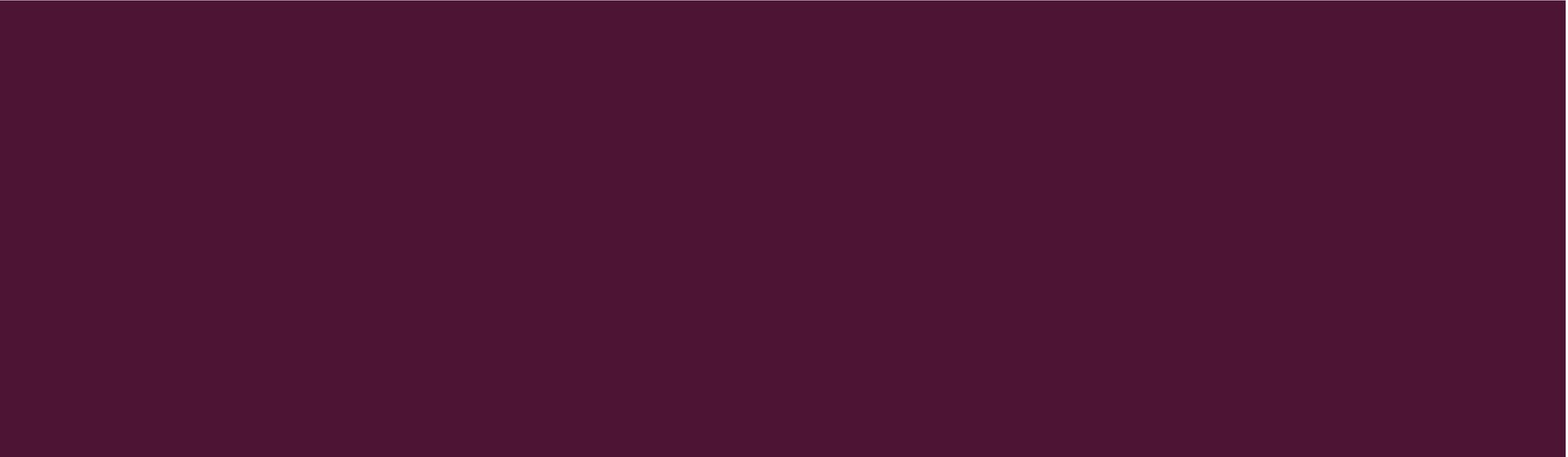




VARIATION IN BRITISH ENGLISH /t/: PRELIMINARY STUDY

MÍŠA HEJNÁ, LAUREN BRAMLEY, SADIE MAHER & SIOBHAN PATERSON



QUESTIONS

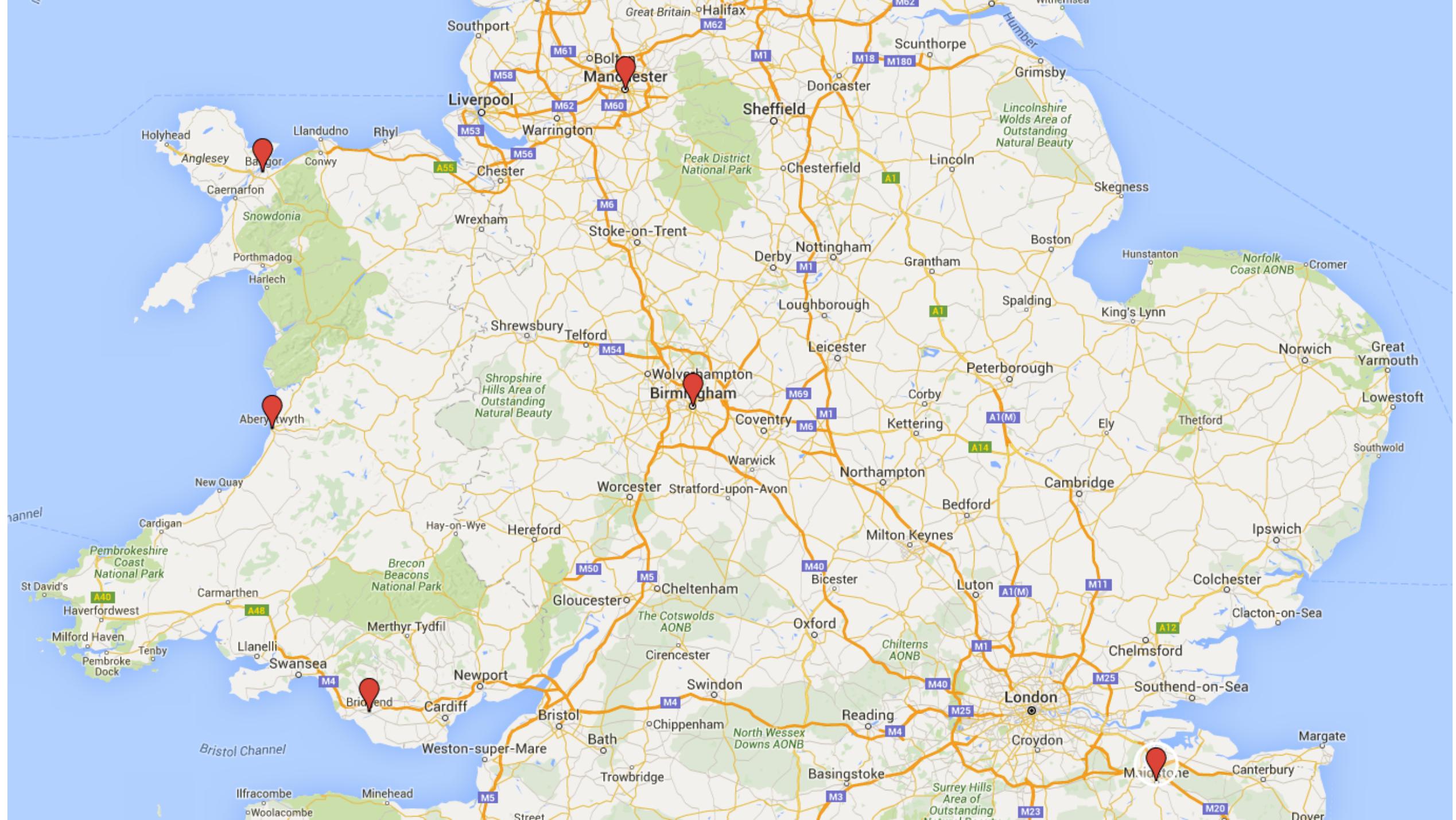
- What is the phonetic realisation of /t/ in British English?
 - post-aspiration, glottalling, glottalisation, affrication, spirantisation, pre-aspiration, tensing in particular

Why should we care?

- allophonic patterns often involving post-aspiration and glottalisation
 - but are there actually more allophonic patterns?
- How much consistency is there in the allophonic patterns cross-dialectally?
- Is the foot-initial position the most stable (the least variable)?
 - (Docherty 1995: 258; Smith 2002)

METHODOLOGY

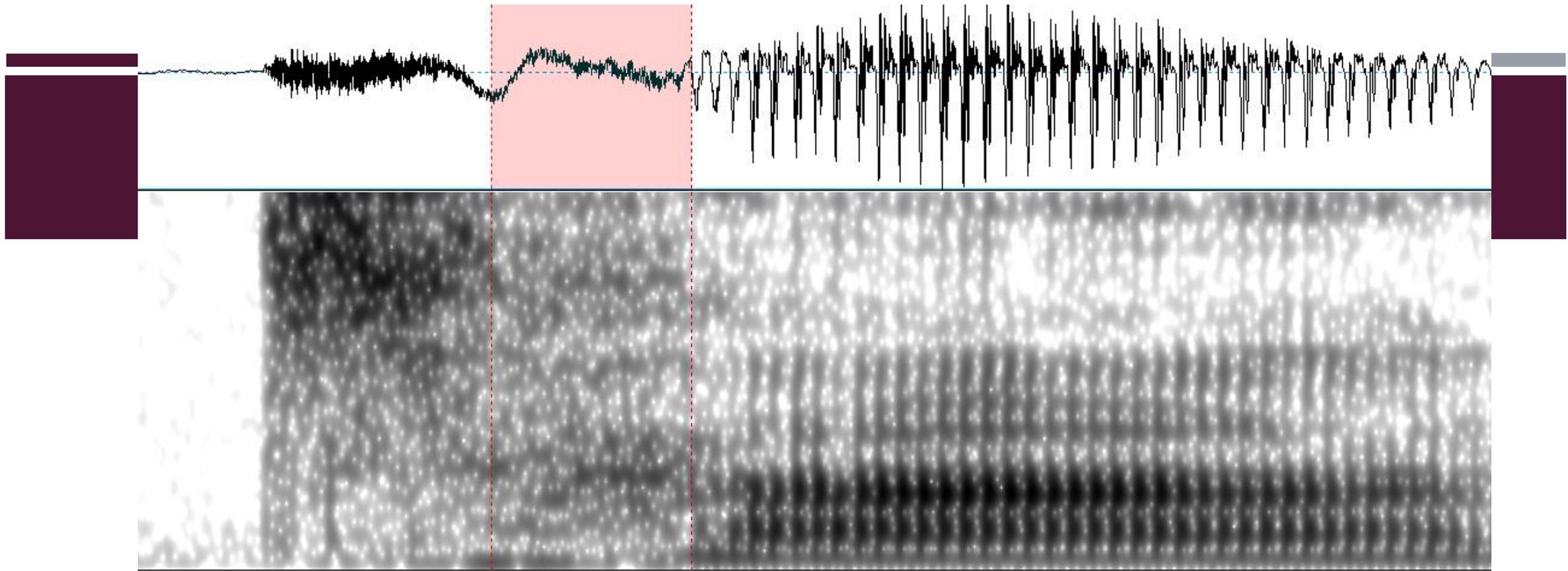
- 6 regions:
 - Bangor, Aberystwyth, Bridgend; Manchester, Birmingham, Kent
- 6 speakers:
 - all females
 - 20-22 years old
 - parents from the same area (excepting Bridgend)



METHODOLOGY

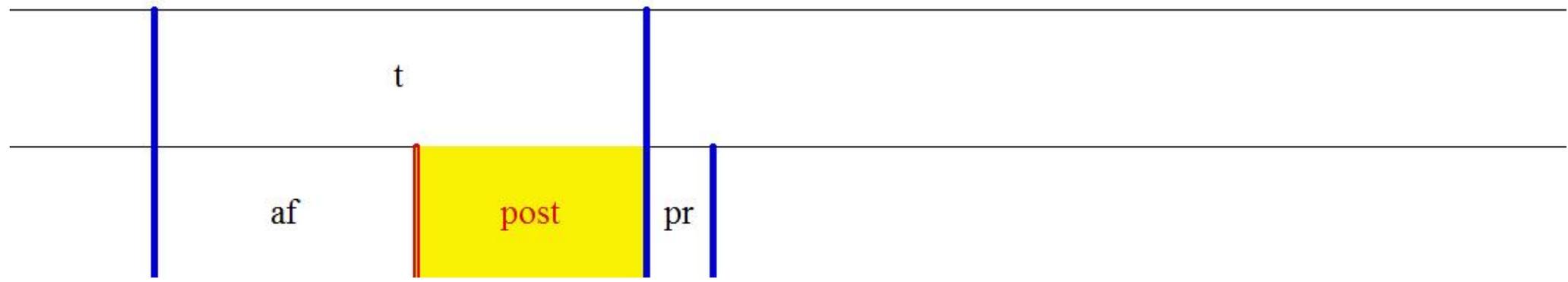
words in isolation

- word-initial /t/: *tat* 8 x 6 (48)
- word-medial /t/: *tatter* 13 x 6 (78)
- word-final /t/: *tat* 11 x 6 (66)
 - exploratory analysis (192 tokens in total)
- vowel = /a/ in the English accents & Bangor, and most often in the Welsh accents
- occasional differences in the vowels in the Welsh accents not confounds



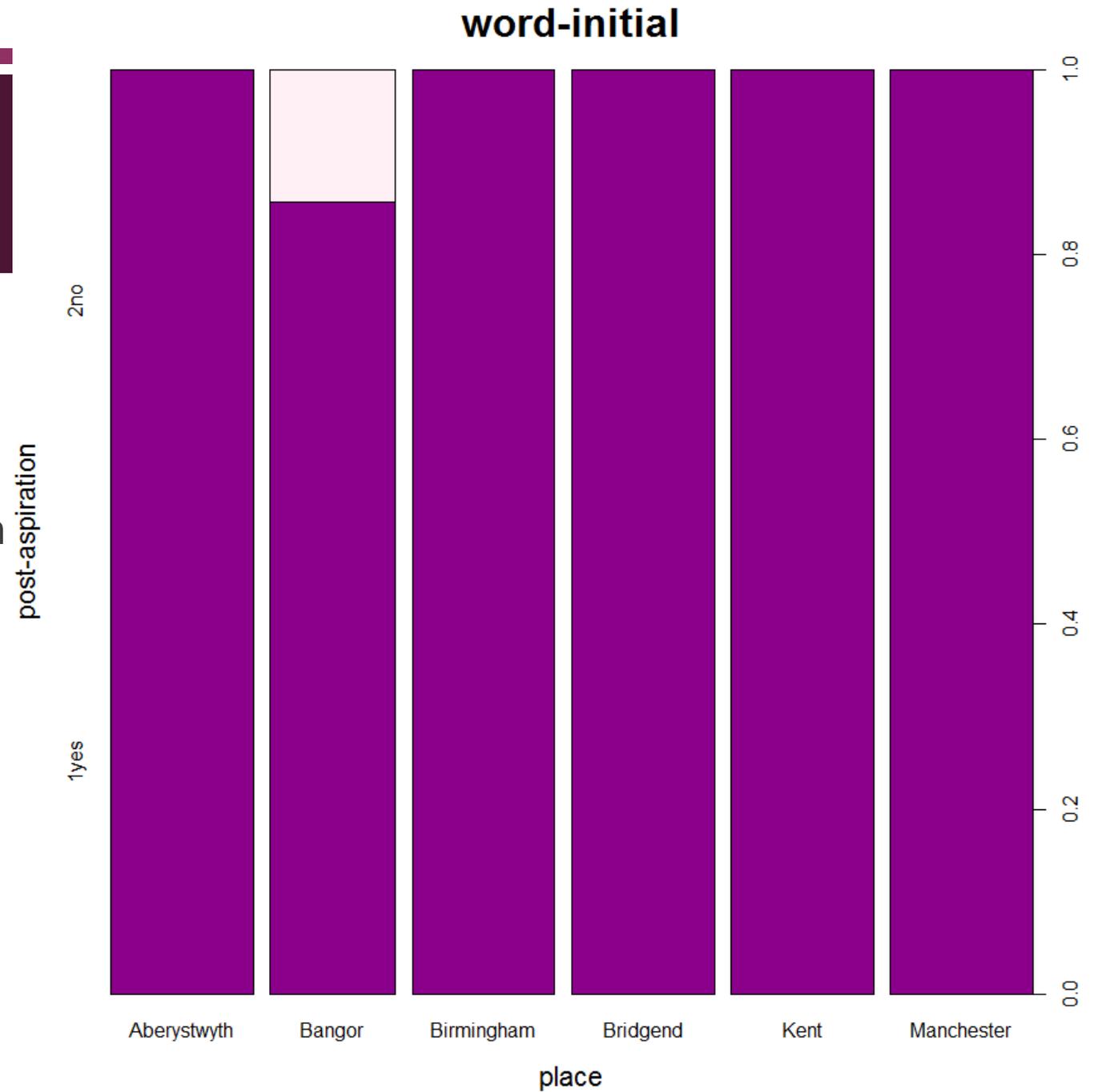
POST-ASPIRATION

tan



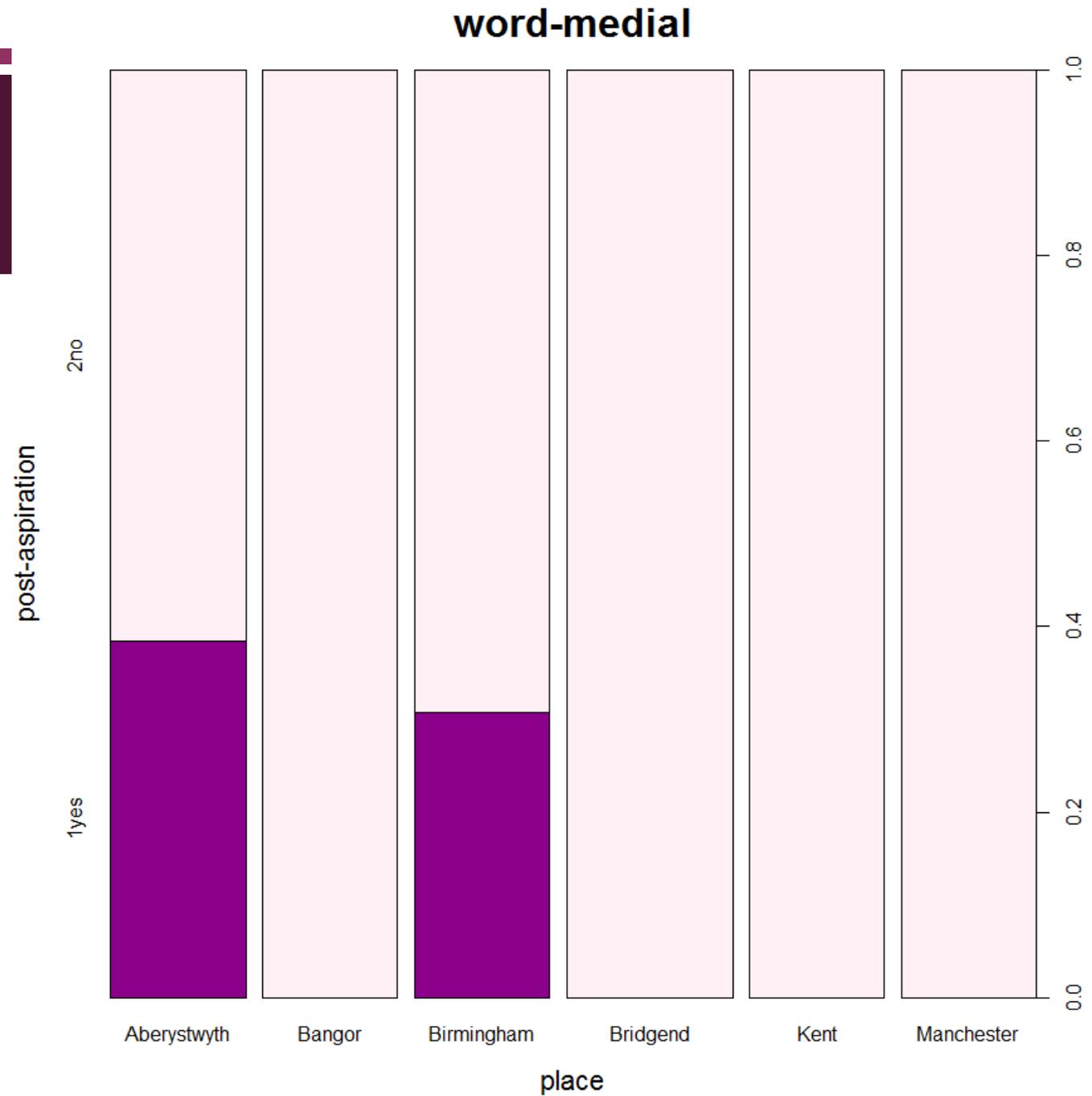
POST-ASPIRATION

- word-initially obligatory
- e.g. *tat*
- purple = presence of post-aspiration



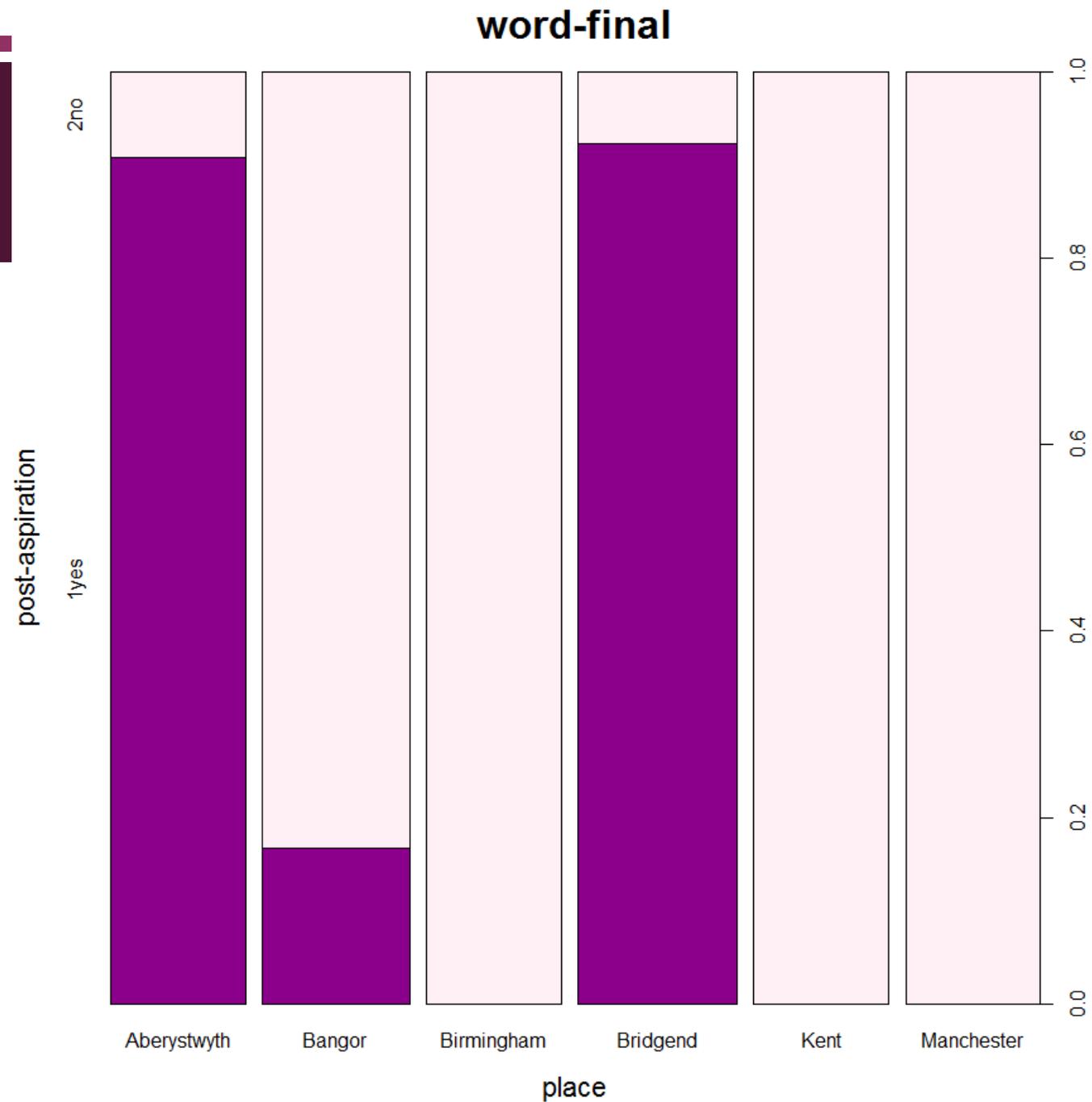
POST-ASPIRATION

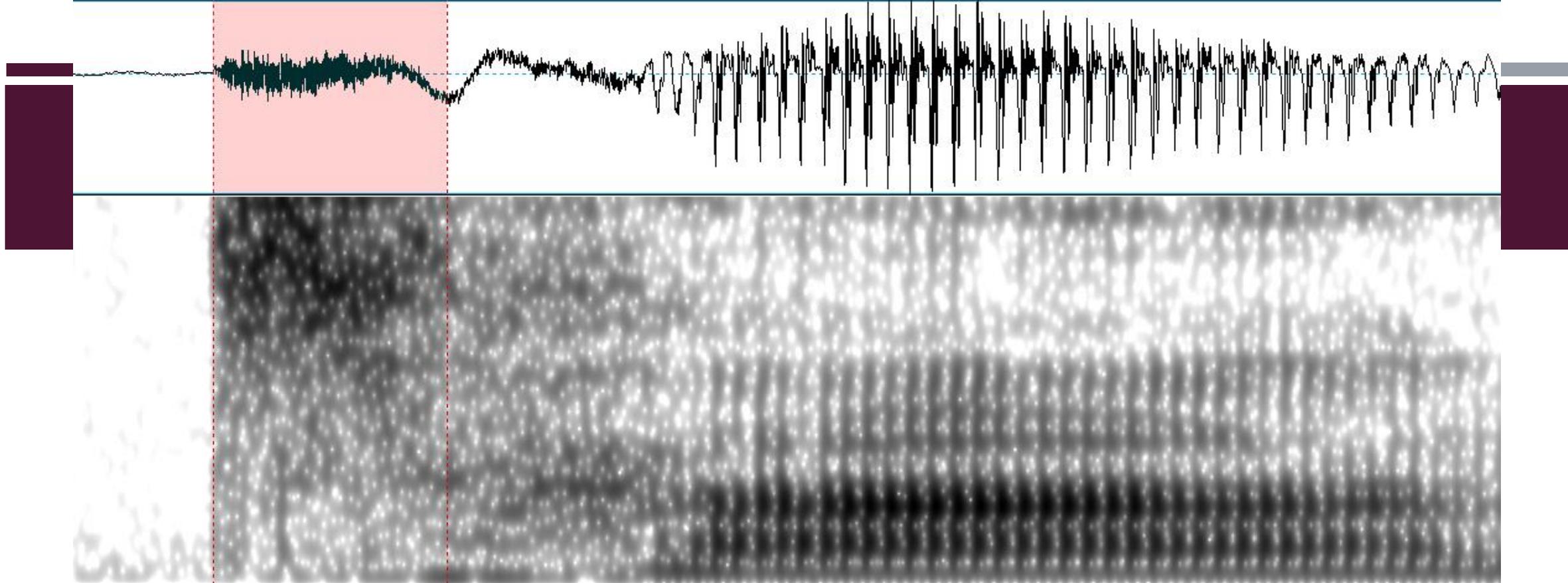
- word-medially obligatory absence for many
- e.g. *tatter*
- purple = presence of post-aspiration



POST-ASPIRATION

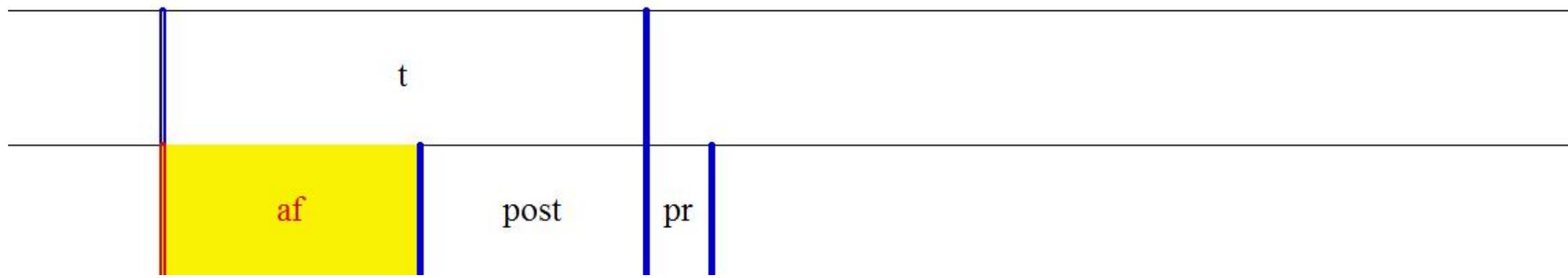
- word-finally only in Welsh English
- e.g. *tat*
- purple = presence of post-aspiration





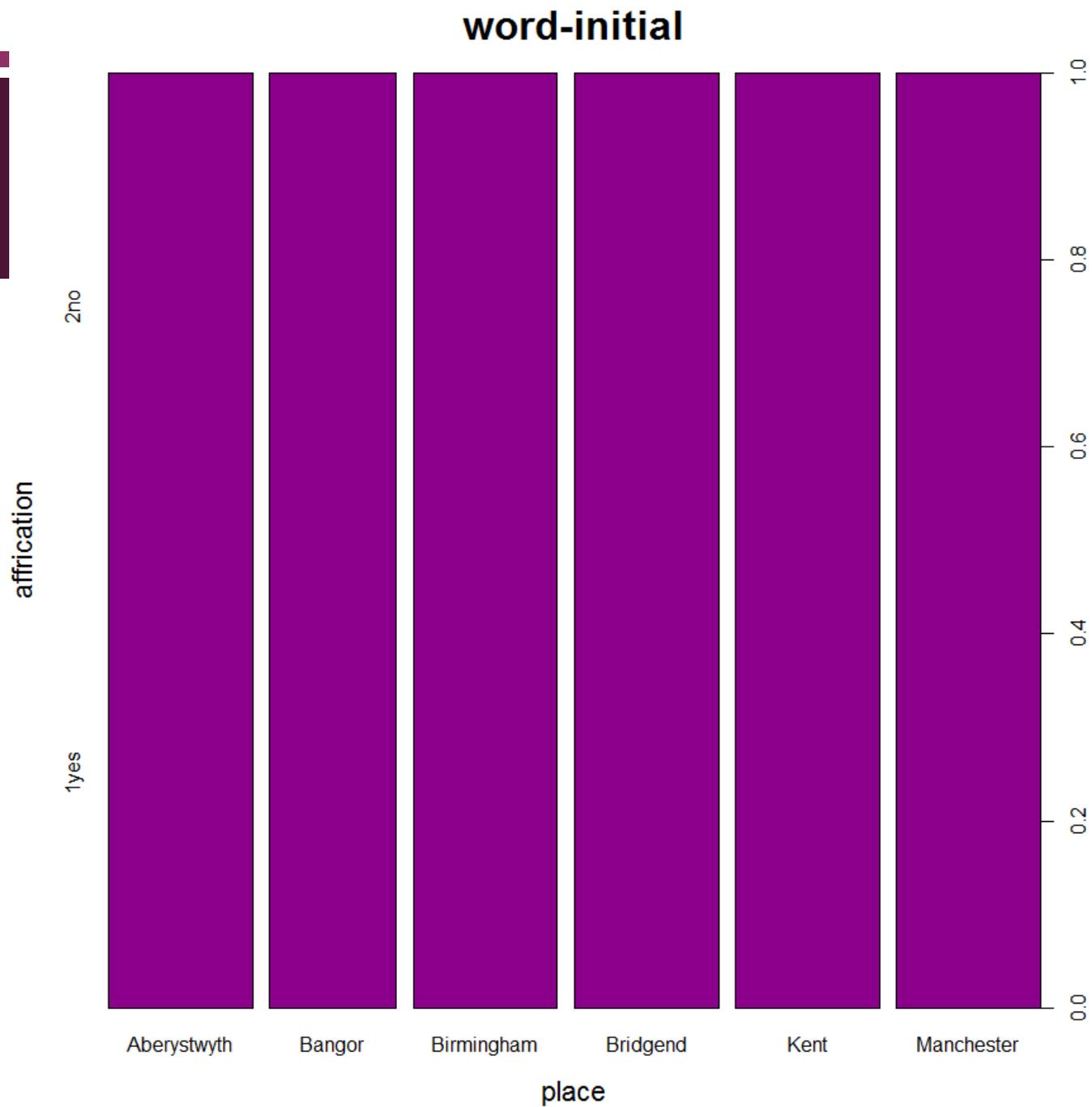
AFFRICATION

tan



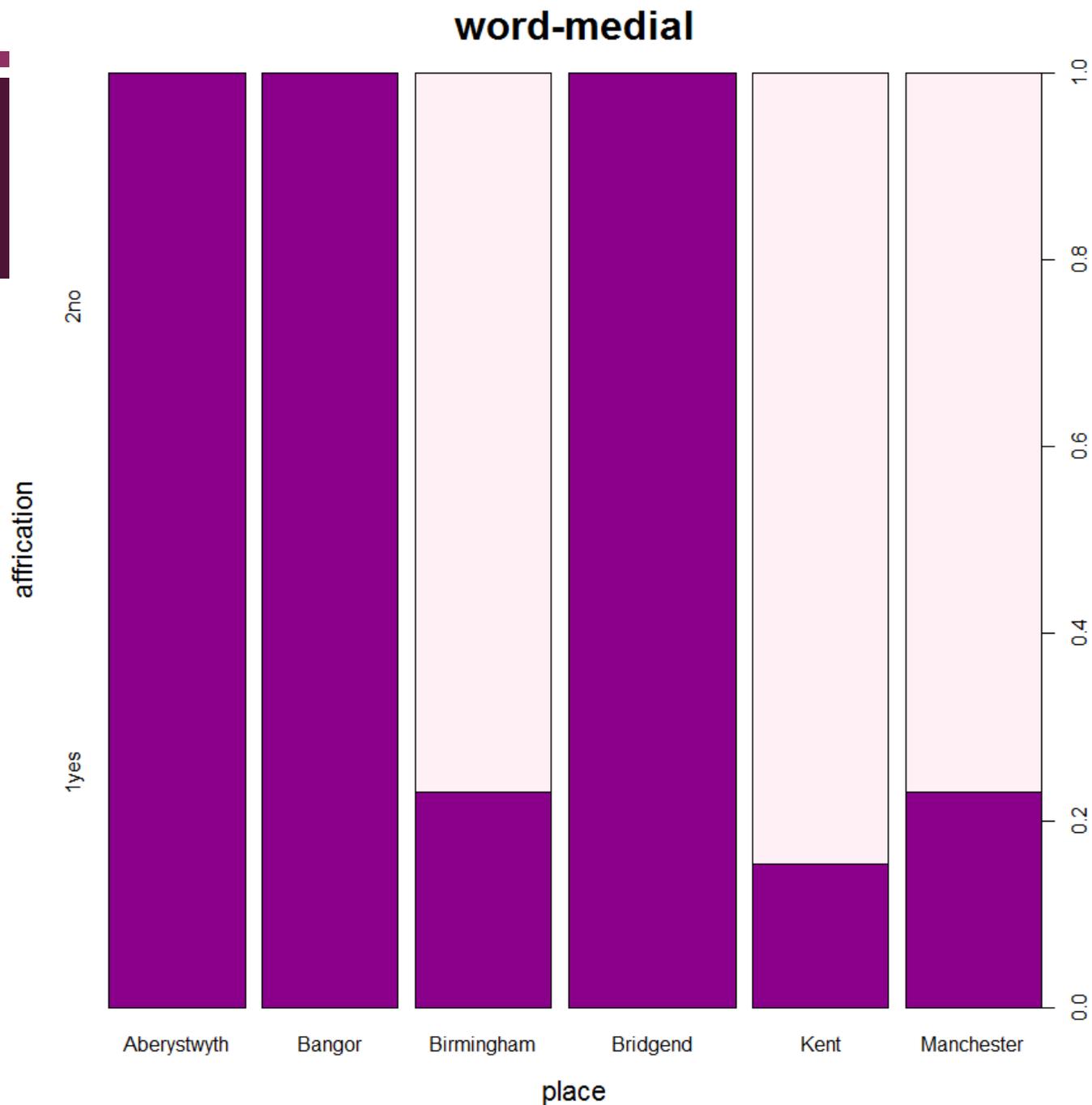
AFFRICATION

- word-initially obligatory
- e.g. *tat*
- purple = presence of affrication



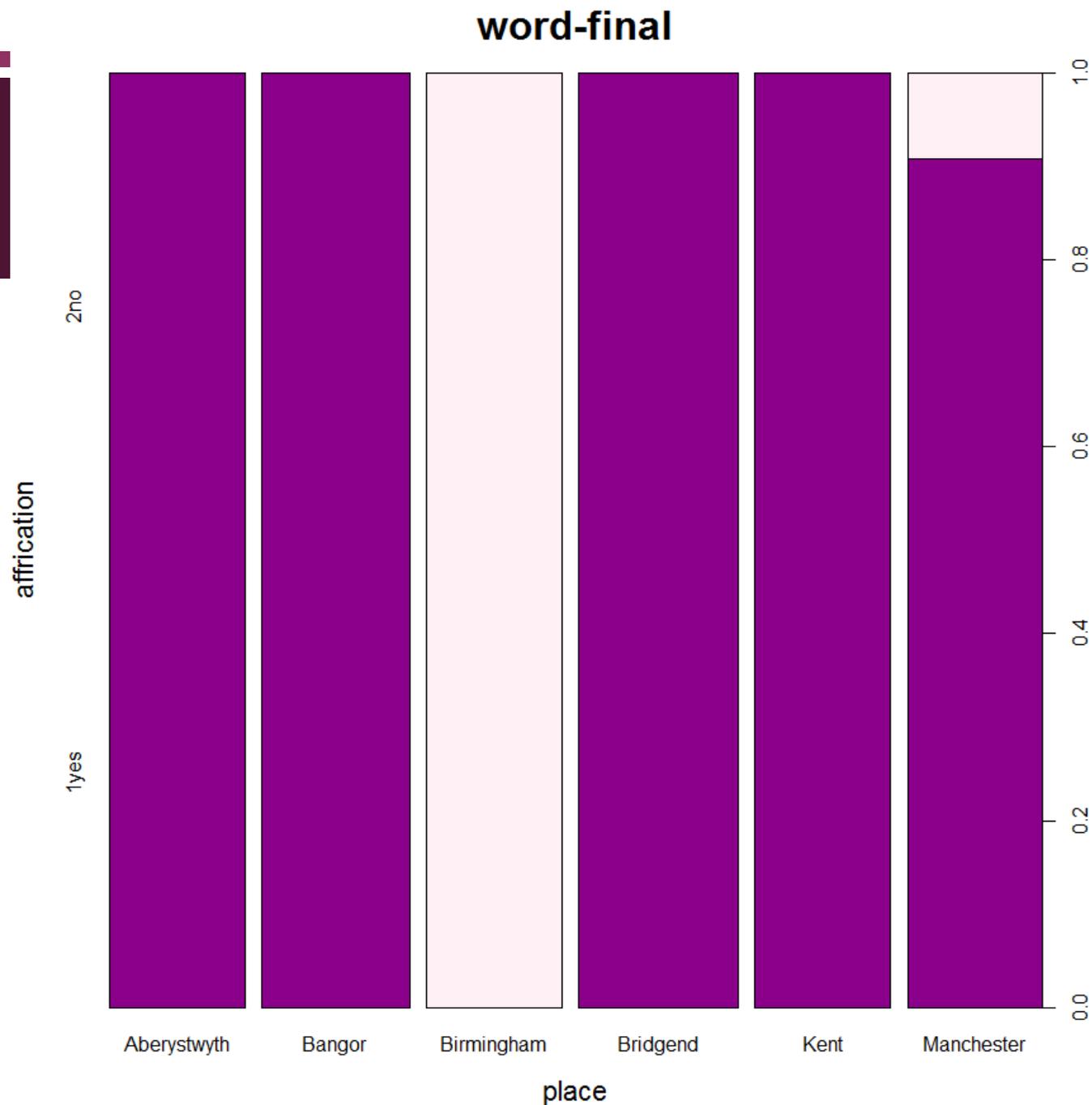
AFFRICATION

- word-medially obligatory in Welsh English
- e.g. *tatter*
- purple = presence of affrication

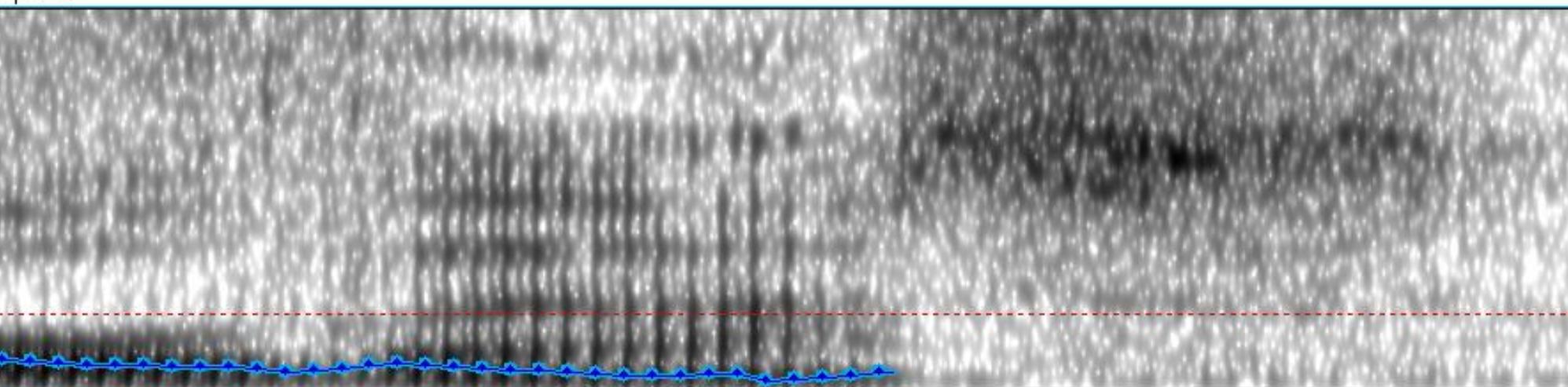
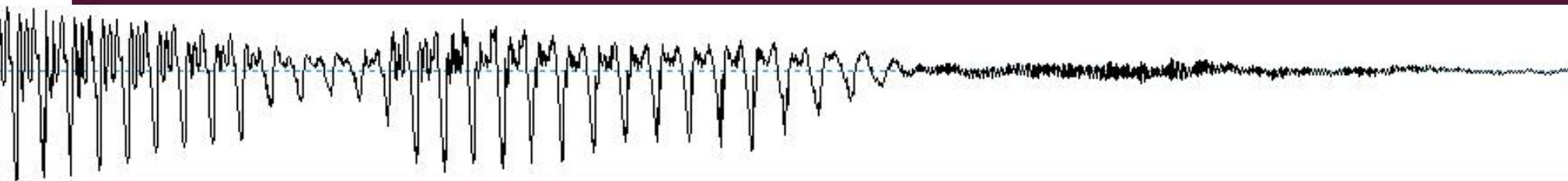


AFFRICATION

- word-finally obligatory in Welsh English
- e.g. *tat*
- also in Kent
- purple = presence of affrication



SPIRANTISATION



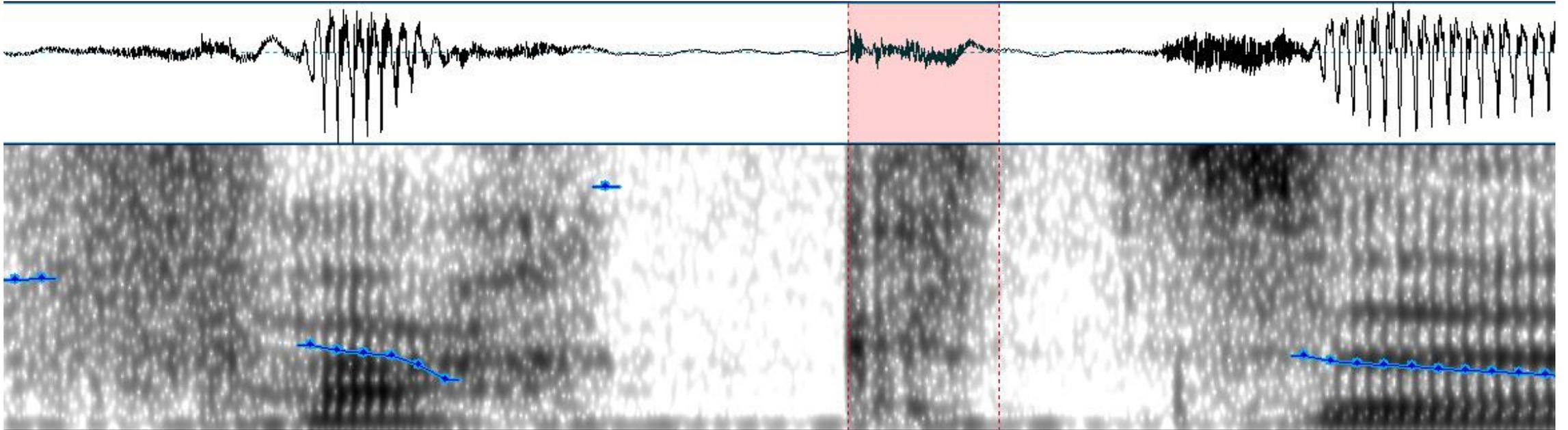
before that

th

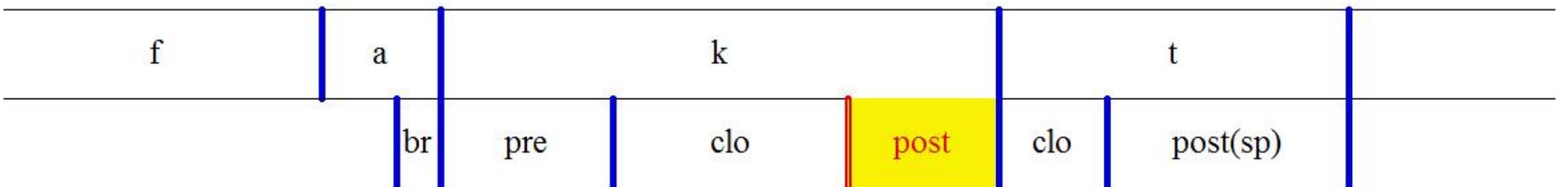
a

t

SPIRANTISATION

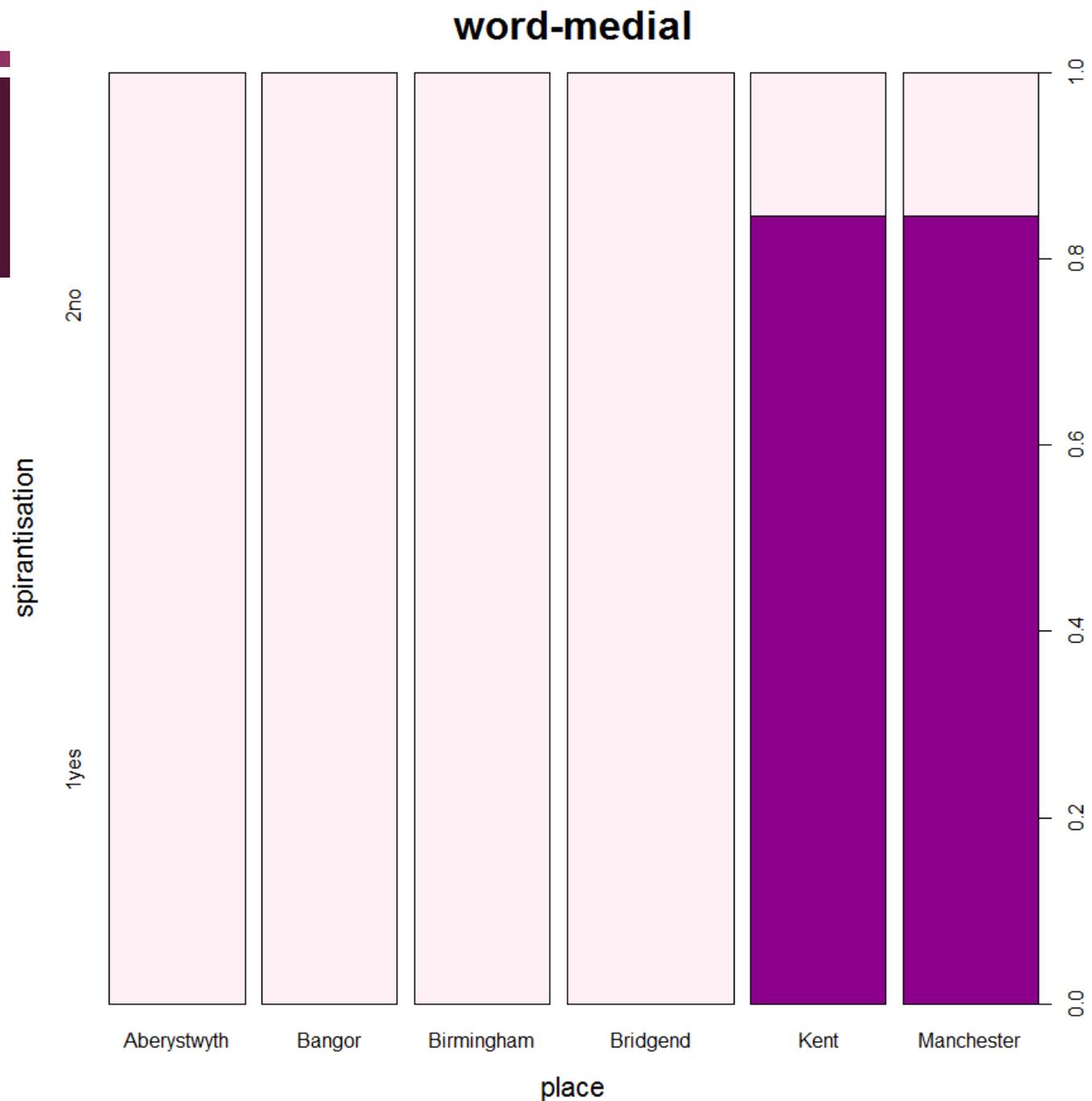


factor



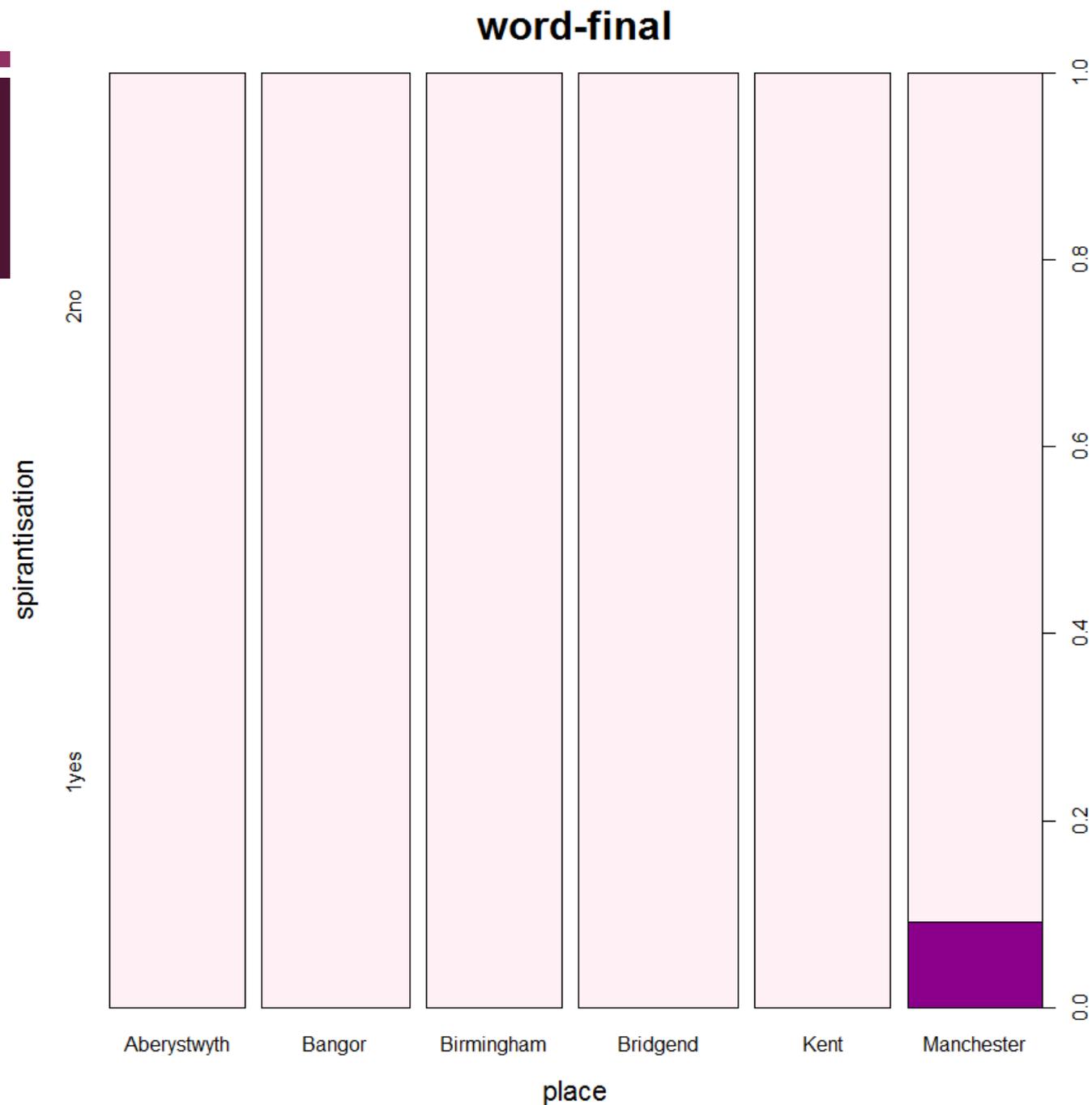
SPIRANTISATION

- none initially
- word-medially only Kent & Manchester
- e.g. *tatter*
- purple = presence of spirantisation

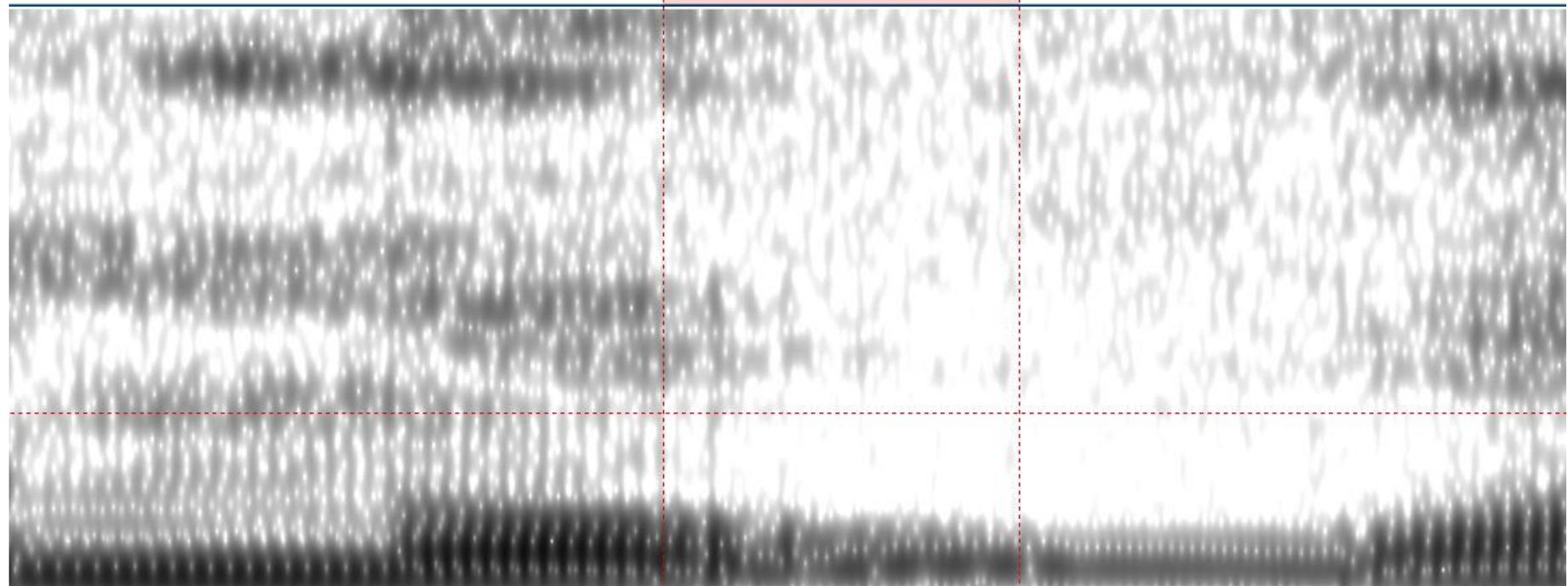
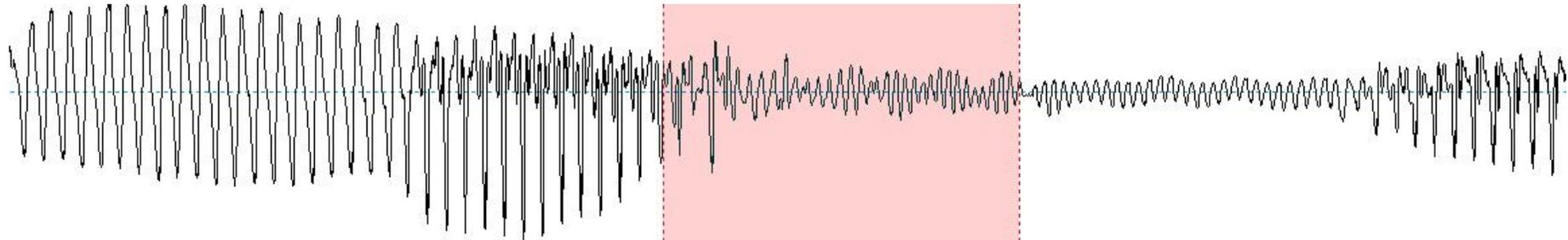


SPIRANTISATION

- word-finally only in Manchester
- e.g. *tat*
- purple = presence of spirantisation

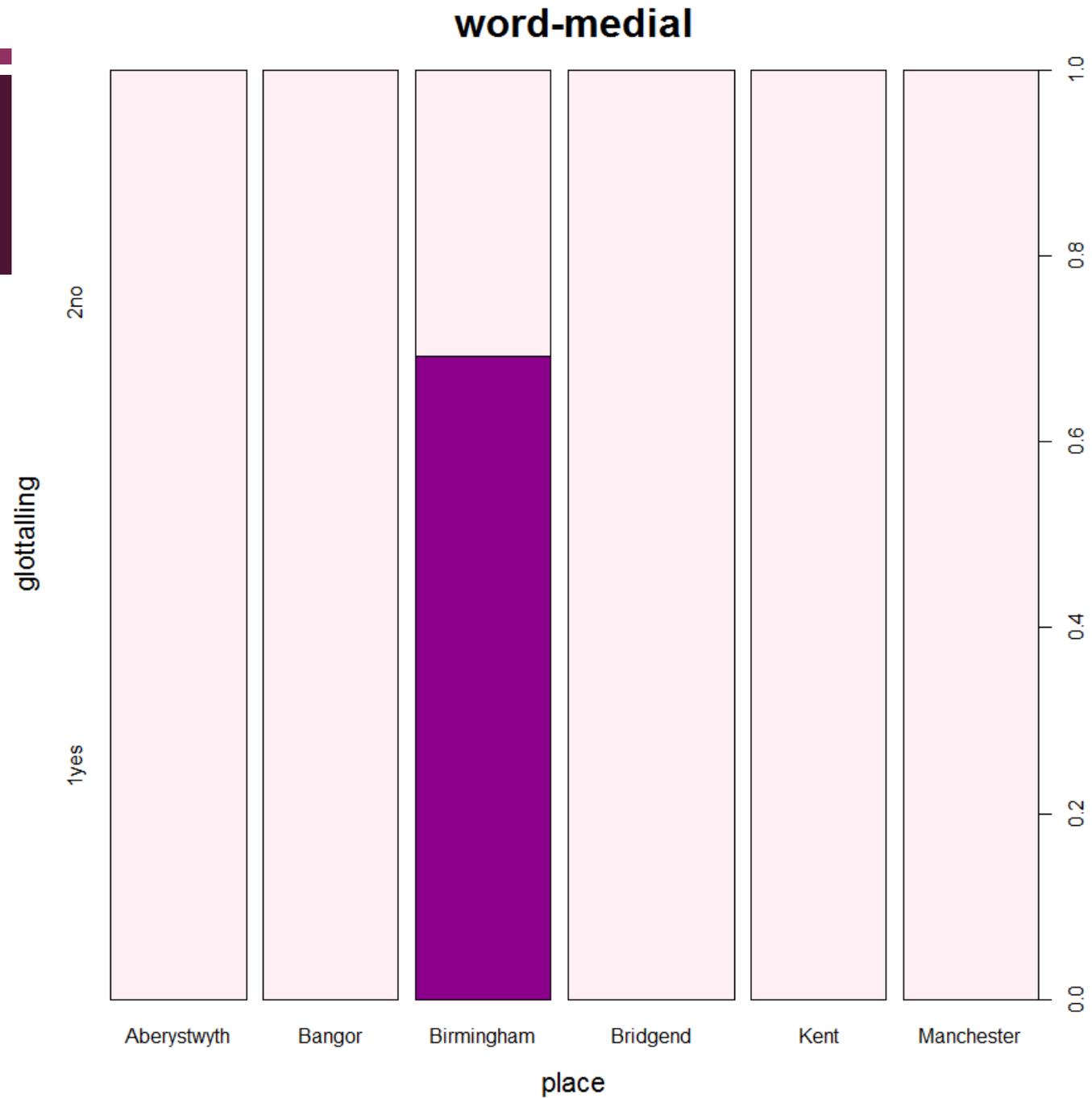


GLOTTAL REPLACEMENT / GLOTTALLING



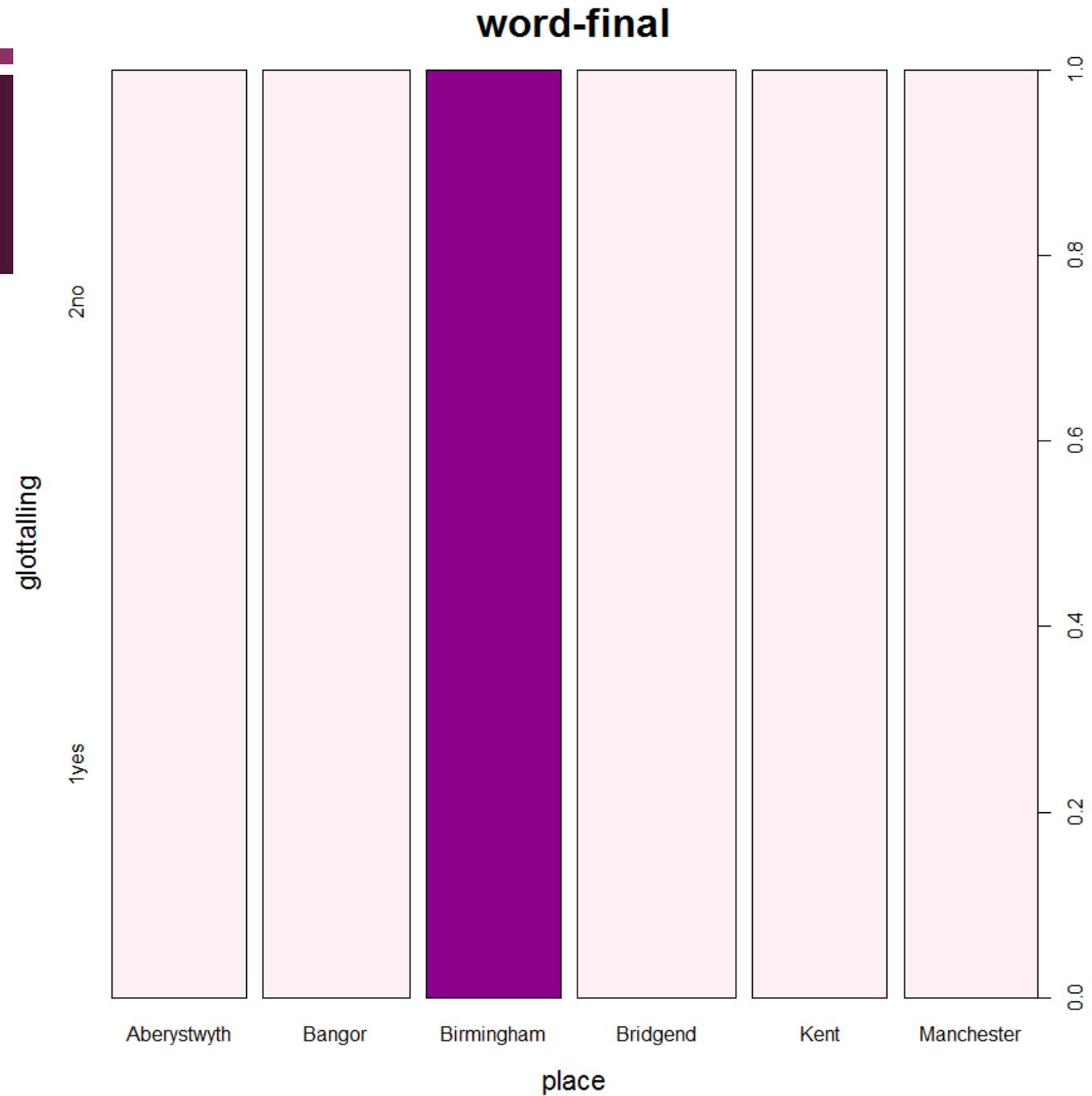
GLOTTAL REPLACEMENT

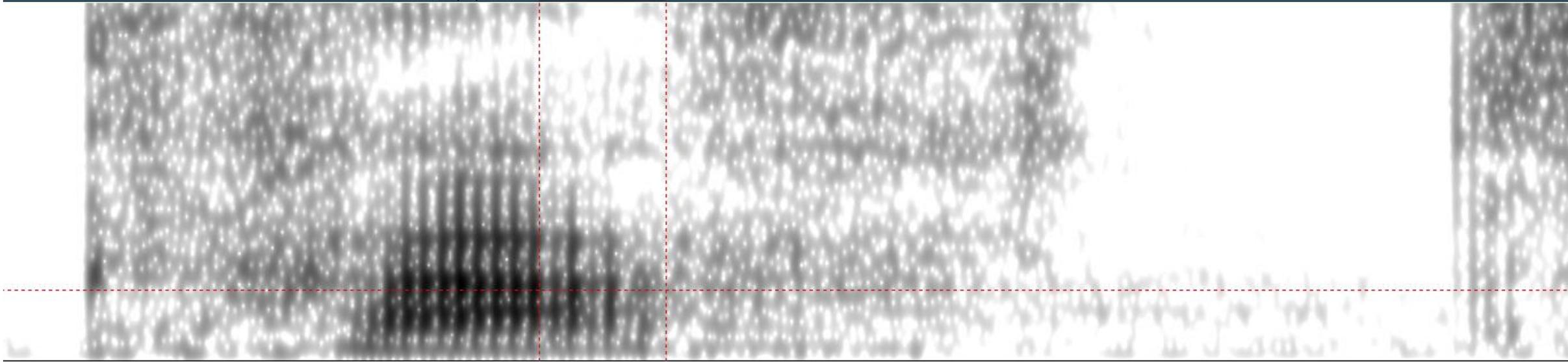
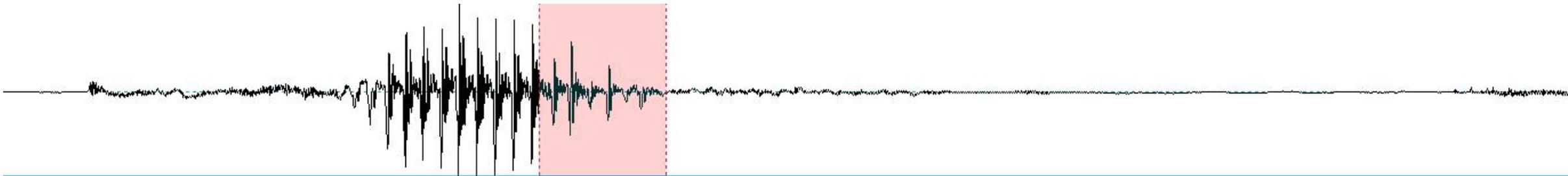
- none initially
- word-medially only in Birmingham
- e.g. *tatter*
- purple = presence of glottalling



GLOTTAL REPLACEMENT

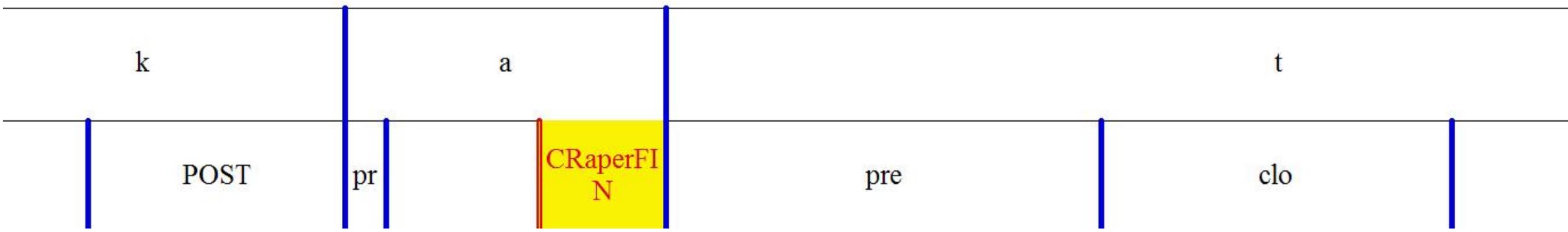
- word-finally only in Birmingham
- obligatory
- e.g. *tat*
- purple = presence of glottalling





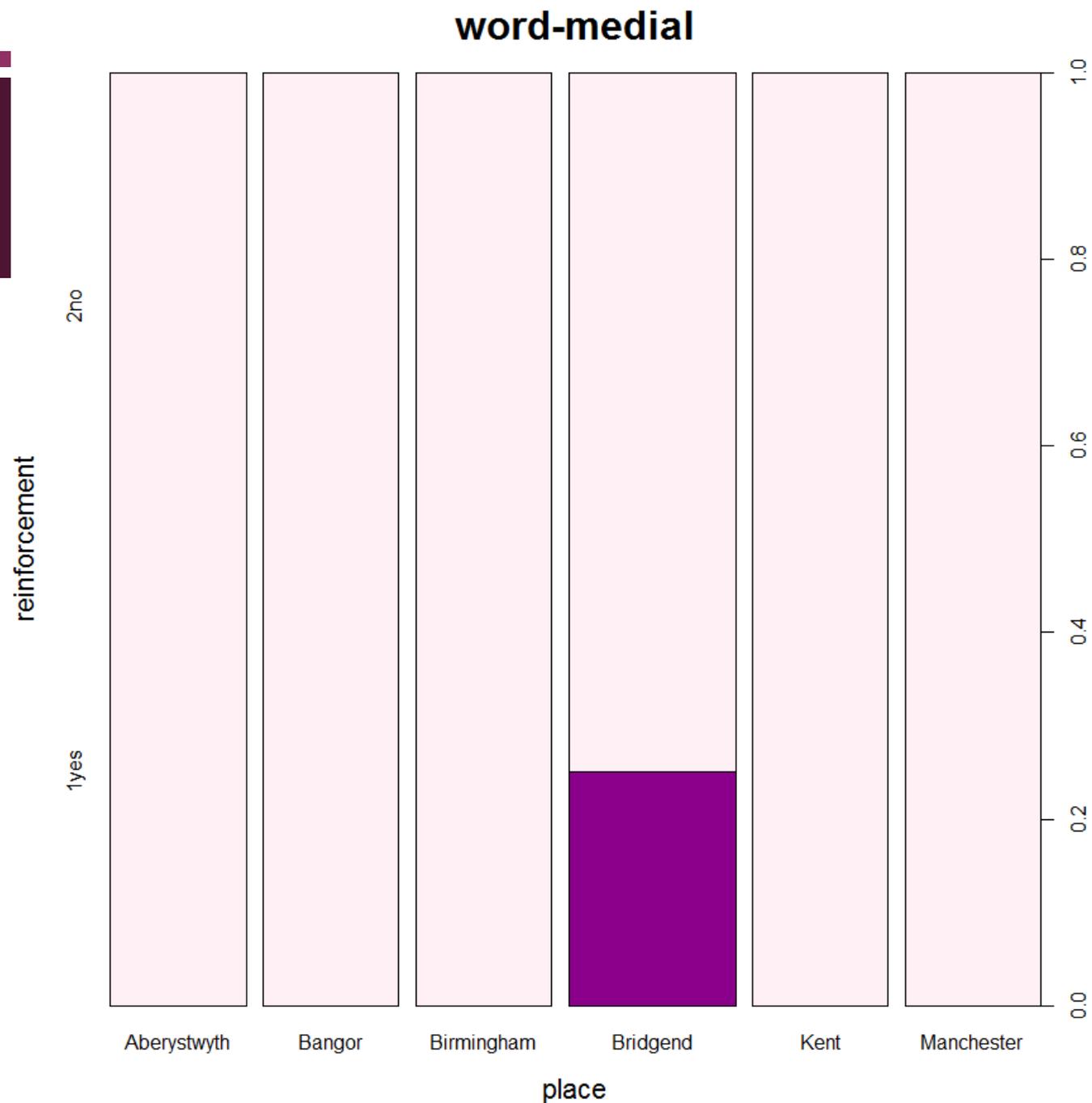
GLOTTAL
REINFORCEMENT

cat



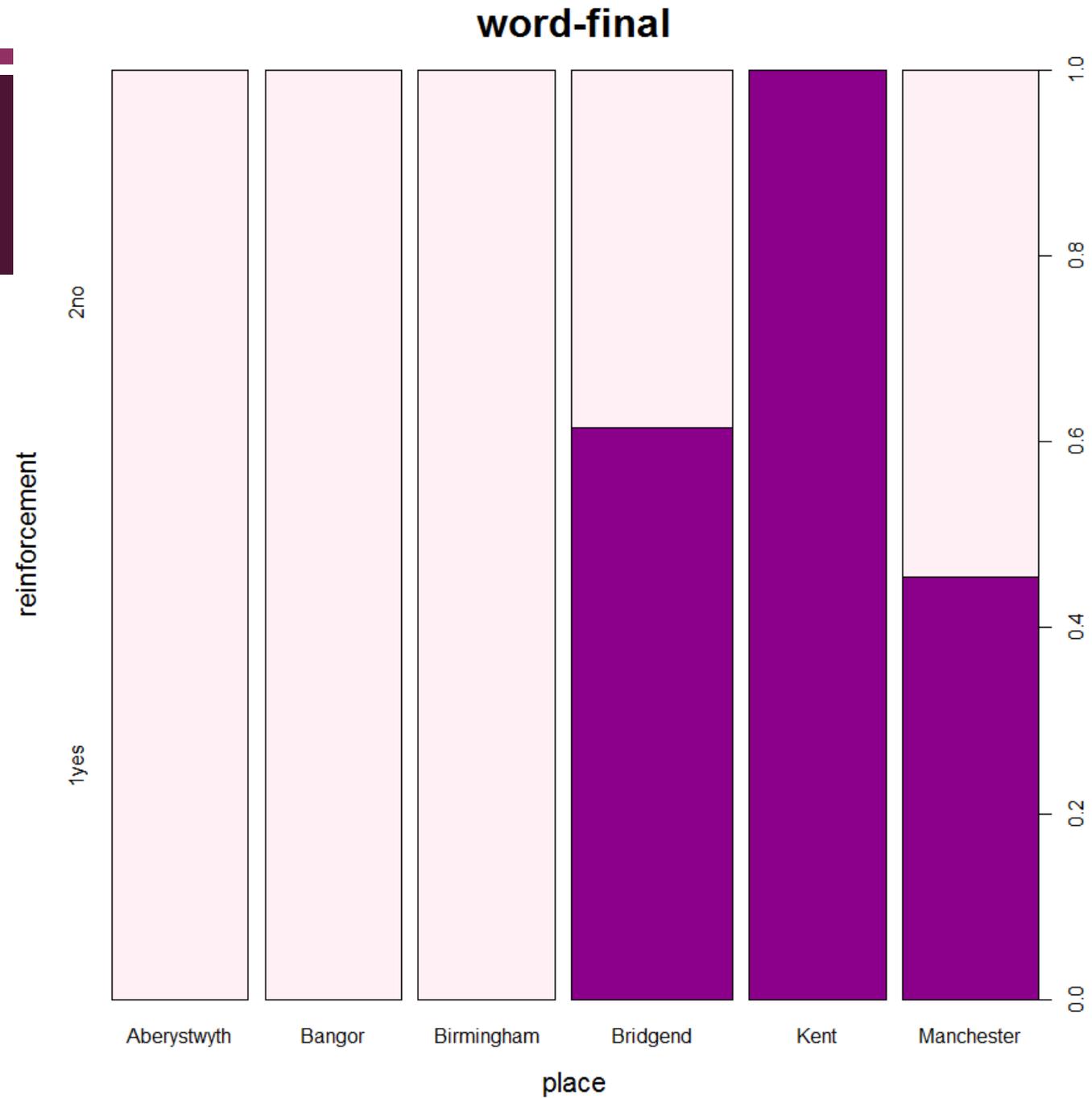
GLOTTAL REINFORCEMENT

- none initially (because no sound!)
- medially only in Bridgend
- in the preceding sound
- e.g. *tatter*
- purple = presence of reinforcement



GLOTTAL REINFORCEMENT

- finally obligatory in Kent
- e.g. *tat*
- purple = presence of reinforcement

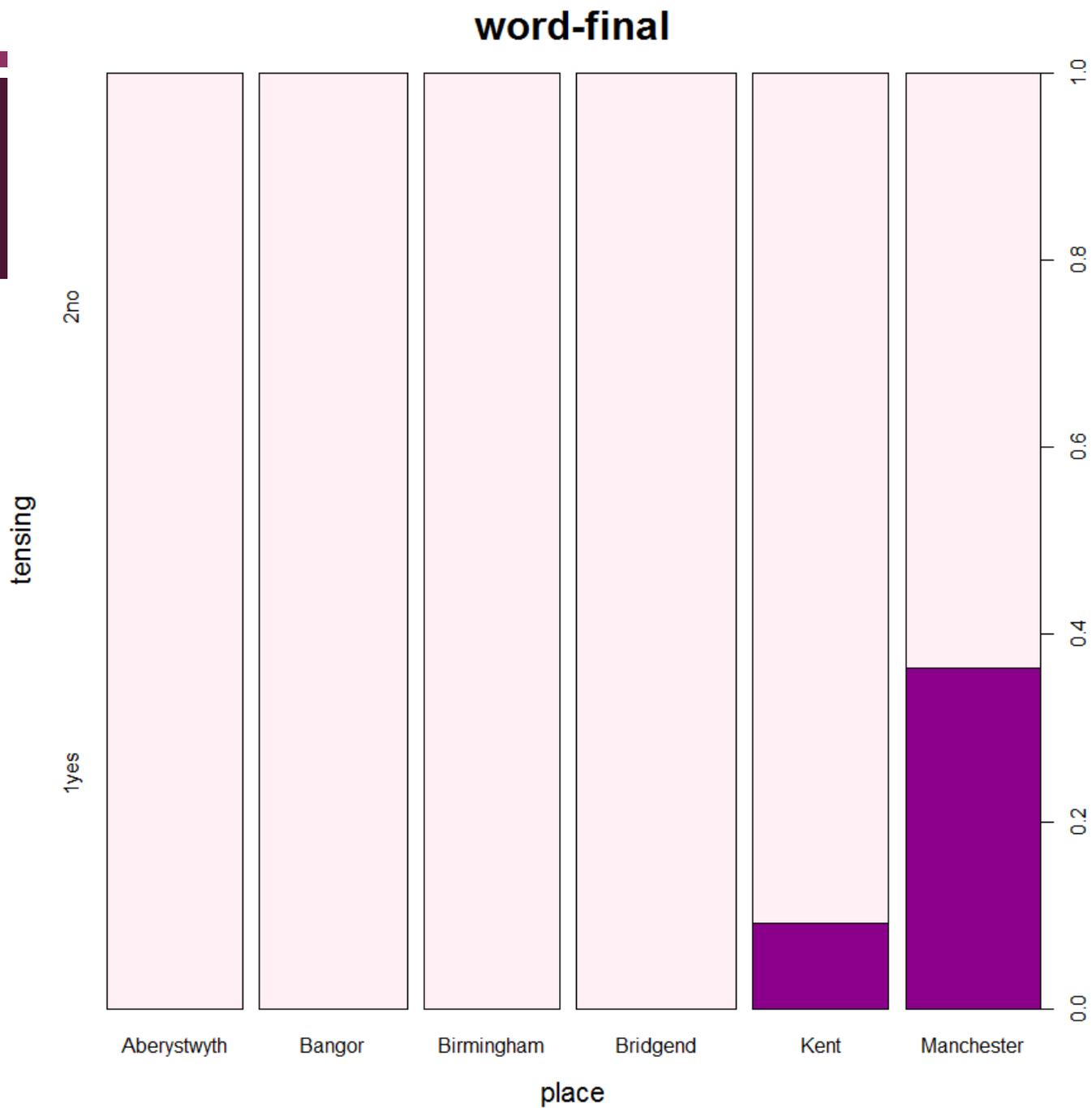


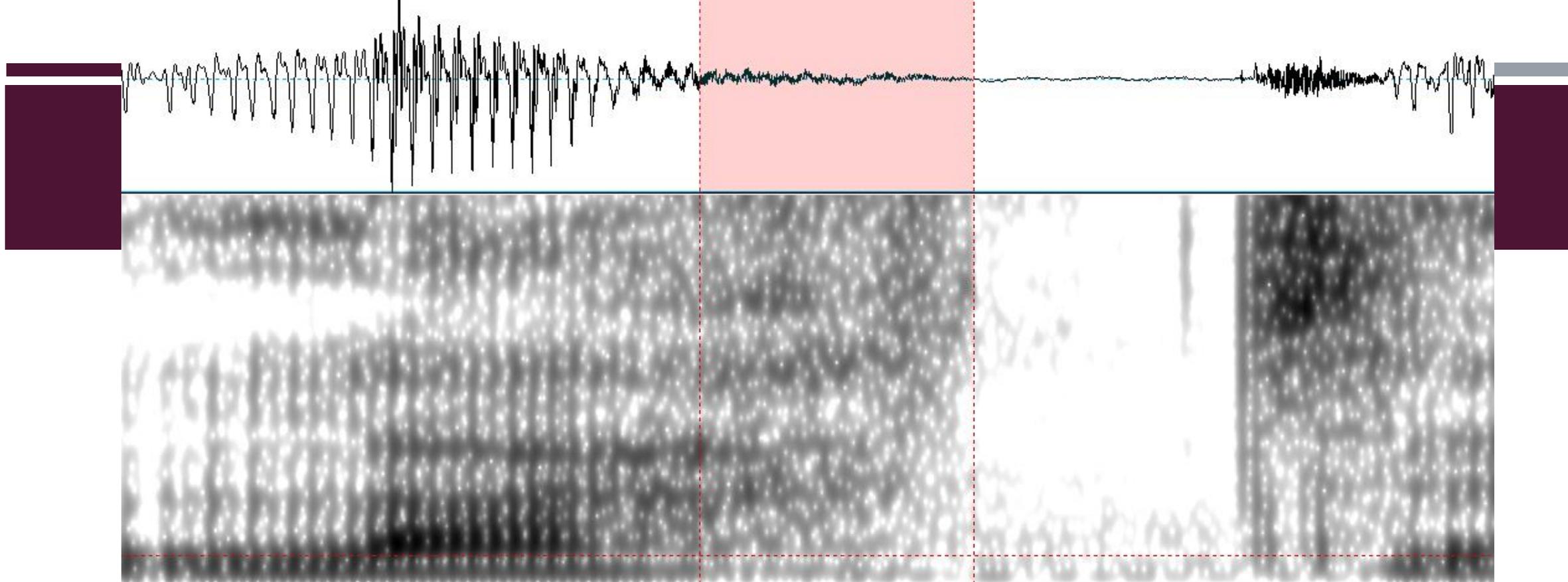
TENSING

- increase of energy in the higher frequencies in the spectrogram

TENSING

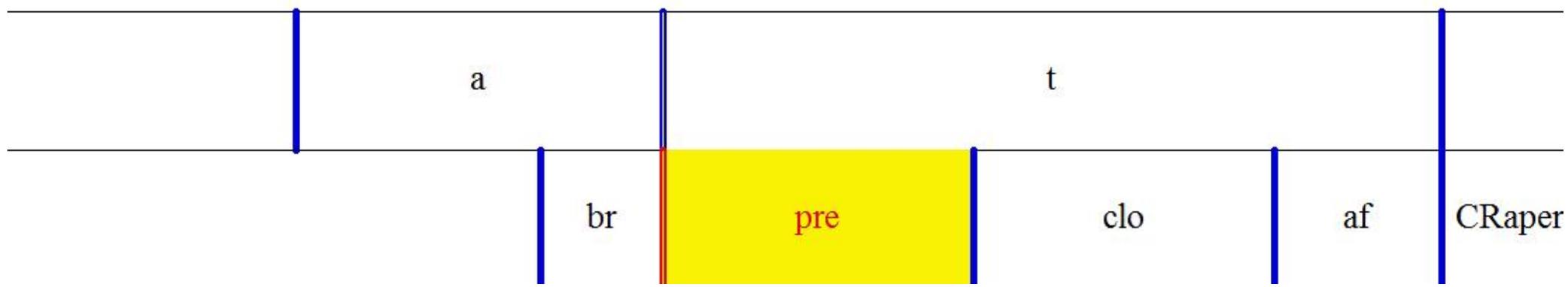
- only finally
- Manchester & Kent
- e.g. *tat*
- purple = presence of tensing





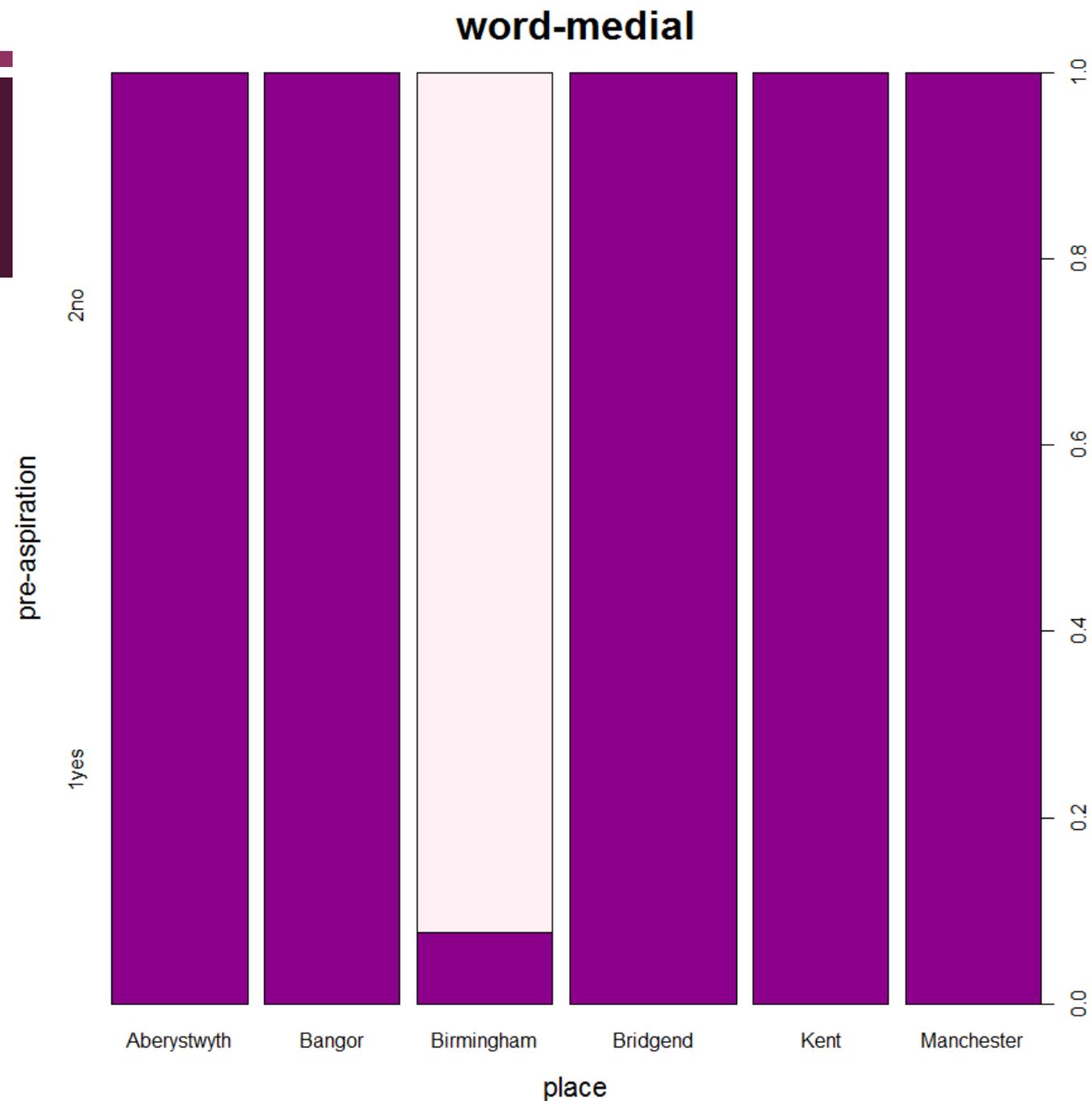
PRE-ASPIRATION

latter



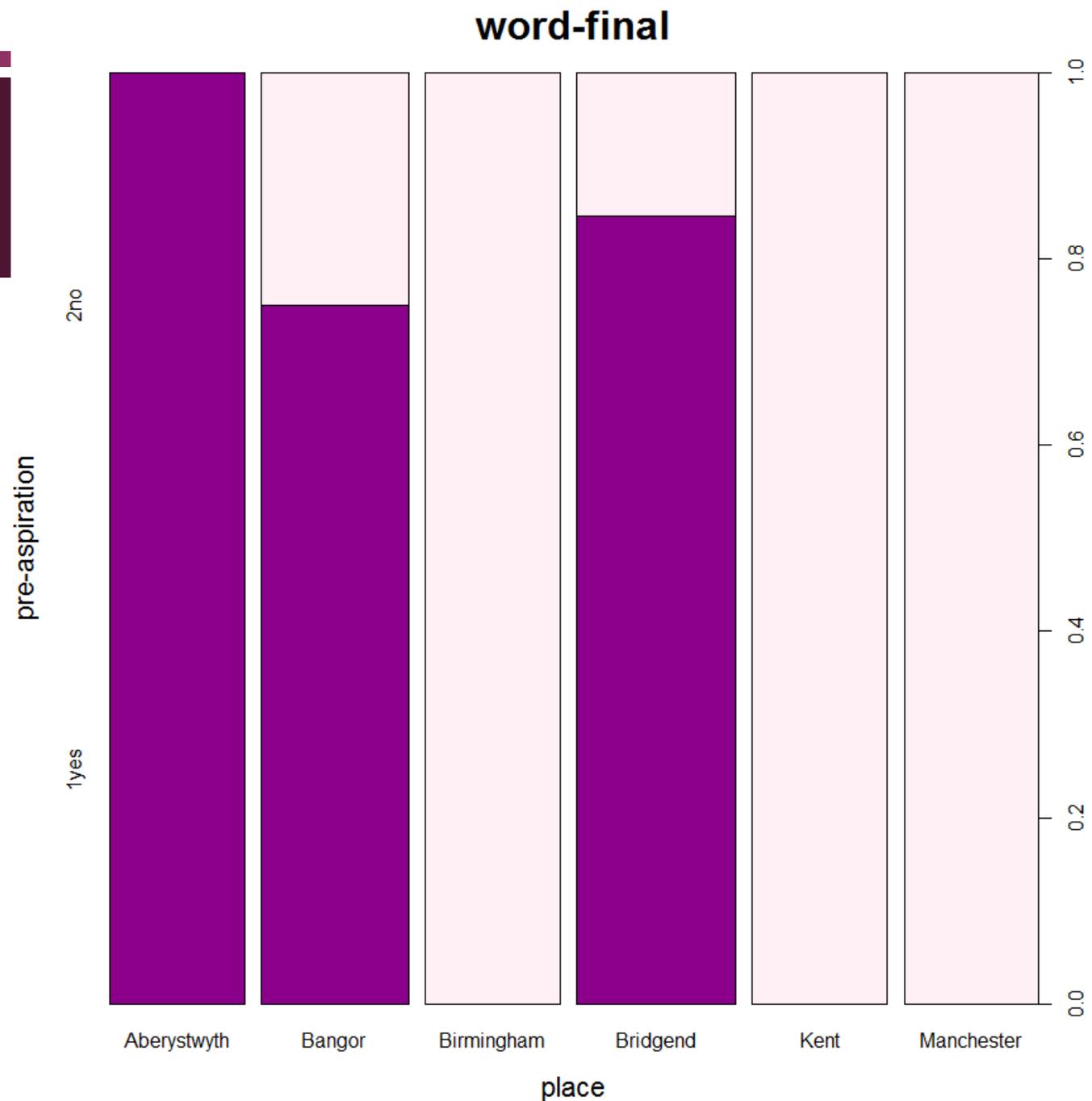
PRE-ASPIRATION

- none initially (no sound!)
- obligatory medially
- e.g. *tatter*
- not obligatory in Birmingham
- purple = presence of tensing



PRE-ASPIRATION

- obligatory finally in Aber
- e.g. *tat*
- present only in Welsh English
- purple = presence of tensing



HOW DO THESE FEATURES FIT IN?

tat

Bangor
[t^{s(h)}a^(h)t^{s(h)}]

Aberystwyth

[t^{sh}a^ht^{s(h)}]

Bridgend

[t^{sh}a^{(h)(?)}t^{s(h)}]

tatter

[t^{s(h)}a^ht^sə]

[t^{sh}a^ht^{s(h)}ə]

[t^{sh}a^{(?)h}t^sə]

tat

Manchester
[t^{sh}a[?]t^(s)]
(^)

Birmingham

[t^{sh}a[?]]

Kent

[t^{sh}a[?]t^s]

tatter

[t^{sh}a^ht^(s)ə]
(^)

a. [t^{sh}a[?]ə]

[t^{sh}a^ht^(s)ə]
(^)

b. [t^{sh}a^(h)t^(sh)ə]

ALLOPHONIC PATTERNS

- more allophonic patterns
- accent-specific to some extent
- Welsh accents predominantly lax laryngeal structures
- Kent & Manchester mixture (tense foot-finally, lax foot-medially and -initially)
- Birmingham (tense foot-finally and -medially, lax foot-initially)

ALLOPHONIC PATTERNS

	Bangor	Aberystwyth	Bridgend
<i>tat</i>	[t ^s at ^s]	[t ^{sh} a ^h t ^s]	[t ^{sh} at ^s]
<i>tatter</i>	[t ^s a ^h t ^s ə]	[t ^{sh} a ^h t ^s ə]	[t ^{sh} a ^h t ^s ə]
	Manchester	Birmingham	Kent
<i>tat</i>	[t ^{sh} a ^ʔ t]	[t ^{sh} a ^ʔ]	[t ^{sh} a ^ʔ t ^s]
<i>tatter</i>	[t ^{sh} a ^h tə]	a. [t ^{sh} a ^ʔ ə] b. [t ^{sh} atə]	[t ^{sh} a ^h tə]

IS THE FOOT-INITIAL POSITION THE MOST STABLE (THE LEAST VARIABLE)?

- yes, both within and across speakers
- all foot-initial /t/ obligatorily
 - affricated
 - and post-aspirated as well

DEGREE OF VARIABILITY

- $\text{foot-initial} < \text{foot-medial} < \text{foot-final}$
- when all evidence is taken into consideration

POST- AND PRE-RELEASE GESTURE?

- Manchester English (Hejná & Scanlon 2015)
 - Could the newly reported allophony be explained by relationship between pre- and post-release gesture?
 - glottalised /t/ would be unaspirated
 - pre-aspirated /t/ would be post-aspirated and/or affricated

- NO

VOT (VOICE ONSET TIME)

- increases as the place of articulation becomes more anterior
- many /t/'s are not post-aspirated but affricated
- affrication (oral & glottal) ≠ aspiration (glottal)
- /t/ often reported to have longest VOT and most pre-aspiration
 - e.g. Morris 2010, Hejná 2015

FURTHER RESEARCH

- geographical isoglosses for lax vs tense laryngeal structures?
- global phonation affecting (supposedly) allophonic patterns?
- global phonation feeding into allophonic patterns?
- more data (which would be statistically valid)

- more speakers, regions, (generations, styles...)
- other places of articulation & lenis plosives as well

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