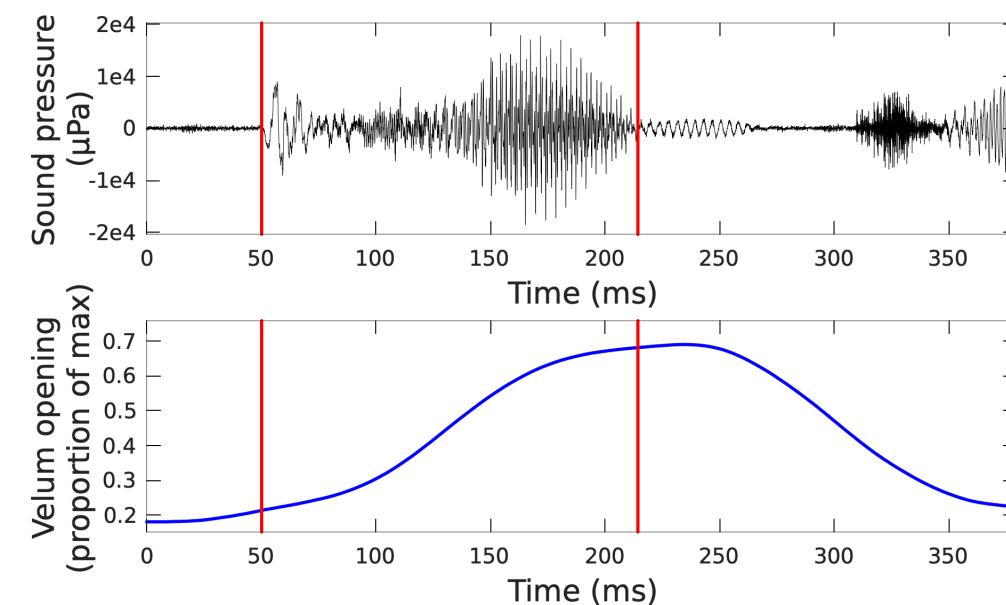
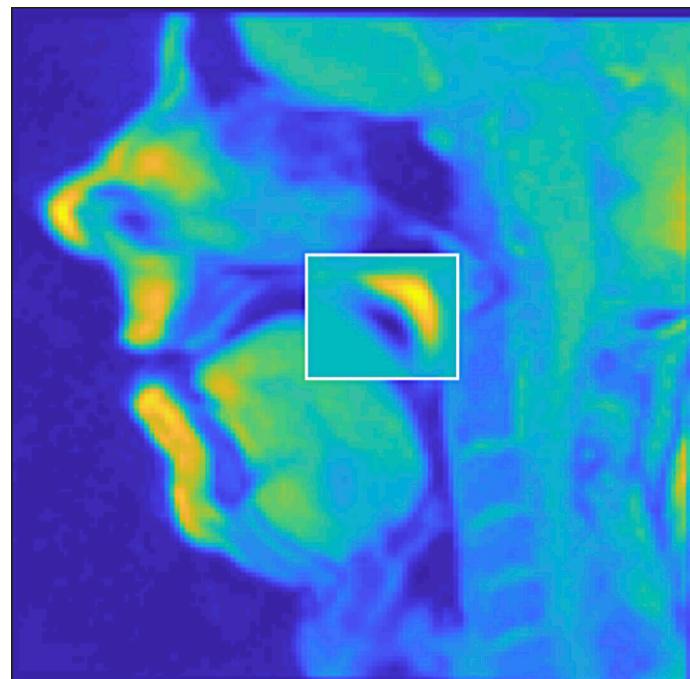
British and American English

41 speakers (24 BrE, 17 AE)

*Saw **bent** about two*

*Saw **bend** about two*

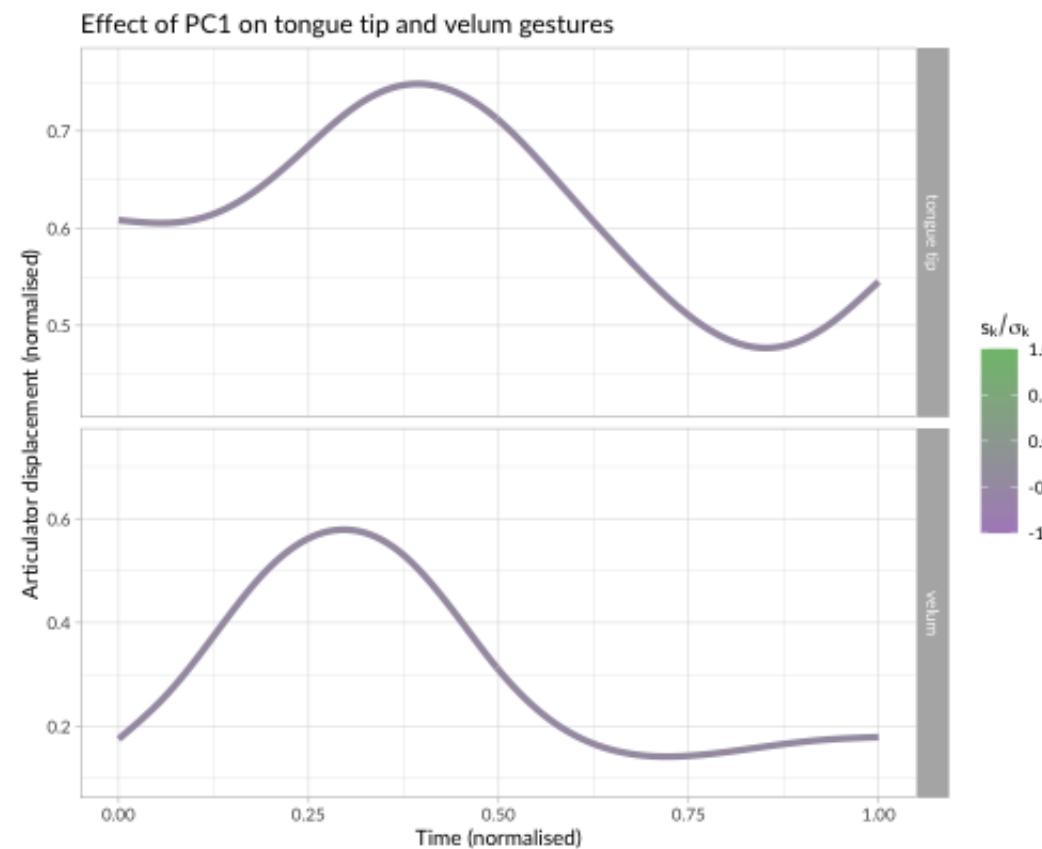
Real-time MRI



Tongue tip and velum

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Tongue tip and velum



Tongue tip and velum

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Open questions

A looser tongue-tip constriction corresponds to greater velum opening.

- What does this mean for the development of contrastive vowel nasalisation?

There are more languages that maintain a tongue-tip constriction than languages that don't.

- Which are the (pre)-conditions for the **complete loss** of the tongue-tip constriction?

The degree of nasalisation in contrastive nasalised vowels tends to be greater than that of coarticulatory nasalisation.

- Does nasal reduction drive increased nasalisation, the other way around, or both?

That's all!

(ask me about this meme)

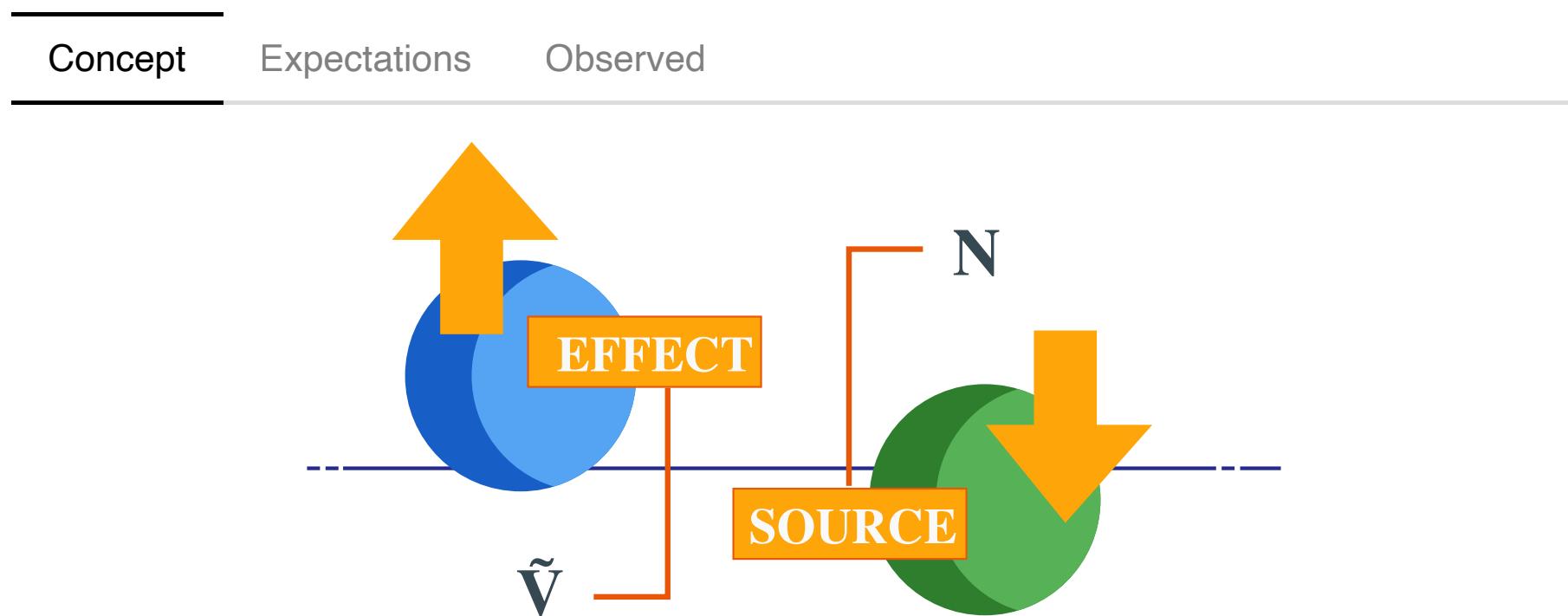


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What about sound change?

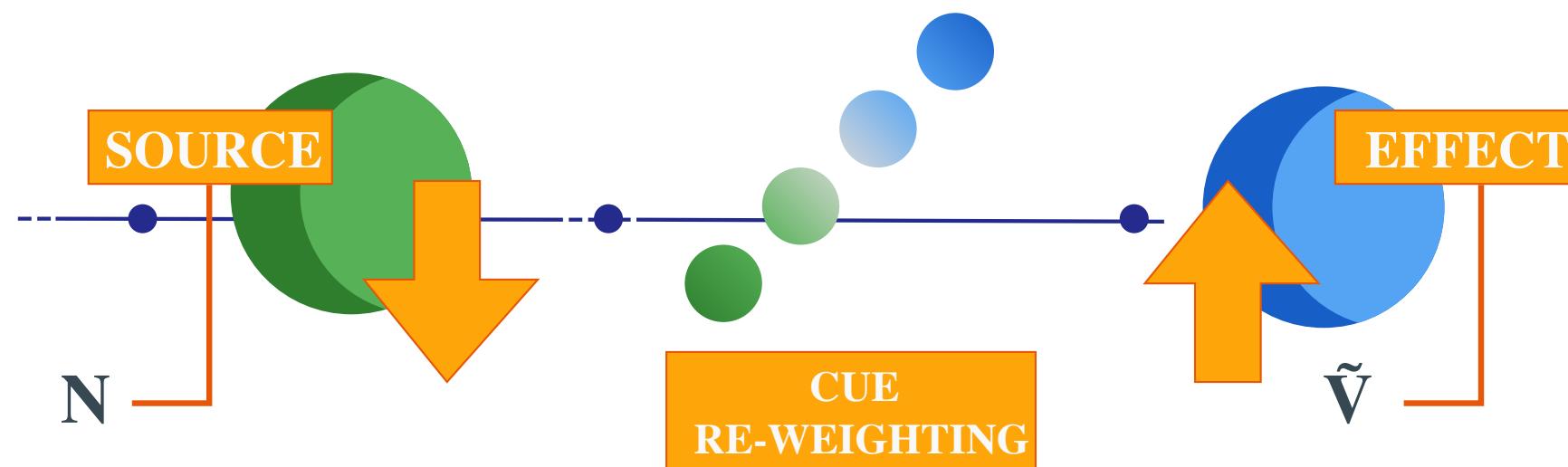
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Source/Effect Trading model (SET)



– Beddor 2009, 2012^{29 / 30}

Cue Re-Weighting model (CReW)



— Carignan et al. 2021