

Introduction & The sound structure of Basque

Ander Egurtzegi (CNRS-IKER)

Advanced course in Sound Change with a focus on Basque

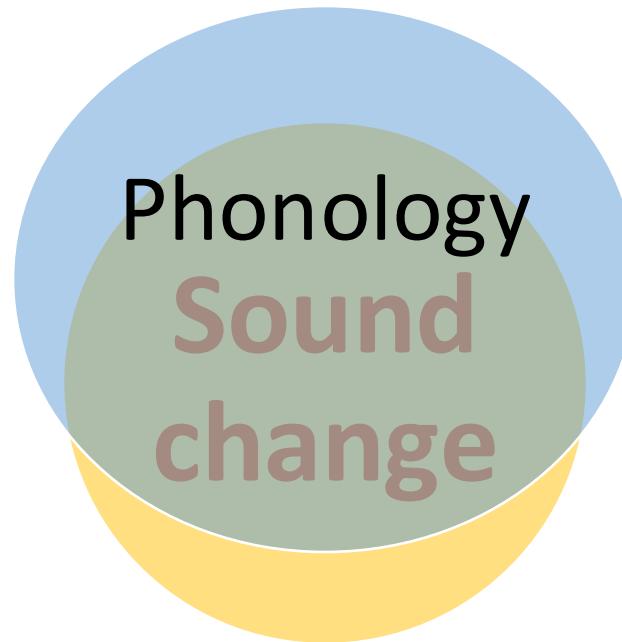
University of Chicago, 2025/03/24

- Historical laboratory phonologist.
- Sound change: all angles.
 - Historical, theoretical, and laboratory phonology.
 - Acoustic and articulatory phonetics.
 - Linguistic typology.
 - Philology and corpus linguistics.
 - Socio- and contact linguistics.
- Basque; endangered languages.

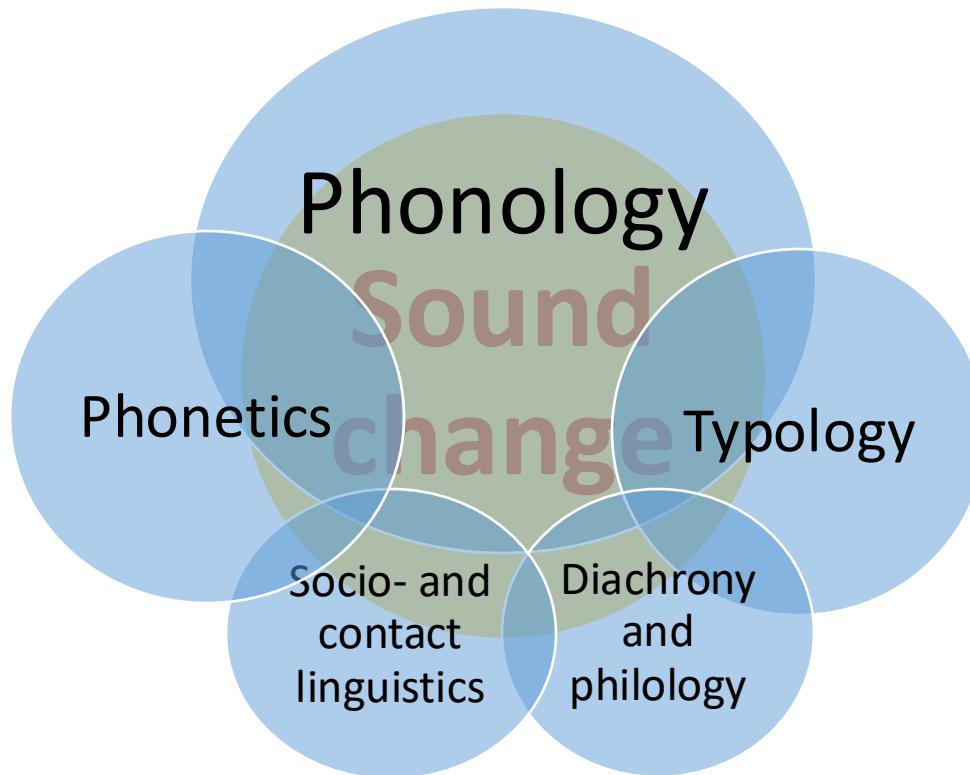
HELLO THERE!
MY NAME IS
ANDER EGUERRI

Methodology

Interdisciplinarity of sound change research



Interdisciplinarity of sound change research



Philology

rela, hilçen guira, eta hilçen guirela biçiguira nolaco baita goure biçia, halaco da gouré herioa, gaixto bada biçitcea, gaixto daté herioa, hounbada biçitcea hondaté herioa, eta gouré Jaincoaren çorbait miracuillu handiz campoan, gaixqui bicitçen denac Jaincoarē eta eliça saindiaren manu saindien contré, halacoac, eta alacoec, beharduté fingaitz eguin, peritu, eta damnatu, hala nola Jaincoaren, & haren eliça saindiarē maniac beguiraturie hilçē denac, eta hiltçē direnec beharbaituté finhoun eguin, Jaincoa icoussi, eta haren gloria eternalian saluatu,

/u/-fronting

/u/ → /y/

Philology

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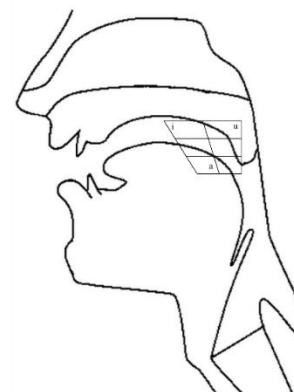
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/u/-fronting

Phonology

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Phonetics

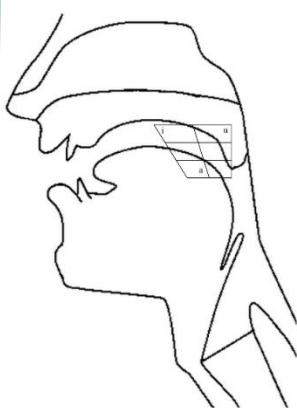
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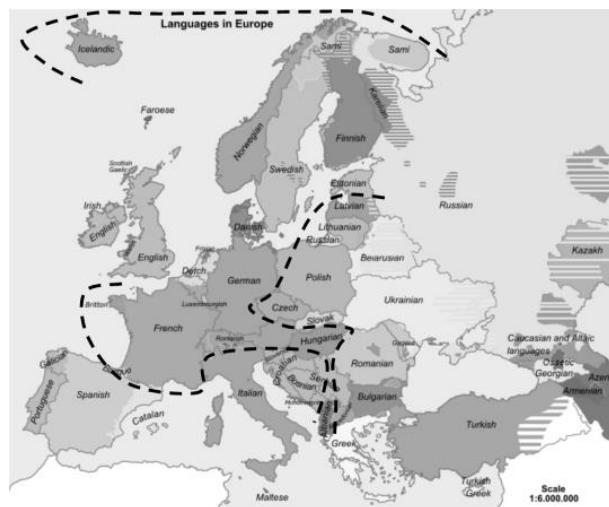
/s, z, r, rt, rt^h, rd/

vs.

Fronting contexts:

/p, b, t, d, c, ɟ, k, g, f, ʂ, ʐ, ʈʂ, ʃ, ʒ, ʈʃ, m, n, ɳ, l, ɻ, h, ɦ/

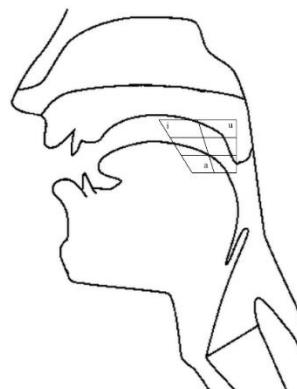
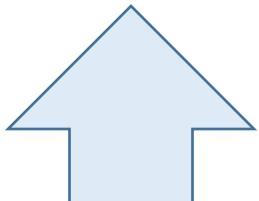




Philology

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Typology



/u/-fronting

$/u/ \rightarrow /y/$

Phonetics

Phonology

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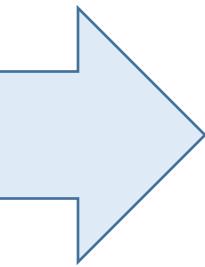
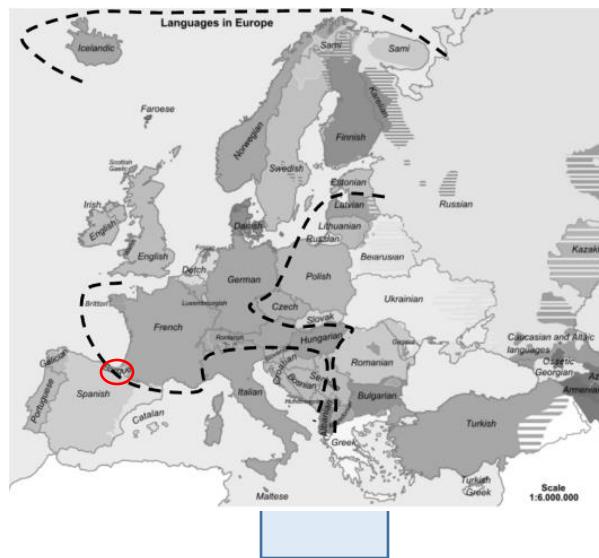
Fronting contexts:

$/p, b, t, d, c, \text{tj}, k, g, f, \text{s}, \text{z}, \text{ts}, \text{ʃ}, \text{ʒ}, \text{tʃ}, m, n, \text{ŋ}, l, \text{ʌ}, h, \text{h̄}/$

Languages in Europe

Typology



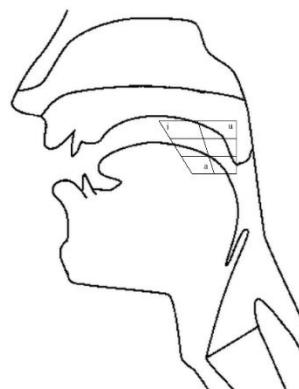
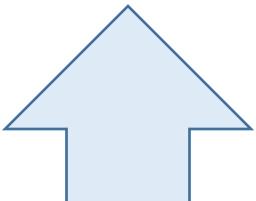


Philology

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Typology



Phonology

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Inhibitory contexts:
 $/s, z, r, rt, rt^h, rd/$

vs.

Fronting contexts:
 $/p, b, t, d, c, \tj, k, g, f, \s, \z, \ts, \s, \z, \tj, m, n, \n, l, \l, h, \hbar/$

Phonetics



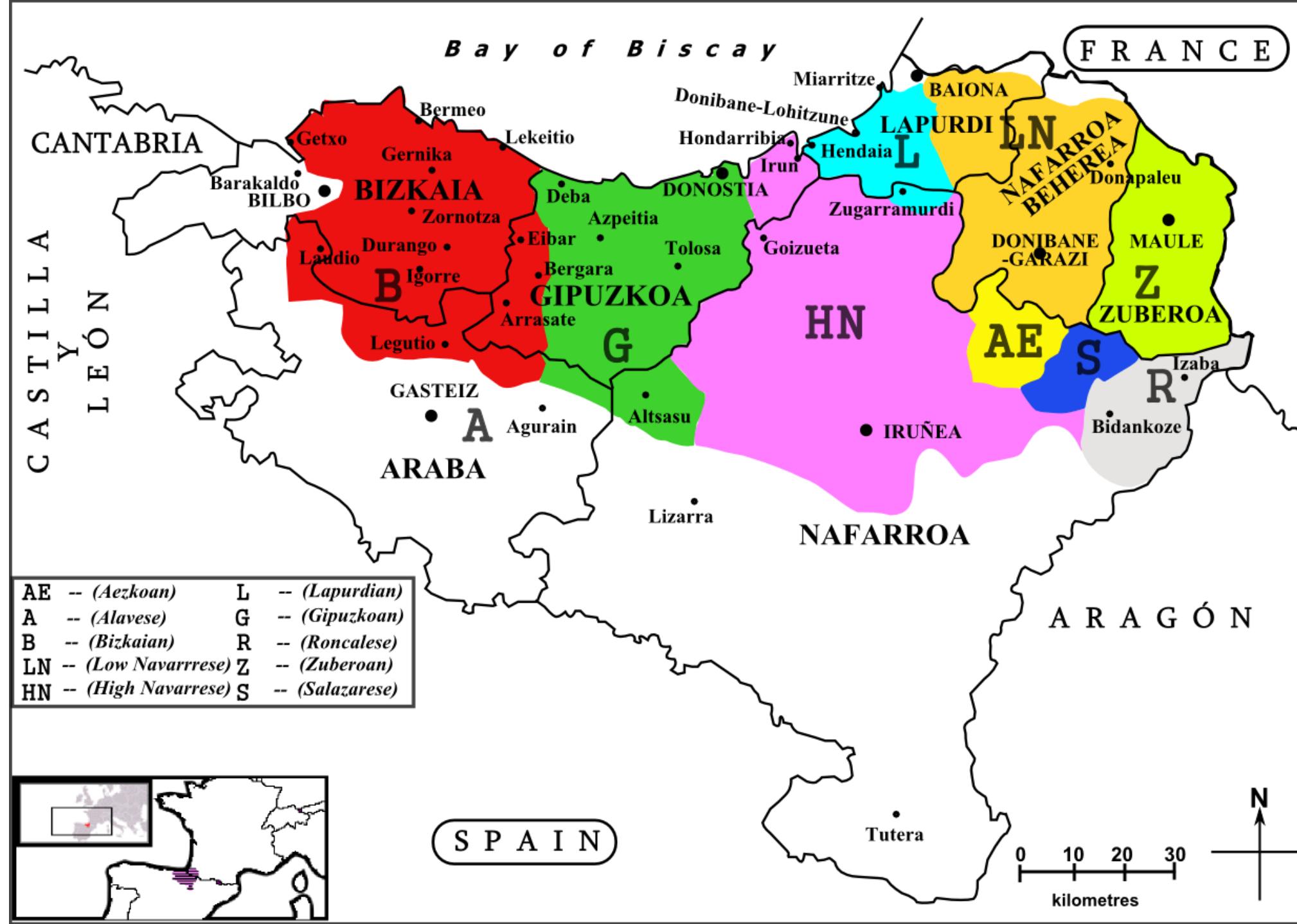
Research program: Sound change & Proto-Basque

- **Problem:** Limits of the historical-comparative method.
- **General aim:** To improve our understanding of Basque historical phonology from an interdisciplinary approach.
- **New approach:** To combine the historical-comparative method with phonetic detail and quantitative typological data.

Research program: Sound change & Proto-Basque

- **Why Basque?**: It's the best attested language isolate of the world.
- **Why isolates?**: They represent unique pathways in the evolution of human language.
- **Why now?**: Advances in quantitative linguistic methods and sound change theory.

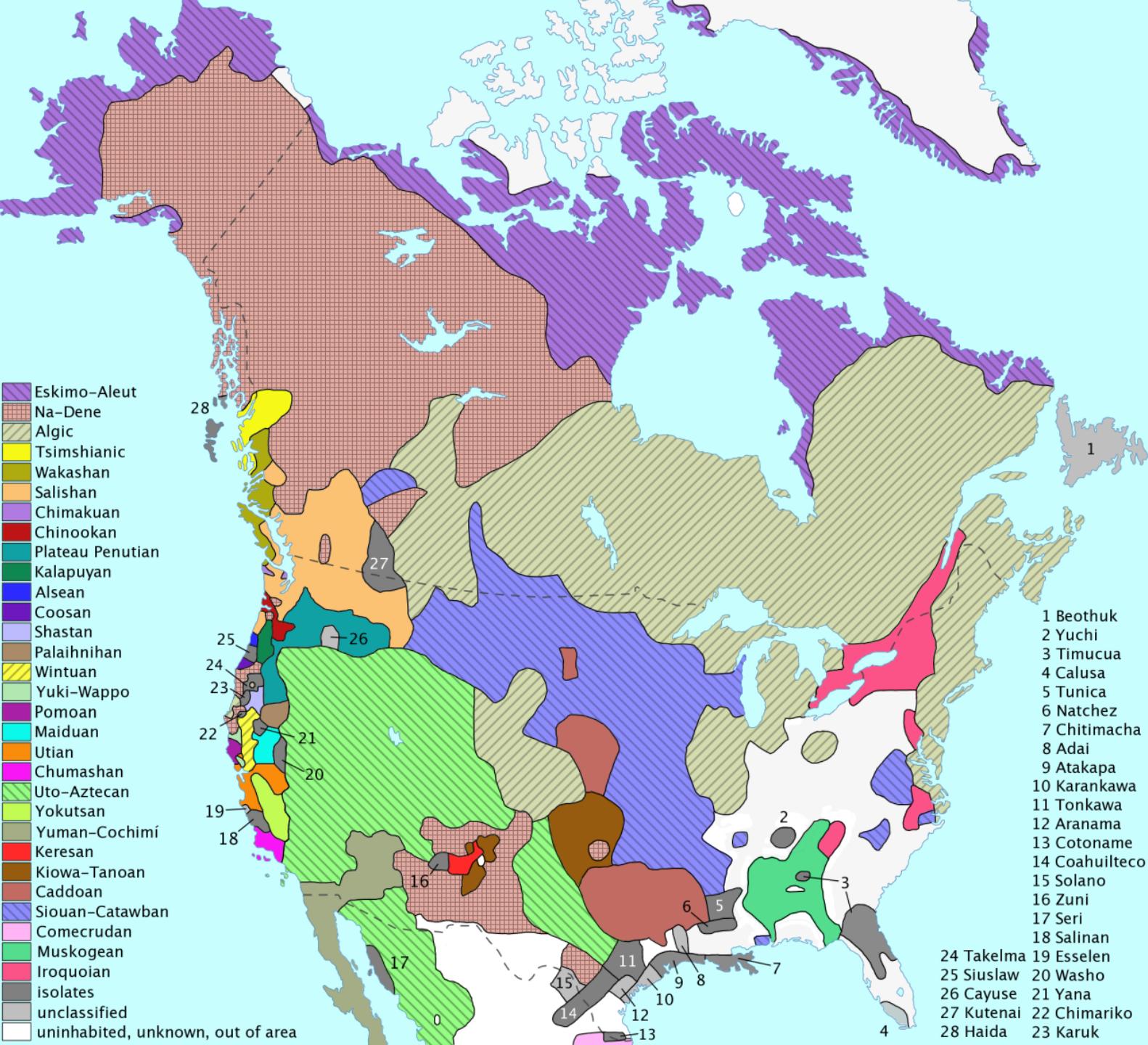
Basque



What makes Basque different?

- Why is it often said that Basque is different?
 - Because Basque is an isolated language.
- Are isolated languages unusual?
 - Basque is the only isolated language in Europe.
 - However, in the world, they are not that unusual.

Language isolates in North America



Language isolates (Campbell 2017)

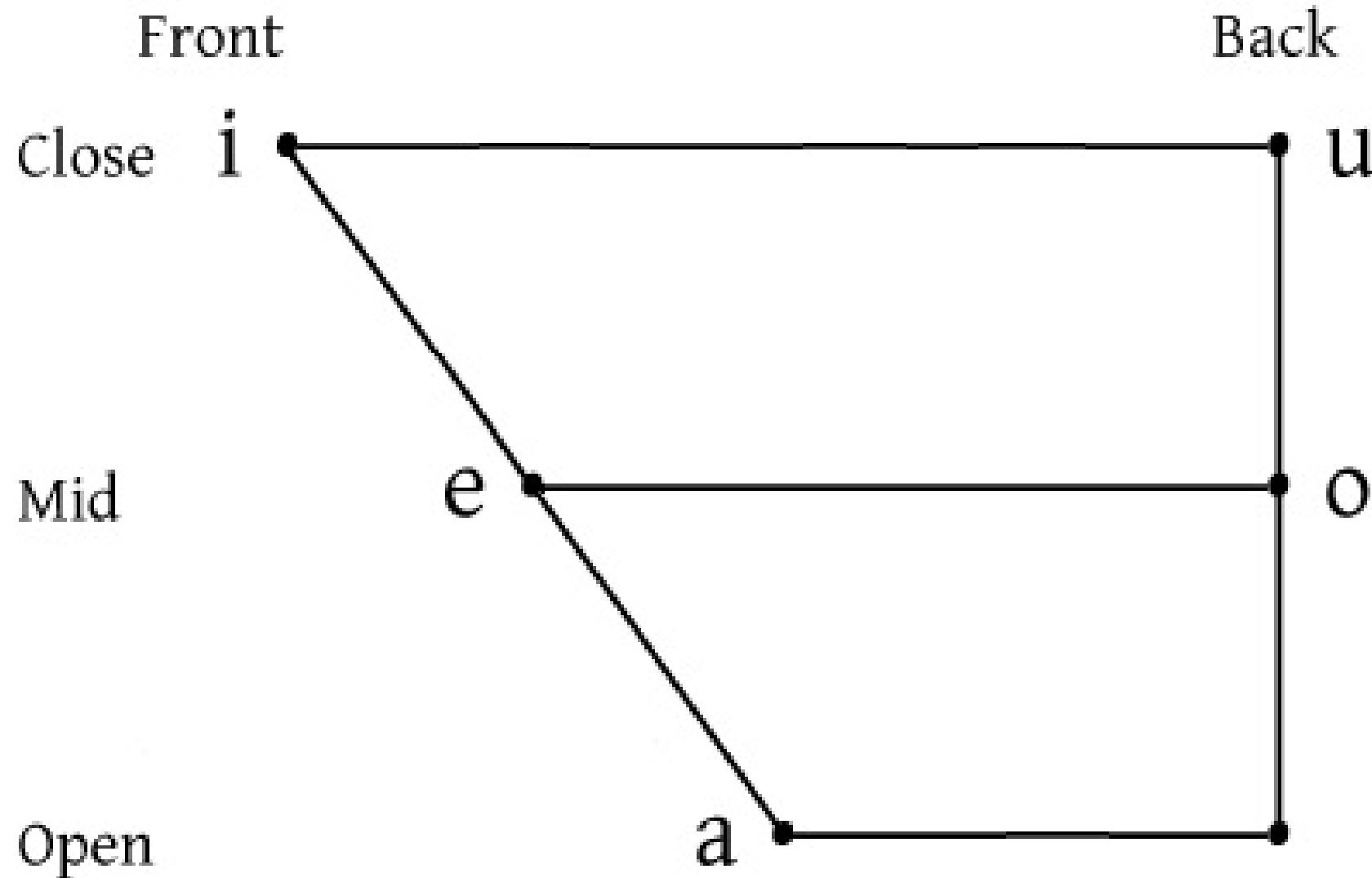
- Estimated number of language isolates in the world: c. 159.
- 39% of the world's language families (c. 407).
- “Monumental importance” to linguistic theory and language typology:
 - each of them “an independent lineage among the world’s languages”
 - an invaluable look at what is possible in human language.
- Yet, the comparative method finds most difficulties when applied to languages that lack relatives.
- Saussure (1916: 298) and Meillet (1925: 11-12) assume that no reconstruction is possible in languages such as Basque.

Intro to Basque Phonology

Standard Basque – Euskara Batua (Hualde 2003)

	labial	apical		laminar	predorsal		postdorsal
	bilabial	labio-dental	apico-dental	apico-alveolar	palato-alveolar	palatal	
stop	voiceless	p		t		c	k
	voiced	b		d		ɟ	g
fricative			f	s	ʂ	ʃ	x
affricate				tʂ	tʂ	tʃ	
nasal		m		n		ɳ	
lateral				l		ʎ	
tap				r			
trill				r			
	front	central	back				
high	i		u				
mid	e		o				
low		a					

VOWELS



Vowels at right & left of bullets are rounded & unrounded.

Vowels

- Standard Basque has a simple 5-vowel system which is also found in most varieties of the language: /a, e, o, i, u/
- Nonetheless, Zuberoan and Mixean Basque have a 6th vowel quality:
 - Described as /y/ in the literature: üñhürri, hüts, etc.
 - But potentially [ɯ] in Mixean (Egurtzegi & Carignan 2020).
- Some varieties might have a (yet) non-contrastive [e] that developed from the article –a through high-vowel assimilation:
mendi + a → mendixe [mẽndiʃe], *kale + a → kalie* [kaliɛ], etc.

Vowels

- On the other hand, **Zuberoan Basque has nasalized vowels:**
 - **Before or after a nasal:** *abentü* [aβẽn̩ty], *arrano* [arãñõ], *mamu* [mãmũ]
 - **Before or after a /h/:** *ahate* [ãhãte], *uhue* [ũhõe] (*ohore*), *ahizpa* [ãhĩspa]
 - **Word finally,** after the loss of a nasal in the final syllable:
salū /sa'lū/ (*saloin*), *ardū* /ar'dū/, *bedezī* /bede'zī/

Only the last group involves a phonemic opposition, e.g., /ū/, /i/... The rest are considered allophones of their oral counterparts.

(Although this was not the case of the vowels surrounding /h/ not that long ago).

Diphthongs in Basque

/ai/	<i>ibai</i> ‘river’
/ei/	<i>hodei</i> ‘cloud’
/oi/	<i>lehoi</i> ‘lion’
/au/	<i>gau</i> ‘night’
/eu/	<i>geure</i> ‘our (emphatic)’

Consonants in Basque (manner of articulation)

- **Stops:** /p/ <p>, /t/ <t>, /k/ <k> /b/ , /d/ <d>, /g/ <g> /c/ <tt>, /ɟ/ <dd>
- **Nasals:** /m/ <m>, /n/ <n> /ɲ/ <ñ>
- **Fricatives:** /f/ <f>, /ʃ/ , /x/ (South) <j>, /h/ <h>, /ħ/ <h> (Zuberoan)
/s/ <z>, /s/ <s>, /ʃ/ <x> (sibilants)
- **Affricates:** /tʂ/ <tz>, /tʂ/ <ts>, /tʃ/ <tx> (affricate sibilants)
- **Laterals:** /l/ <l> /ʎ/ <ll>
- **Rhotics:** /ɾ/ <r> /r/ (South), /ṛ/ (North) <rr>

Consonants in Basque (place of articulation)

- **Bilabials:** /p/, /b/, /m/, /p^h/
- **Labio-dentals:** /f/
- **Dentals:** /t/, /d/, /t^h/
- **Alveolars:** /s/, /z/, /t̪s/, /t̪z/, /n/, /l/, /r/, /r/
- **Postalveolars:** /ʃ/, /tʃ/, /ʒ/ (Zuberoan)
- **Palatals:** /c/, /tʃ/, /ɲ/, /ʎ/
- **Velars:** /k/, /g/, /k^h/, /x/ (South)
- **Uvulars:** /ṛ/ (North)
- **Laryngeals:** /h/, /ḥ/ (Zuberoan, Mixean)

Stops

- **voiced vs voiceless:** *b, d, g* vs *p, t, k*
- **voiceless aspirated:** *ph, th, kh*
- **palatal stops**, not so usual but also part of the language: /c/ *tt*, /ʃ/ *dd*
 - Hypocoristic use: *tipi* → *ttipi*, *aita* → *atta*, etc.

Distribution of voiced vs. voiceless stops

- Opposition:
 - Between vowels (V_V): *zabal* vs. *zapal*; *ager* vs. *aker*
 - Word-initially (#_): *buru* vs. *puru*, *du* vs. *tu*, *gai* vs. *kai*
- Neutralization:
 - Word-finally: *-*d*, *-*g* > -*t*, -*k*: *dut* but *dudan*, *dudala*.
 - Following a sibilant: *ospe*, *asto*, *asko*.
 - CC clusters: No TT or TsT: *dotore*, *erretore* (vs *doktore*, *errektore*).
 - Voicing after a sonorant (*l*, *n*): Lat. *altarem* > *aldare*, Lat. *tempora* > *denbora* (many exceptions: *kanpo*, *kantu*, *hanka*, *kolpe*, *bedeinkatu*, *malko*, *anker*).

Aspirated stops

- In **Zuberoan** and **Low Navarrese**.
- **First two syllables** only:
 - (i) **Word-initially** /#_/: *phala, thúta, khanta*
 - (ii) **Between vowels** /V_V/: *bákhus*
 - (iii) **Following /r/ /r_/:** *arthó*
 - (iv) **Following /n/ /n_/:** *manthár*
 - (v) **Never after /s_/:** ***sph, sth, skh*, (e.g. *asto, hauspoa, aski*... no ***sb, sg, sd* either)

Sibilant fricative and affricates

- Fricatives (voiceless): /ʂ/, /ʂ̩/, /ʃ/
 - /ʂ/ lamino-alveolar fricative
 - /ʂ̩/ apico-alveolar fricative
 - /ʃ/ post-alveolar fricative
- All of them with **affricate** counterparts: /tʂ/, /tʂ̩/, /tʃ/

Sibilant fricative and affricates

- Distribution:
 - **Word-initially ($/\#_$)**: /s/ and /ʂ/ often, /tʂ/, /tʂ̥/ rarely (*tzar*, *tzakur*). The distribution of /ʃ/ and /tʃ/ changes from a variety to another.
 - **Between vowels ($/V_V$)**: Opposition between /ʂ/ - /tʂ/, and /s/ - /tʂ̥/: *azal*, *izan*, *atzo*, *etzi*, *etzan*, *esan*, *osaba*, *atso*, *otso*...
 - **Following a stop ($/T_$)**: only in loans (*seksu*, *absolutu*). In the East, stop + sibilant → affricate (*etsenplu*, *atsolutoki*).
 - **Following a sonorant ($/n, l, r_$)**: sibilant → affricate: *antz*, *pentsa*, *beltz*, *eltze*, *hartz*, *ertz*. But sonorant + fricative + stop: *beltz* > *belztu*, *hortz* > *horzkari*, *mendirantz* > *mendiranzko*...
 - **Preceding a consonant ($/_C$)**: fricatives only: *esne*, *ahizpa*, *gaixto*, *ixtorio*. In compounded words: affricate → fricative: *hotz* > *hoztu*, *hitz + tegi* > *hiztegi*, *hetsi* > *hesten*...
 - **Word-finally ($/_\#$)**: affricates (*mahats*, *latz*), but, less often, fricatives are also possible (*maiz*, *arnas*).

Laryngeals

- Only in the East nowadays.
- Restrictions in the distribution of /h/:
 - **only one aspirated segment** in a word: *hilerri*.
 - **only in the first or second syllable**:
hasi, hauts, hortz, ahal, aho, erhi, alhaba, üñhürri...
Same restrictions for voiceless aspirated stops:
sorthü, sarthü vs. pharkatü, heltü, kobesatü...
- /h̚/ only intervocally in the second syllable
(nowadays only found in Zuberoan and Mixean):
aħate, oħore, aħizpa, miħi...

Other voiceless fricatives: /f/, /x/

- Relatively infrequent.
- The voiceless labio-dental fricative /f/ is contrastive nowadays, but not in earlier times (*festa / pesta; Fernando / Pernando*)
- /x/ is only found in the South, and it's not general even there (only found in loanwords in Bizkaian and High Navarrese).

Voiced sibilant fricatives

- All three counterparts of /ʂ/, /ʂ/, /χ/ in Zuberoan: /z/, /ʐ/, /ʒ/
- Mostly in loanwords, but not only:
bedezi /bedeʐi/; *aizina* /aiʐina/
aisa [aiʐa]
- /ʒ/, the voiced counterpart of /ʃ/, evolved from an older *j. We find it in **Zuberoan** and in **Bizkaian** (Lekeitio, Bermeo). Utterance-initially it becomes an affricate:
mendia [mendiʒa], *harria* [ariʒa]
jan [dʒan] vs. *asko jan dau* [aʂkoʒãndaw]

Nasals

- Bilabial nasal /m/
- Alveolar nasal /n/
 - Both word-initially and intervocally: *makila, neska, anaia, amua...*
 - Word-finally only /n/: *esan, egin, izan, izen, lagun, gizon...*
 - They are always voiced.

Nasals

- Palatal nasal /ɲ/
 - It can be phonemic, but it is not frequent in the language.
 - It also has a hypocoristic use: *ñimiño, andereño, Beñat, Arño...*
 - It's often allophonic: *min/miñ, zain/zaiñ*, etc.

Laterals

- Alveolar lateral /l/
 - Word-initially (*lan*), and between vowels (*ile*), word-finally (*zabal, azal*)
- Palatal lateral /ʎ/
 - Phonemic?
 - It also has hypocoristic use: *llagun, llabur*
 - Often allophonic: *mutila/mutilla, botila/botilla*, etc.

Rhotics

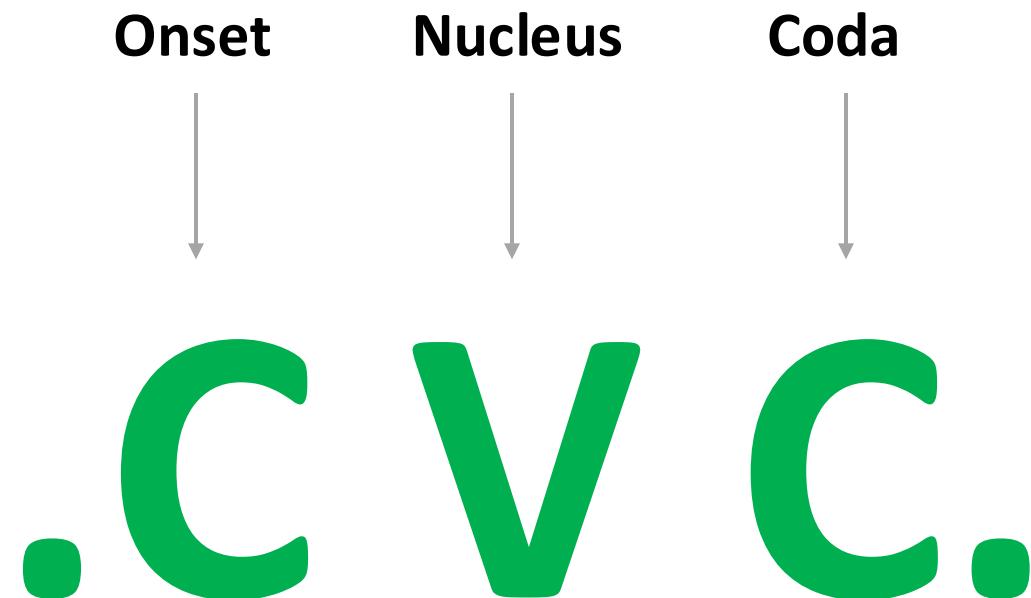
- **Intervocally**
 - Two **contrastive rhotics** (tap and trill): *ere* vs. *erre*, *bare* vs. *barre*, *gora* vs. *gorra*
- **Word-finally**
 - **Mostly /r/** at the end of the root: *ur*, *hor*, *zakur*, *eder*, *sagar*
 - **/r/ rarely:** *ur* (> *ura*), *barur* (> *barura*), *plater* (> *platera*)
- **Elsewhere → neutralization:**
 - **Preceding a consonant /_C:** *arto*, *erne*, *ertz*, *arno*
 - **Following a consonant /C_:** *pobre*, *andre*, *droga*, *prakak*
- **Word-initially → Restriction:** no rhotics.
 - Loans with prosthetic *e*-: *errima*, *errege*, *Erroma*, *erregela*
 - Rarely *i*- or *a*-: *irrisa*, *arropa*, *arrazoin*, *arratoin*, *arraza*
 - Nowadays /r/ is also possible in recent loans: *rugbia*, *Real...*

Rhotics

- The tap was lost in **Zuberoan** in the 19th c.:
 - Systematically dropped: *axeri* > *axeи*, *gero* > *geo*, etc.
Afterwards, the production of the trill was shortened:
arreba > *areba*, etc.
 - However, it's still not as short as a /r/, and there's a lot of synchronic variation in its production.

Syllable

- An organized sequence of segments smaller than a word, containing at least a nucleus.
- [**C** = consonant, **V** = vowel, **.** = syllable boundary]



Syllable onset

- Three possibilities:
 - **No onset:**
 $V(w)$, $V(w)C$, $V(w)CC$, etc.
 - **Simple onset:**
 $CV(w)$, $CV(w)C$, $CV(w)CC$, etc.
 - **Consonant cluster:**
 $CCV(w)$, $CCV(w)C$, $CCV(w)CC$, etc.

Syllable onset

- The only groups allowed in the onset are “muta cum liquida”:
/b, d, g, p, t, k, f/ + /r, l/
 - Some combinations are not attested: **/tl/ and **/dl/.
- Recent loans: *pobre, prakak, fresko, triste, krabelin, gris, dragoi*, etc.
- These clusters were not allowed in earlier stages of the language:
 - Loss of the obstruent: Lat. *placet* > *laket*, Lat. *pluma* > *luma*
 - Vowel epenthesis: Lat. *crucem* > *gurutze*, Lat. *librum* > *liburu*

Syllable nucleus

- Types of nuclei:
 - Single vowel:
V, VC, VCC, CV, CVC, CVCC, CCV, CCVC, CCVCC, etc.
 - Diphthong:
**Vw, VwC, VwCC, CVw, CVwC, CVwCC, CCVw,
CCVwC, CCVwCC, etc.**

Syllable nucleus

- In Basque, diphthongs are **falling**: *aita, euskara, suin*, etc.
/a, e, i, o, u/ + /j, w/
- Rising diphthongs are instead produced as hiatuses, separated by a syllable boundary: *men.di.a, na.zi.o, bu.ru.a, zu.ok, su.er.te, si.es.ta...*

Syllable coda

- Three coda options:
 - **No coda:**
 $V(w)$, $CV(w)$, $CCV(w)$, etc.
 - **Single consonant:**
 $V(w)C$, $CV(w)C$, $CCV(w)C$, etc.
 - **Consonant cluster:**
 $V(w)CC$, $CV(w)CC$, $CCV(w)CC$, etc.

Syllable coda

- Fewer possible consonants at the word-internal coda than at the end of the word.
- Consonant clusters:
 - Only two options word-medially.
 - More options word-finally.

Word-internal syllable coda

- A **nasal** sharing the place of articulation of the following consonant: [kãmpo], [ãndre], [ãŋka], [fãmfarroi], [õŋʃo]
- A **liquid** (/r/ or /l/): *alde, arto*
- A **sibilant fricative**, shares the voicing of the following consonant : *esne* [eznẽ], *ehti* [eʂti], *ixtorio* [iʃtorio]
- **Consonant clusters in morpheme boundaries:**
 - nasal + sibilant fricative: *mendiranzko* (*mendirantz*)
 - liquid + sibilant fricative : *belztu* (*beltz* + *-tu*)
- **Stops and affricates are disallowed:**
 - Stops are dropped: *doctore* > *dotore* (only maintained in recent loans, *doktore*).
 - Deaffrication: *mendirantz* + *-ko* → *mendiranzko*, *huts* + *-tu* → *hustu*, *beltz* + *tu* → *belztu*

Word-final syllable coda

- A **nasal** (/n/): *gizon, eman, ehun, egin*
- A **liquid** (/r/ or /l/, but not /ɾ/): *azal, mutil, adar*
 - /ɾ/ was possible in Roncalese and Zuberoan (*h)ur* vs. (*h)urr*)
- A **sibilant fricative** /ʂ/, /ʂ̪/, /ʃ/: *arnas, maiz, exkax*
- An **affricate** /tʂ/, /tʂ̪/, /tʃ/: *hots, hotz, amets, ametz, honatx*
- A **stop/k/, /t/**: *zonbat, neskak*
 - /p/ only in phonaesthetic words: *bap! eup! iep!*

Word-final syllable coda

- **Dialectally widespread consonant clusters:**
 - /n/ + affricate: *antz, mendirantz...*
 - Liquid /r, l/ + affricate : *beltz, bortz, beltx, umezurtz, herts...*
 - Fricative sibilant + /t/: *bost, zizt...*
- **+ two other options in the East:**
 - /n/ + stop: *galant, hunk...*
 - /r/ + stop: *idort, bart...*

Synchronic variation and ongoing changes

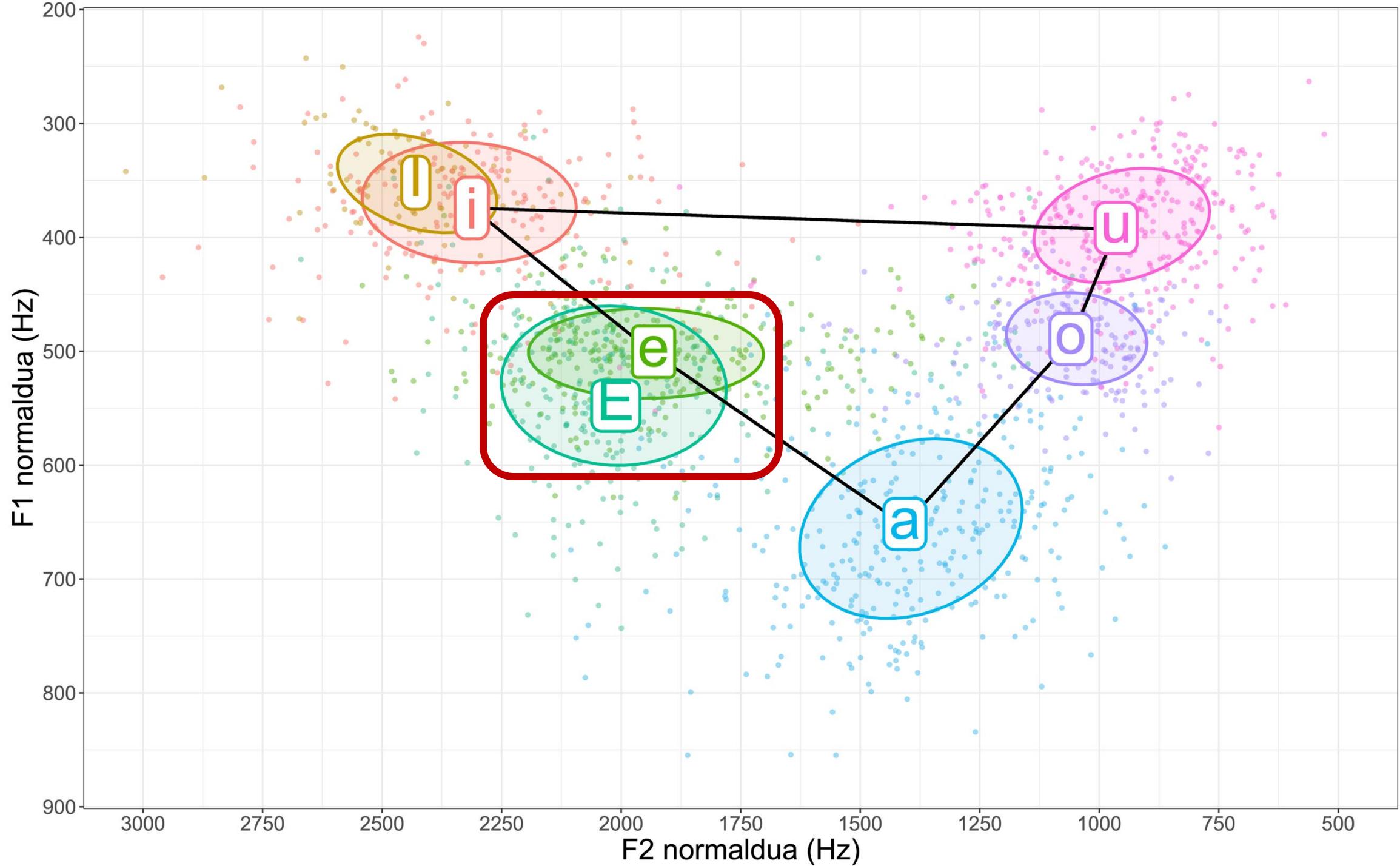
Low vowel assimilation

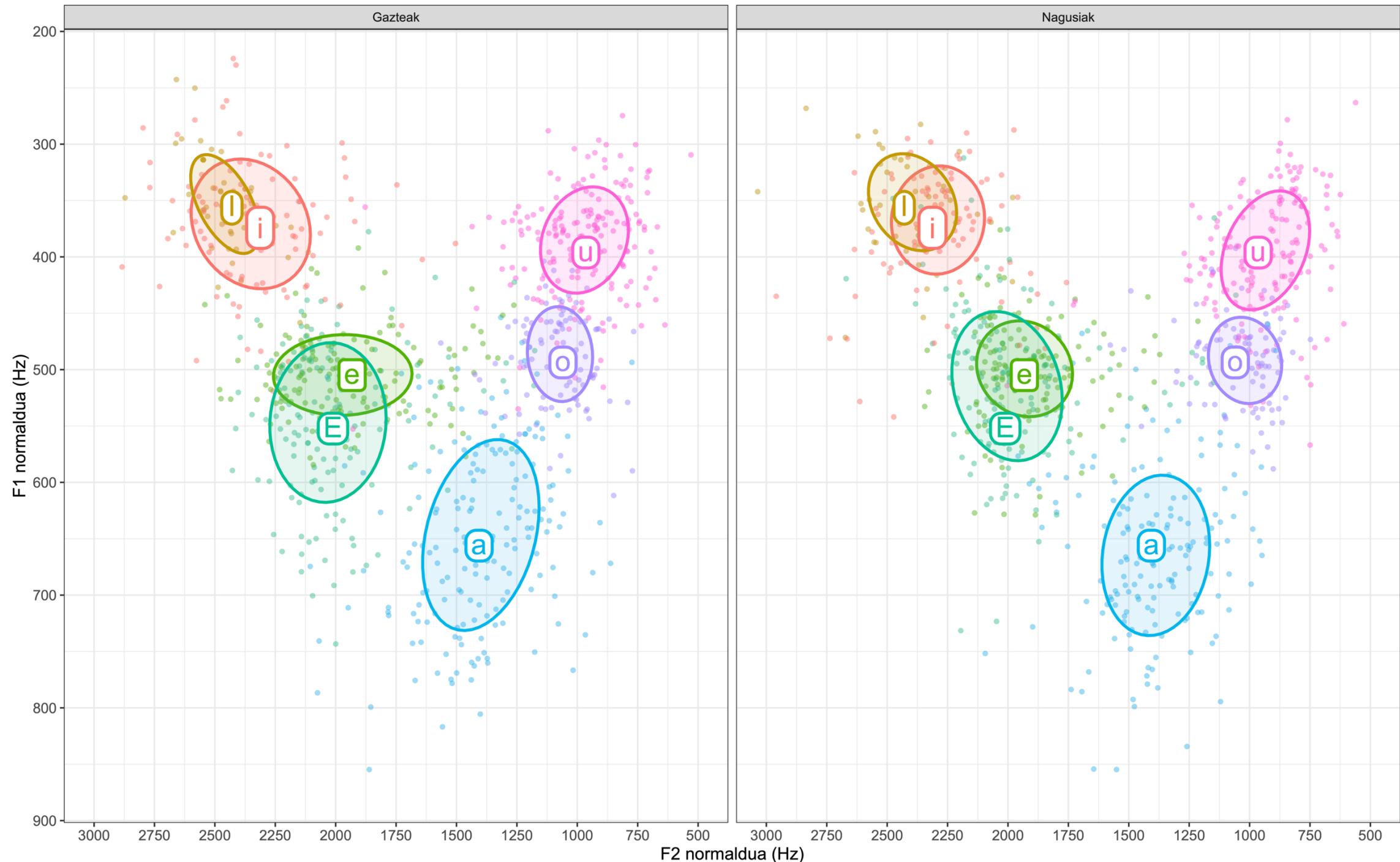
/a/ → [e] /i, u(C)_

- Assimilation: /a/ is produced as [e] when preceded by a high vowel.
- In Bizkaian, Gipuzkoan, and High Navarrese.
- Examples:
 - Word-medially: *indar* ~ *inder*; *mila* ~ *mile*; *izan* ~ *izen*; *sukalde* ~ *sukelde*...
 - Declension: *lagun* ~ *lagune*; *mutil* ~ *mutile*...
 - With *bat* 'one' or auxiliary verbs: *lagun bat* ~ *lagun bet*; *etorri da* ~ *etorri de*...

Low vowel assimilation

- Not found in compounds / with some particular suffixes: ***buru-hendi*; ***bigerren*; ***baserriter*.
- In Ondarroa -a needs to be word-final: *lagune* but *lagunak*.
- Usually described as /a/ > /e/, but there's [ɛ] in Azpeitia, Azkoitia, Zaldibar, etc.

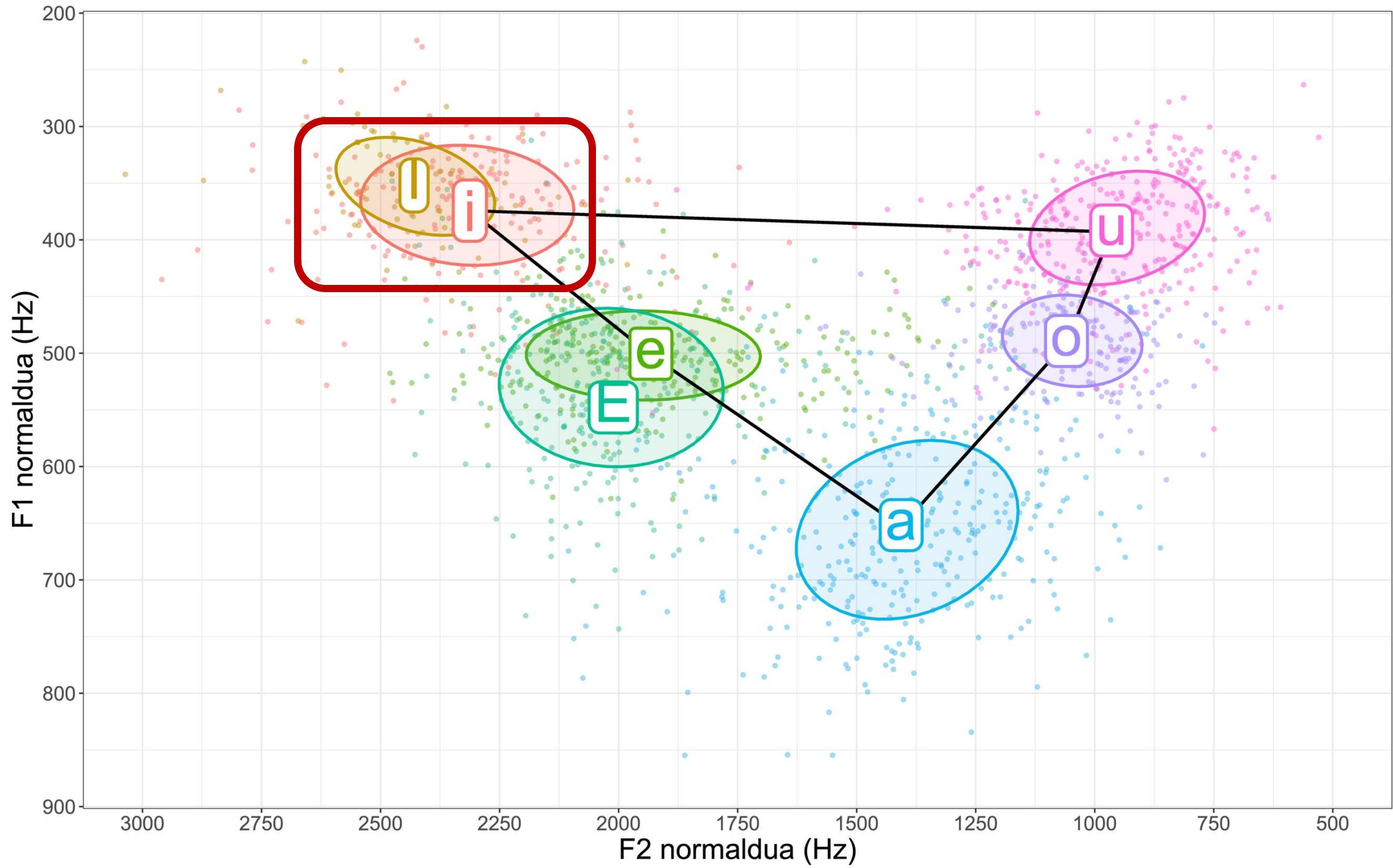


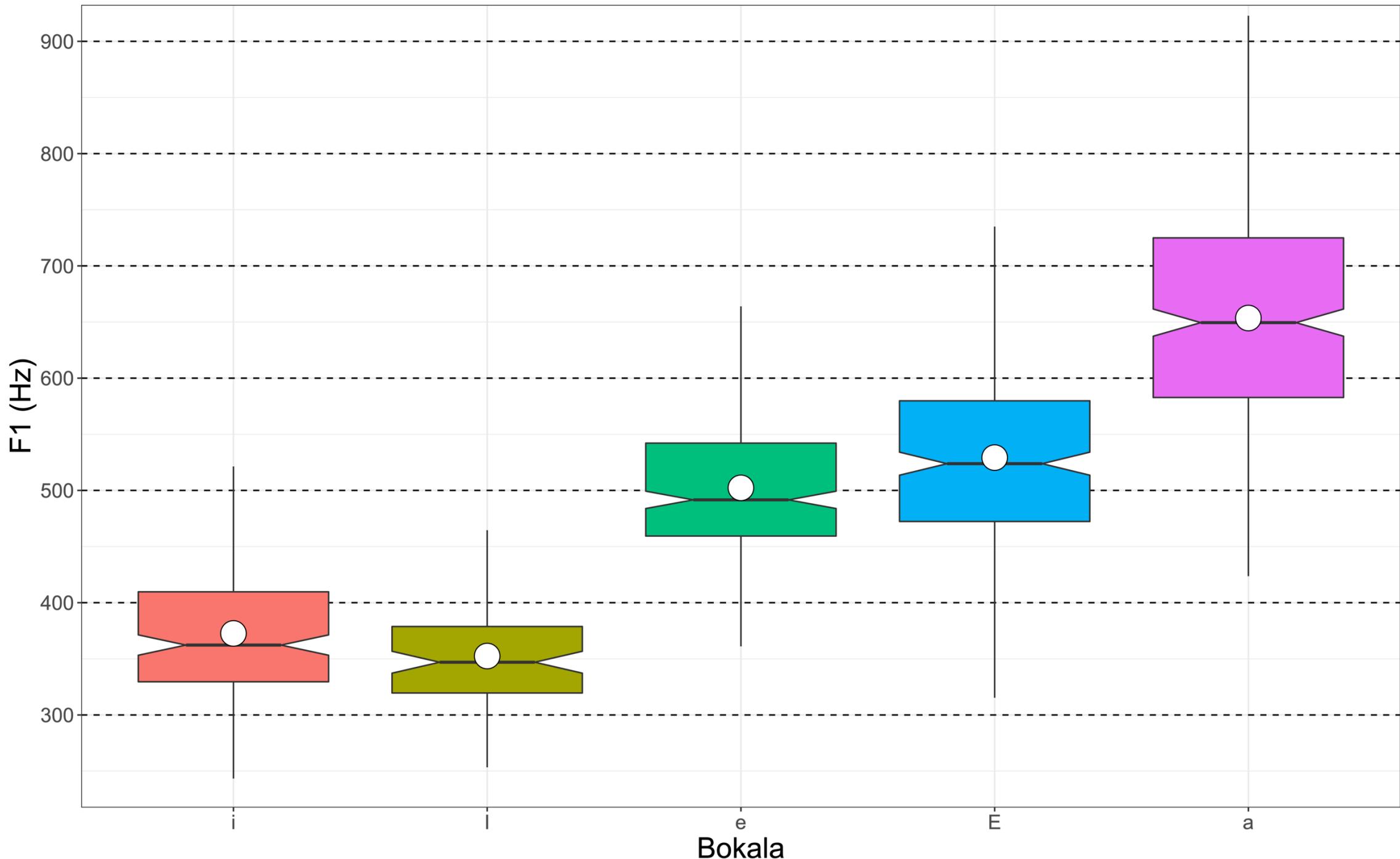


Mid vowel raising

/e/ → [i] and /o/ → [u] / _V

- /e/ is produced as [i], and /o/ is produced as [u] when followed by a vowel (e.g., the determiner -a).
- Examples:
 - Declension: *etxe+a* → *etxia*; *kale+a* → *kalia*; *baso+a* → *basua*; *itsaso+a* → *itsasua*
 - Sometimes word-medially: *bear* > *biar*; *beor* > *bior*





Hipotesi lineala	Estimatua	SE	z-balioa	$Pr(> z)$
$I - i = 0$	-21.702	8.434	-2.573	ez esanguratsua
$e - i = 0$	120.625	6.647	18.146	< 0.001
$E - i = 0$	153.377	6.180	24.820	< 0.001
$a - i = 0$	280.811	6.206	45.251	< 0.001
$e - I = 0$	142.327	8.192	17.374	< 0.001
$E - I = 0$	175.078	7.520	23.281	< 0.001
$a - I = 0$	302.513	7.661	39.485	< 0.001
$E - e = 0$	32.752	5.910	5.541	< 0.001
$a - e = 0$	160.186	5.580	28.705	< 0.001
$a - E = 0$	127.435	5.332	23.901	< 0.001

Consonant epenthesis after high vowels

/Ø/ → [j], [χ], [f], [ʃ], [ʒ] (depending on the variety) /i_V

/Ø/ → [w], [β], [b] (depending on the variety) /u_V

- When a high vowel (/i/, /u/) is followed by another vowel, a consonant is added between the two.
- Examples:
 - Declension, after /i/: *mendi+a* → *mendiya*, *mendidxa*, *mendixa*...
 - Declension, after /u/: *buru+a* → *buruba* (Gipuzkoan and Navarrese); *sut+a* → *suya* (Etxepare 1545).
 - Also word-medially: *biar* > *biyar*, *bidxar*, *bixar*...

Vowel raising and complete assimilation

/a/ → [e] /_a (absolutive singular)

- Root-final /a/ is produced as [e] in the absolute singular form, dismantling a sequence of two low vowels (dissimilation).
- Western & Central varieties.
- Examples:
 - noun + article = *alaba+a* → *alabea*, *fabrika+a* → *fabrikea...*

Vowel raising and complete assimilation

Consecutive sound changes:

- Dissimilation /aa/ > /ea/ (dissimilatory low vowel raising).
- Dissimilation /ea/ > /ia/ (mid vowel raising) (Lekeitio, Eibar..).
- Assimilatory low vowel raising: /ia/ > /ie/ (Bermeo, Gernika, Azkoitia): *alabie, alkondarie, neskie...*
- Assimilatory development of long vowels: /ie/ > /ii/ (original -a and -e: *alaba, ume*): *umiin ama...*
- Complete assimilation and reduction: *neskie* > *neskii* > *neski* (Ondarroa), *neskea* > *neskee* > *neske* (Getxo).

Unrounding

/y/ → [i] /_a,e (Zuberoan)

- Examples:
 - Before an article: *lekhü+a ~ lekhia, lekhiek, mündü ~ mündia, etc.*
 - In Roncalese, unrounding or metathesis? *lekiua, mundiua, etc.*

Rgregressive rounding assimilation

/i/ → /y/ /_Cy (Zuberoan)

/i/ → /u/ /_Cu (Roncalese)

- Always regressive, additional backing in Roncalese (no /y/).
- Examples:
 - Zuberoan: *ithürri* > *üthürri*, *iñhürri* > *üñhürri*...
 - Roncalese: *iturri* > *uturri*, *iñurri* > *uñurri*...

Vowel loss: *syncope* and *aphaeresis*

- Unaccented vowels are reduced in Western Navarre (Bortziri, Malerreka).
- Loss of posttonic vowels before a consonant in Arantza: *básotik* > *bástik* 'glass' (vs. *basótik*), *eskólatik* > *eskóltik*, *elízatik* > *elíztik*...
- This results in new clusters and codas: *ateetatik* > *atét.tik* (vs. *atétik*), *eskopeta* > *eskop.ta*, *berriketan* > *berrik.tan*...
 - More complex codas: *(h)an.ketan* > *ank.tan*, *ekar.tzeko* > *kártz.ko*...
- Roncalese & Salazarese: *tipula* > *tupla*, *tempora* > *tempra*...
- Aphaeresis is also attested in Baigorri and Navarre: *(e)maztea*, *(e)karri*

The ongoing fortition of *j

- In Gipuzkoa, Bizkaia and Upper Navarre, pre-vocalic /j/ has undergone the same evolution as in Spanish:

[j] > [χ] > [ʒ] > [ʃ] > [x]

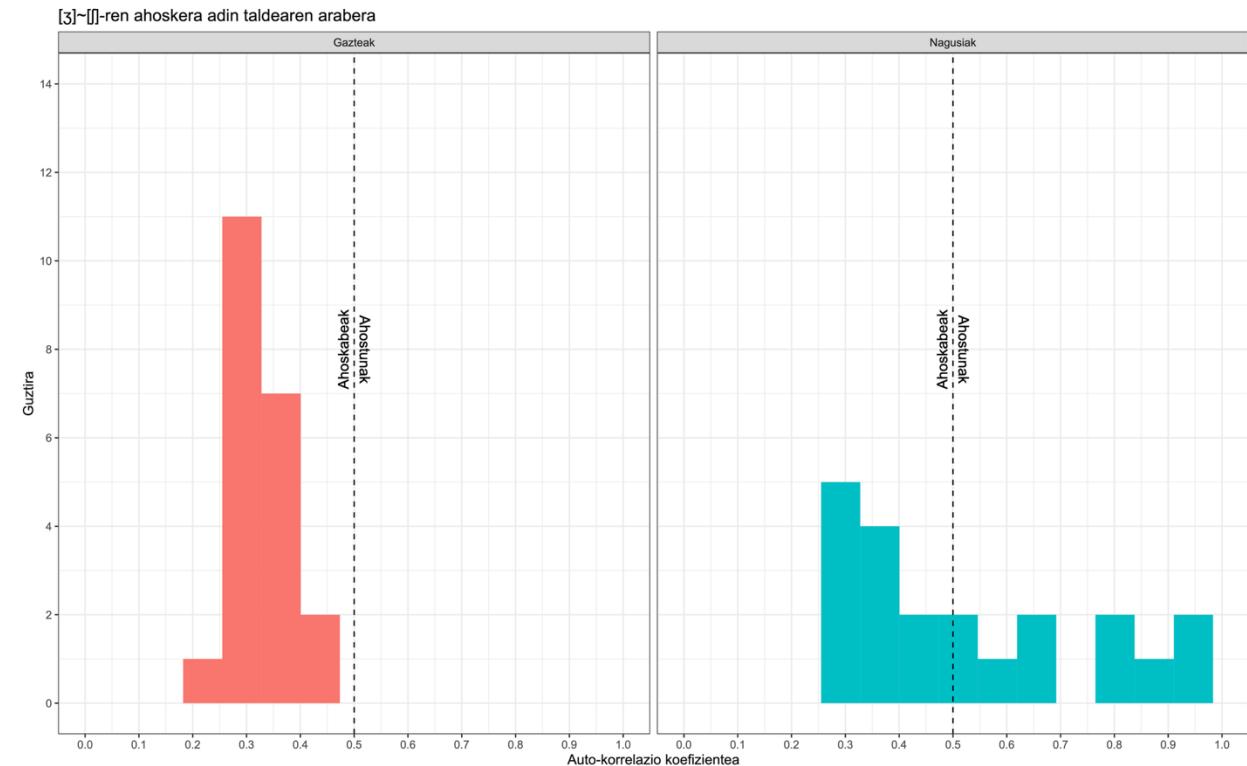
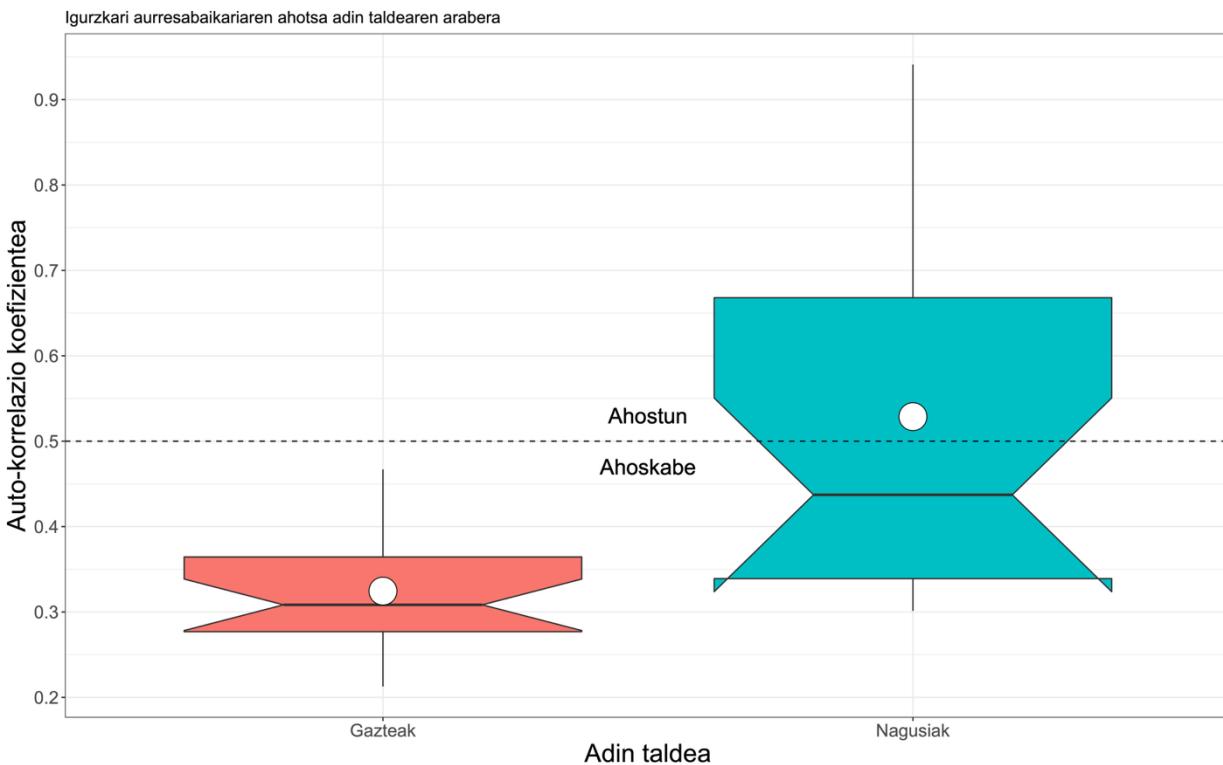
- In other places, this evolution has stalled at some intermediate stage.

The ongoing fortition of *j

- i) In Zuberoan and Northern Bizkaian, a voiced post-alveolar sibilant: [ʒãŋ].
- ii) In High Navarrese (Erronkari and Zaraitzu) voiceless: [ʃãŋ].
- iii) Velar [x] mostly in Gipuzkoan. It resulted from contact with Spanish (some adaptations can also be found, e.g. *Jose* > *Kose*).
- iv) In Lapurdian, Low Navarrese, High Navarrese, Bizkaian: [jãŋ].

The ongoing fortition of *j

- Nonetheless, some “stalled” evolutions can eventually continue their course.
 - [ʒ] > [ʃ] in older-to-younger speakers of Zaldibar Basque.



Assimilatory palatalization

/l/, /n/, /t/ → [ʎ], [ɲ], [c] /i,j_(V)

- Some consonants are palatalized when following a front vowel /i/ or glide [j].
- Examples:
 - *langile* > *langille*, *mutila* > *mutilla*; *ditut* > *dittut*; *mina* > *miña*...

Affective palatalization

/l/ ~ /ʎ/; /n/ ~ /ɲ/; /t/ ~ /c/; /ʂ, ʂ/ ~ /ʃ/

- The same palatalization processes may occur without a triggering phonological context due to affective palatalization.
 - *xuxen, xagu, xahar, xexen, xoxo, xoro.*
- Some affective forms have been lexicalized, and are now unmarked:
 - *txerri, txakur* (*zerri* and *zakur* only for big animals or as insults).
- In fewer varieties /t, d/ and /l, r/ are also affectively palatalized:
 - *tanta ~ ttantta, kutun ~ kuttun, eder ~ edder.*
 - *lagun ~ llagun, labur ~ llabur, polita ~ pollita, bero ~ bello, hori ~ holli.*

Affective palatalization

- In general, varieties with widespread assimilatory palatalization don't show much affective palatalization.
- On the other hand, in varieties with no assimilatory palatalization the incidence of affective palatalization is very high.
- Also used in child-directed speech: *zoazi, errakozu, zatoz... > xaxi, errakoxu, xato...*

Heterosyllabic consonant clusters

- Stop clusters are simplified, both historically and synchronically:
gizonak datozi [giʂõnãtatos], *ez dakit ba* [eʂtakipa].
- Stop + fricative:
 - /t/ + /ʂ, s/ > /tʂ/: *bait zira* [bajtʂira].
 - /k, p/ + /s/ > /T.S/: *lagunak ziren* [lã.ʂū.nãk.ʂि.ɾẽn].
 - In the East /T/ + /S/ > /tʂ/ (*absoluto* >> *atsoluto*, *exemple* >> *etsenplu*), also synchronically (*lagunak ziren* > [laʂūnãtʂirẽn]).

Heterosyllabic consonant clusters

/tʂ/ → [ʂ] / _C

- Deaffrication before a stop.
- Examples:
 - *hitz ~ hiztegi, hizlari; hortz ~ horzkari; mendirantz ~ mendiranzko...*

Stop devoicing

/D/ → [T] / S_

- Stop devoicing after a sibilant.
- Examples:
 - *gara* ~ *kara* (*gara* ~ *ezkara*); *bada* ~ *pada* (*bada* ~ *ezpada*).
 - *gain* ~ *kain* (*Berrogain* ~ *Azkaine*); *doi* ~ *toi* (*Ihdoi* ~ *Ameztoi*);
di ~ *ti* (*pagadi* ~ *harizti*).

Stop voicing

/t, k/ → [d, g] /n, l_

- Voicing after sonorants (mostly /n, l/).
- Examples:
 - *-tu ~ -du (nekatu ~ galdu); -ta ~ -da (ikusita ~ eginda); -ko ~ -go (ikusiko ~ jango); -tik ~ -dik (Bidarraikitik ~ Irundik); -tar ~ -dar (Bilbotar ~ Baztandar)...*

Sibilant voicing

/s, ʂ/ → [z, ʐ] / _b,d,g,n,m,l...

- Voicing of sibilants before a voiced consonant.
- Examples:
 - *desgogo, ezberdin, esne, asmatu, hizlari...*
- Preceding a stop mostly with prefixes.
 - In older words, stop devoicing instead.

Post-sonorant affrication

/s, ʂ/ → [ts̪, tʂ] /n,l,r_

- Sibilants are affricated when following a sonorant.
- Examples: *zen ~ tzen* (*joan zen* → *joantzen*); *zara ~ tzara* (*hil zara* → *hiltzara*); *zuen ~ tzuen* (*hor zuen* → *hortzuen*).

“Dessibilization” of affricates

/t^ʂ/ → [t] / S_{_}

- Affricates following a sibilant become stops.
- Examples: *-tzen* ~ *-ten* (*etortzen* ~ *hesten*); *-tzaile* ~ *-taile* (*antolatzaire* ~ *moztaille*).

Intervocalic tap loss

/ɾ/ → [∅] /V_V

- Loss of intervocalic taps.
- Common to many varieties, but systematic in Zuberoan.
- Examples: *zira* ~ *zia*; *zure* ~ *zue*; *hura* ~ *hua*.

Intervocalic voiced stop lenition and loss

/b/, /d/, /g/ → [∅] /V_V

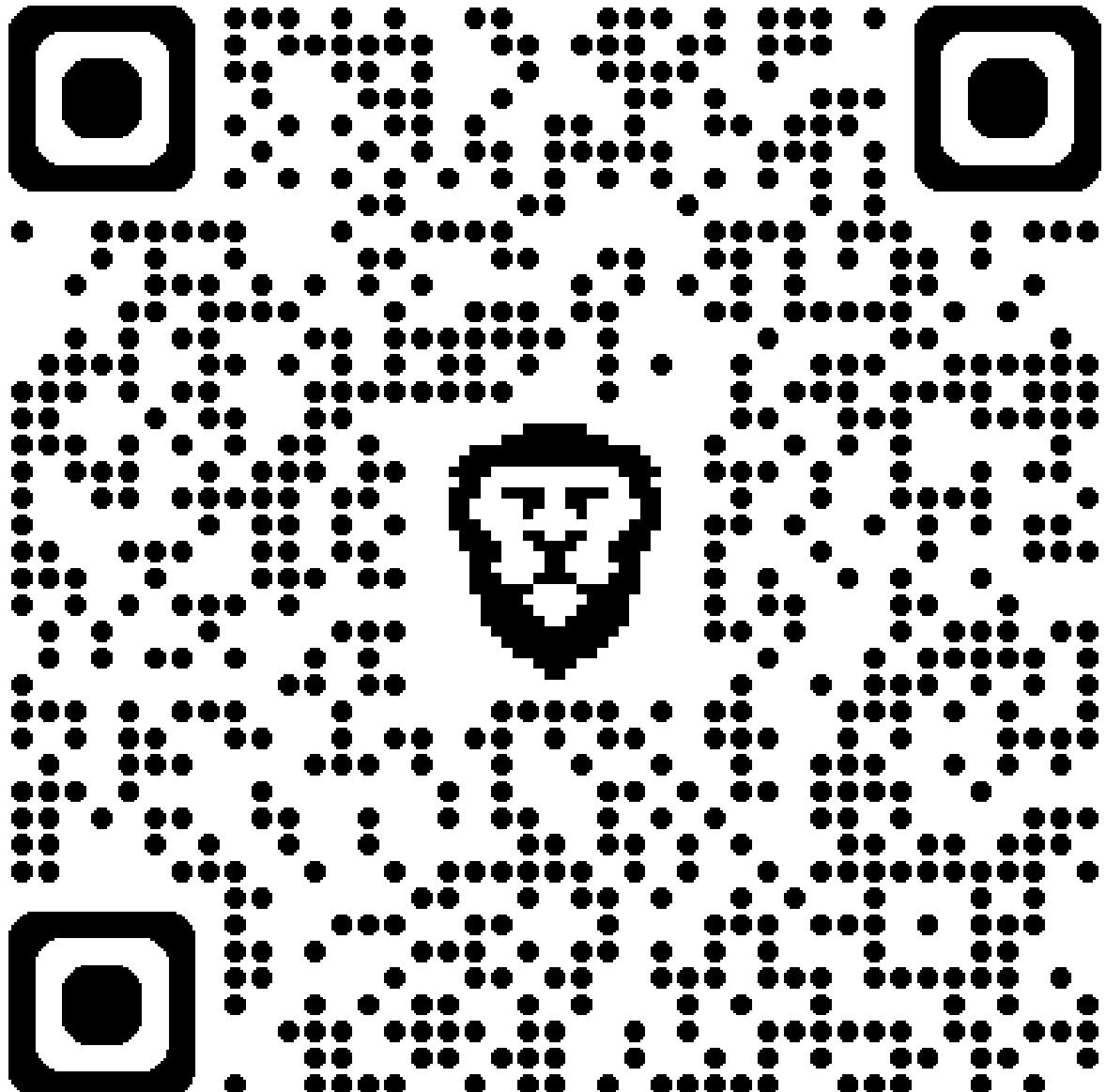
- Intervocalic voiced stops are lenited and often lost.
- Examples: *edan* ~ *eran*; *ederki* ~ *eerki*; *egarri* ~ *earri*.

Next week:

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All papers are freely accessible here: egurtzegi.github.io/publications