



Angus McIntosh Centre
for Historical Linguistics

Allophony: the phonological status of spelling in historical linguistics

Session 1: Native Spellers
Benjamin Molineaux



THE UNIVERSITY
of EDINBURGH

ETHL Summer School
Weds 24 June 2026

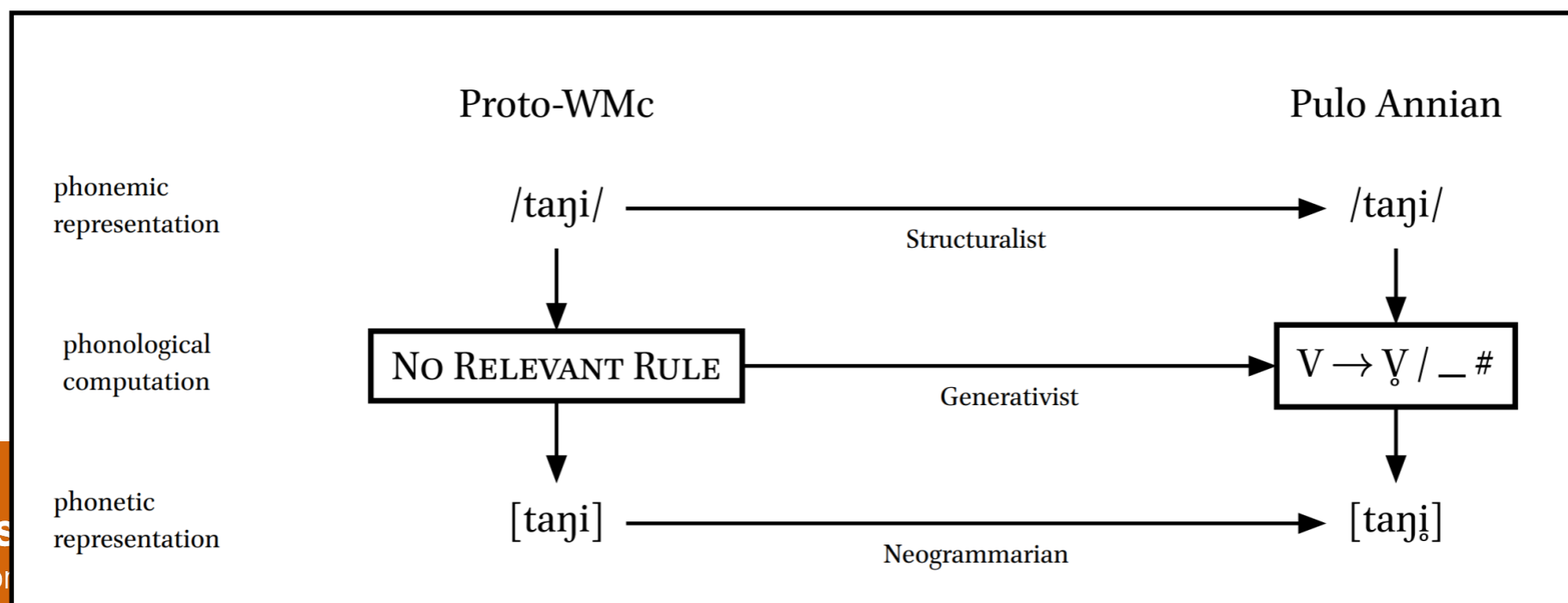
Today and Friday

- Session 1: Today
 - **Native spellers** (i.e. native speakers spelling their own language)
 - Graphemes: the *referential* and the *autonomistic* approaches
 - Spelling as phonological knowledge wrt non-standard spelling
 - Grapho-phonological profiles: prodigal, economical & sub-optimal
 - Case study: Older Scots dental fricatives
- Session 2: Friday
 - **Non-Native Spellers**: one script two phonologies
 - ‘General Alphabets’, phonological knowledge and typology
 - Case studies: Mapudungun dentals; Yahgan and Aymara vowels

Preliminaries

- What kinds of phonological structures do historical linguists attempt to reconstruct?

PWMc	CHK	PUL	WOL	PUA	SNS	MRS
*l	n	l	l	n	r	l ^x ,lj
*n	n	n	l	n	n	n ^x ,n ^j
*r	r	r	r	l	l	r ^x
*VCV#	VC#	VC#	VCV#	VCV#	VCV#	VC#
*f	f	f	f	θ	f	j



Preliminaries

- What kinds of phonological structures do historical linguists attempt to reconstruct?
- What do we assume alphabetic languages represent?

Old English (*fricatives and affricates*)

[v] - /f/

hwæt is lufu

'What is love?'

[tʃ] - /k/*

cild, ne wyrc me yfel

'Baby, don't hurt me'

Oldest Old English (*reflexes of Gmc *x*)

hæsil 'hazel', hara 'hare' but...

/h/=[h]

nect, necht, neht 'night'

*/h/=[x]?***

Spoken v. written language

- In highly literate societies ‘language’ = ‘written language’
- Linguists learn to describe language beyond the conventions of the written standard
- Spelling practice is often perceived as peripheral or as a proxy for the more ‘authentic’ targets of linguistic inquiry: spoken and signed languages.

Saussure (1915:45)

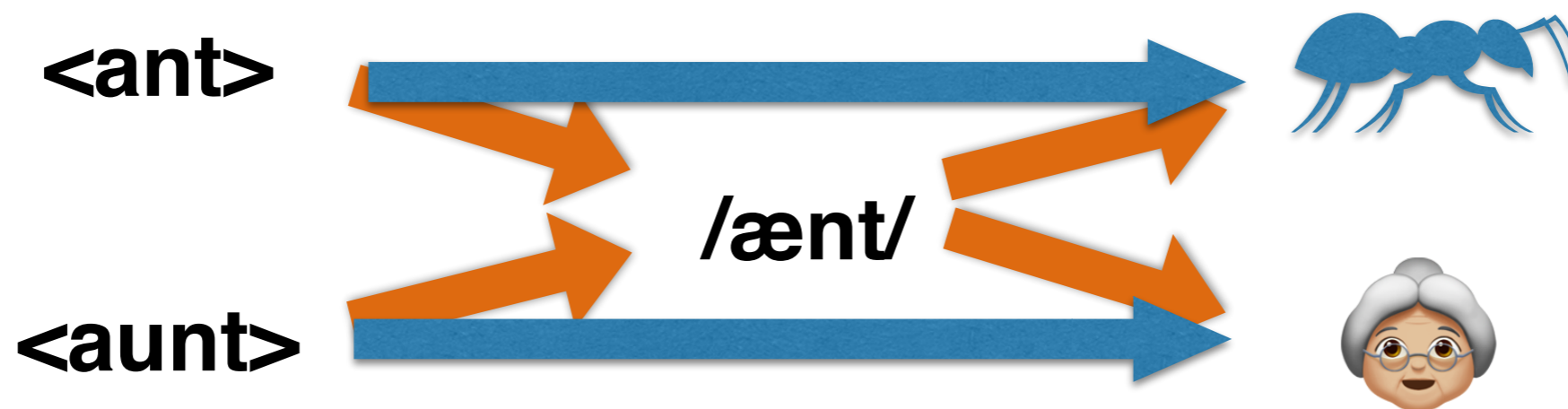
Langue et écriture sont deux systèmes de signes distincts; l'unique raison d'être du second est de représenter le premier; l'objet linguistique n'est pas défini par la combinaison du mot écrit et du mot parlé; ce dernier constitue à lui seul cet objet.

Language and writing are two distinct systems of signs; the sole purpose of the second is to represent the first. The linguistic object is not defined by the combination of the written and the spoken word; the latter alone constitutes the object.



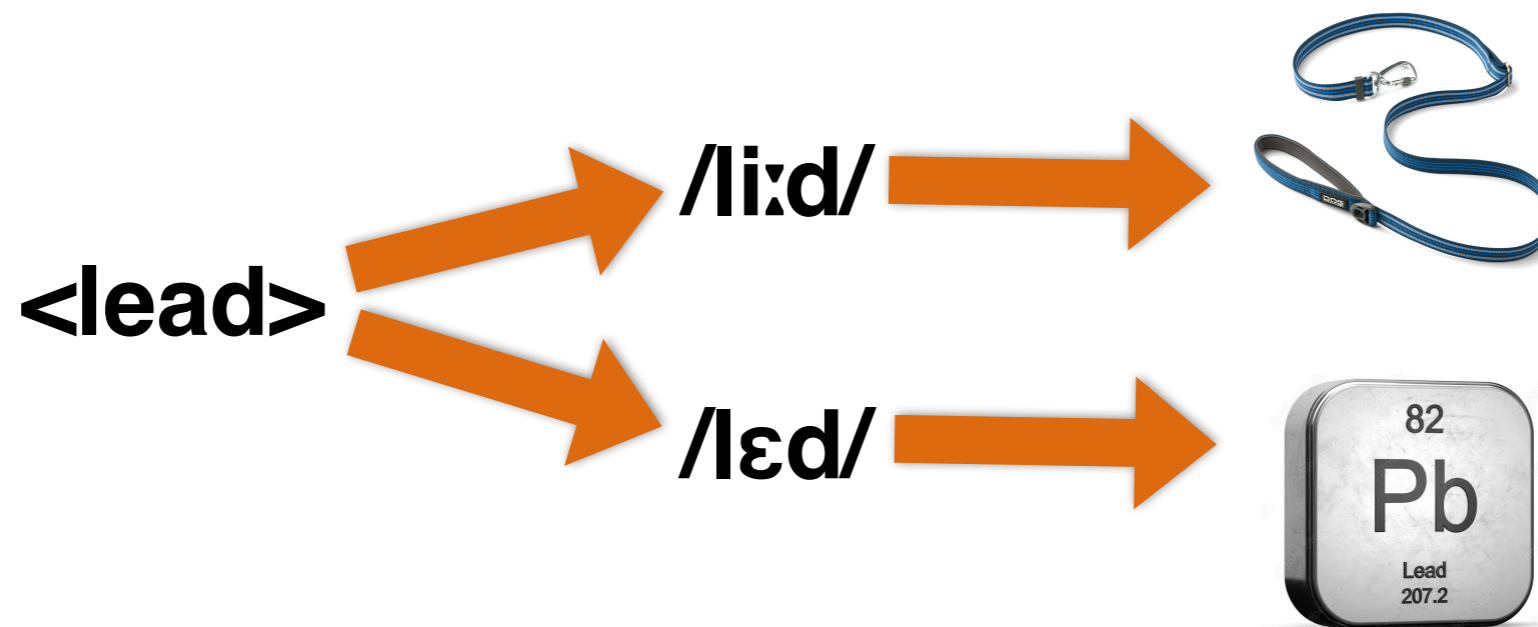
Representational vs Autonomistic approaches

- The **autonomistic view** acknowledges that spellings can behave as independent signs (Haas 1970)
 - Spellings can give a clearer path to the signified than the spoken word



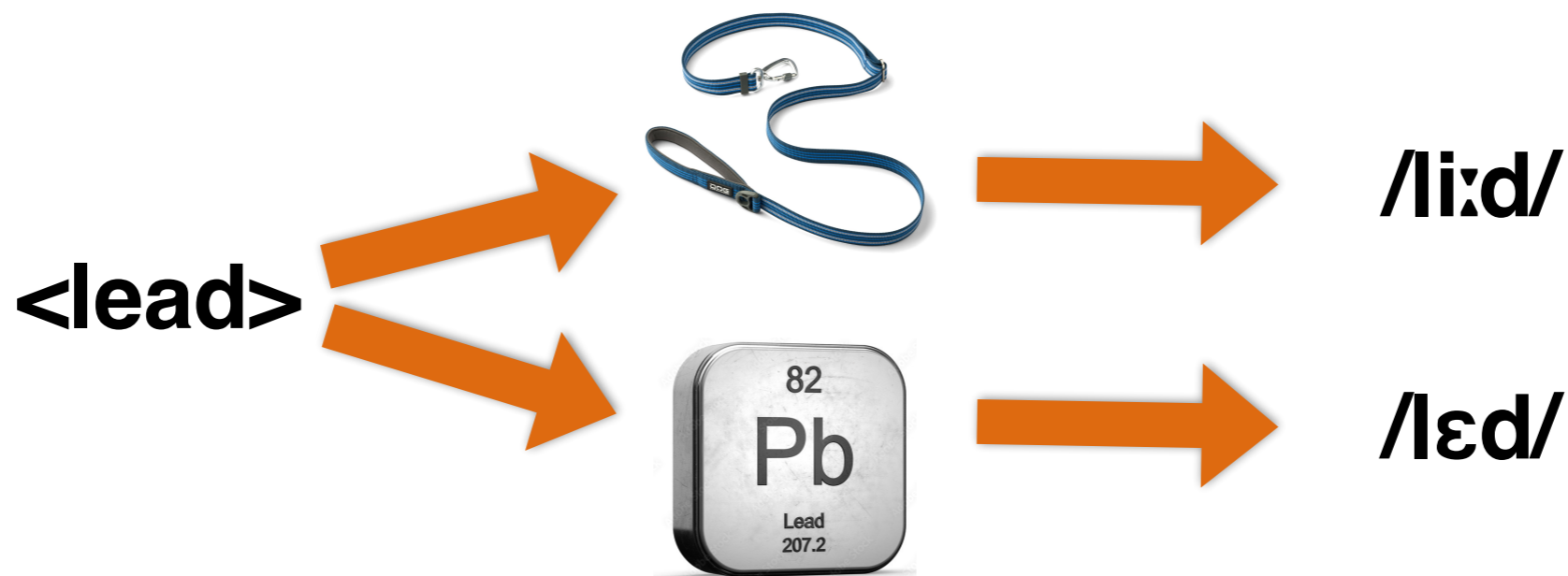
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Representational vs Autonomistic approaches

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Spoken v. written language

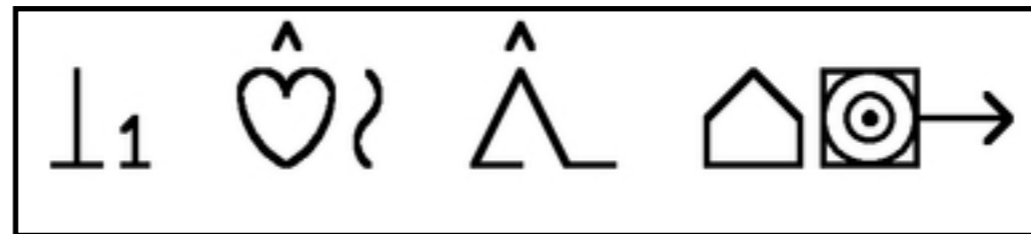
- Written language does represent its own kind of linguistic knowledge
 - ‘Writing is a mnemonic for speakers who know the language being written’ (Lass 2015:102)
 - Its investigation provides a unique view of cognition, interfacing with other sub-domains of language, such as phonology
 - Where we lack other evidence for a historical form of a language, writing can provide a window into its phonological structure
 - It is, crucially, always at a remove from the phonetic substance:

WRITING IS NOT TRANSCRIPTION

(Lass 2015:107)

Written language

- There have been attempts at written codes independent from spoken/signed languages (Sematography, Pasigraphy, eg. Blissymbolics)

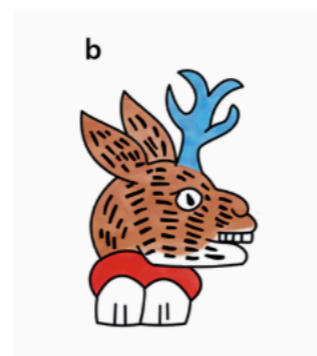


'I want to go to the cinema'

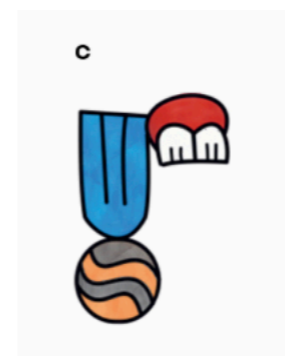
- Most written language entails engagement with the oral/signed code
- Aztec writing (on the limits – Whittaker 2021)



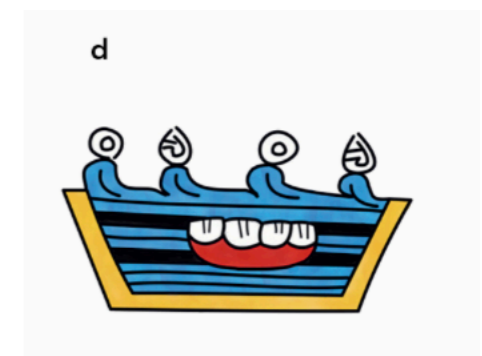
Mix-tlan
'in the Clouds'



Maza-tlan
'by the deer'






Teciuh-tlan
'in the hail'



A-tlan
'in the water'

Written language

- Different systems of sound-based writing
- Logographic/morphographic
 - 月: /yuè/ 'moon'
 - : /irt/ 'eye, see'
- Syllabic/moraic
 -   : /a-wi:z-lam/ 'citizen-ACC'
 - リンゴ: /ri-n-go/ 'apple'
- Alphabetic/abjads/abugidas
 - кѡща: /kʰ.stə/ 'house'
 - مَنْزِل /man.zil/ 'house'
 - ቤት: /bet/ 'house'
- Featural?
 - 집 : /tɕip̚/ 'house'

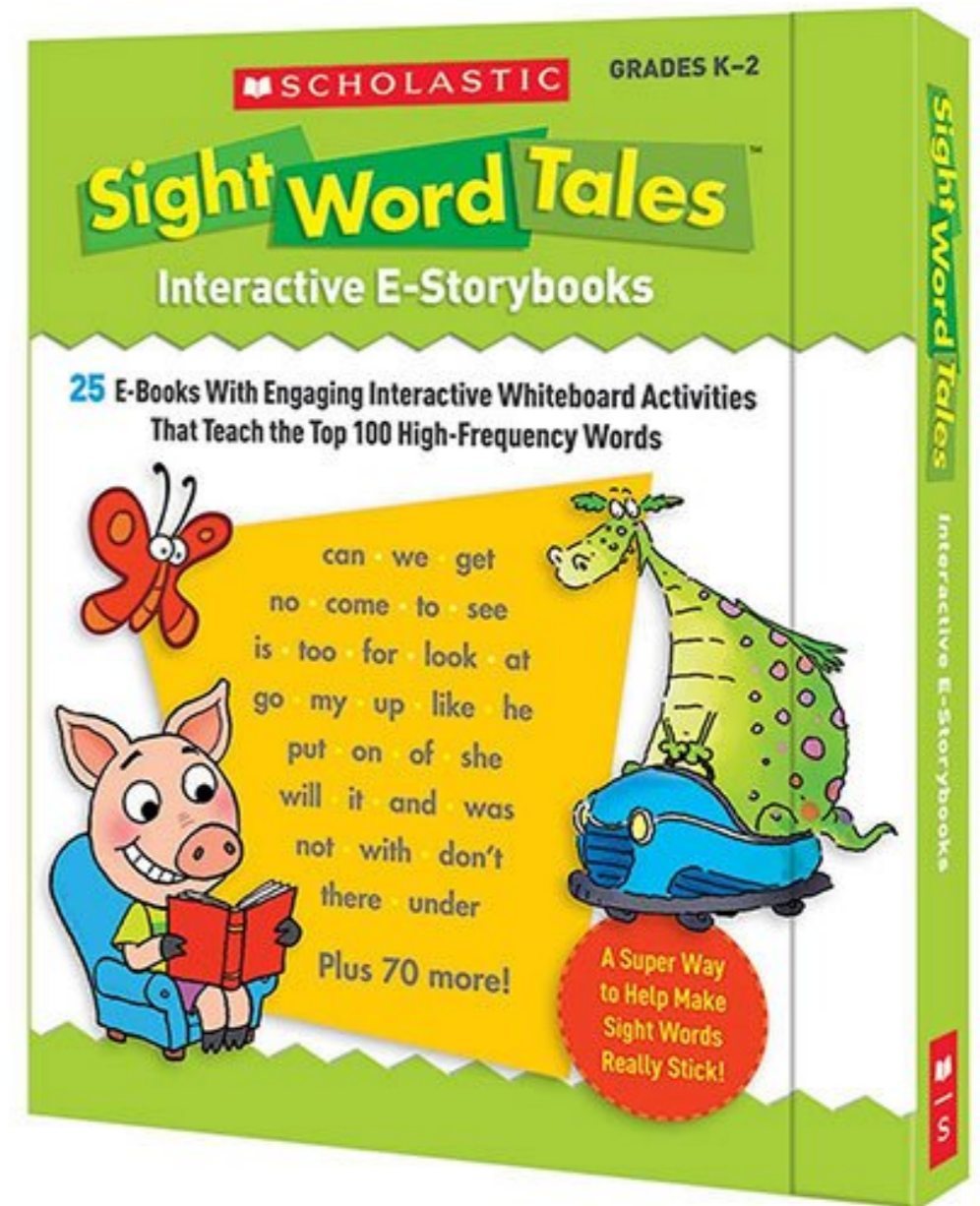
Alphabetic systems in context

- In theory:
 - alphabetic principle = phonemic principle*
 - the relationship becomes opaque
 - often the result of standardisation
 - may lead to diglossia
 - or a cline towards a logographic or morphographic writing

cf. *do, does, one, come, of, etc.*

- There are advantages!

cf. *hear v. here; Hull v. hull; nation v. national*



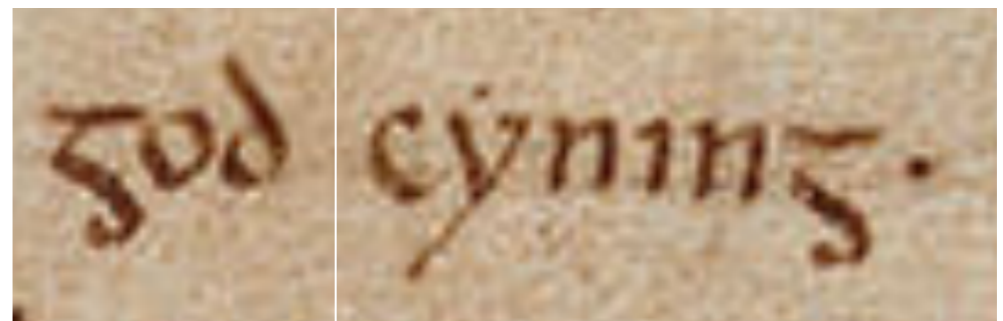
Monstrous ambiguity

- *...writing is for native speakers, not foreigners, and therefore has to be intelligible only to those who know the represented language, and are brought up in the tradition. This allows for considerable, even apparently monstrous ambiguity, and may be troublesome to later generations reading old texts, or scholars trying to interpret old spellings... (Lass 1997:51)*

Old English

/god/ 'god'

/go:d/ 'good'



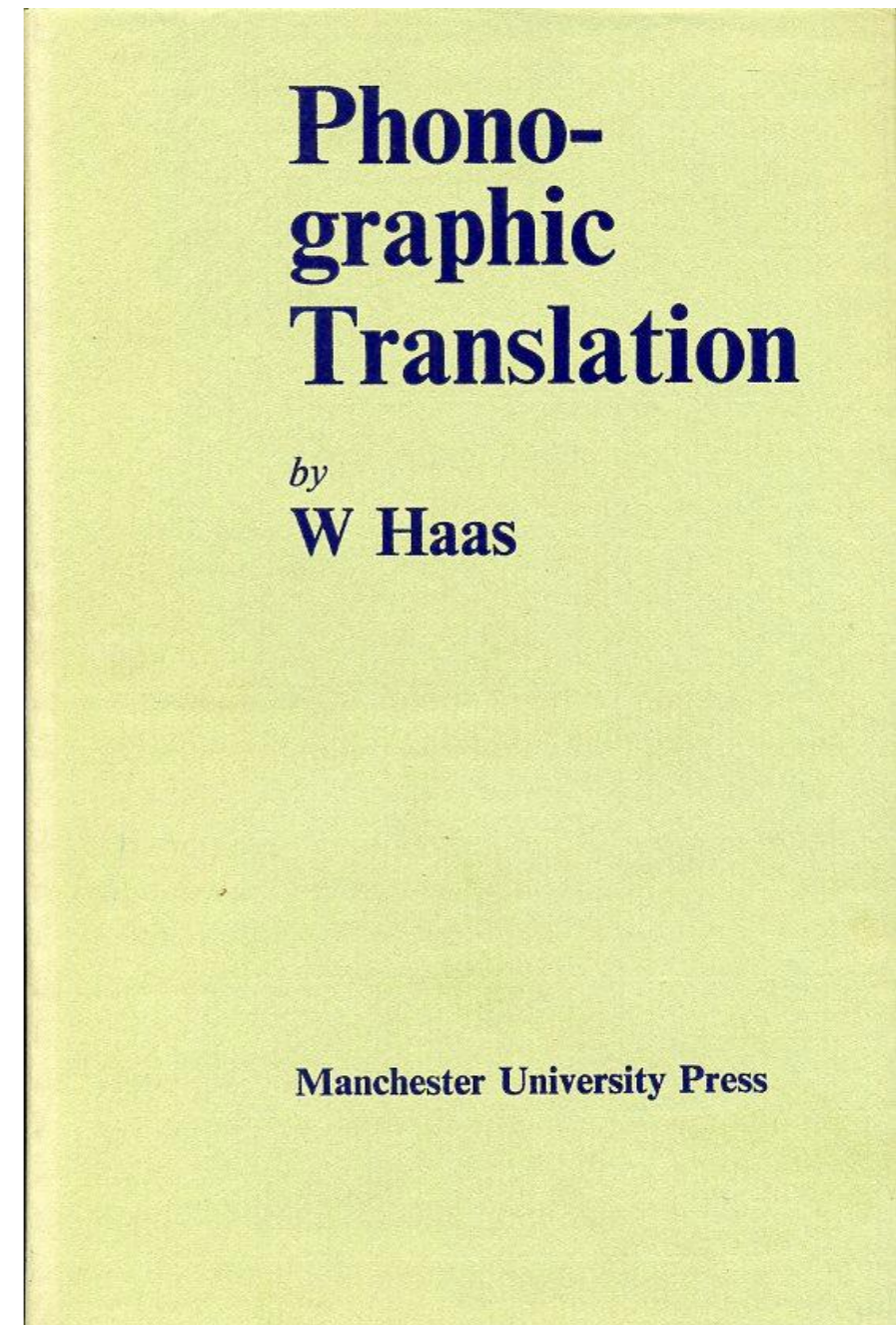
[ən ɛk'stɹɪm p^hə'zɪʃən]

- Everybody should write precisely as they speak, using IPA!
- There should be a *biunique* relationship between sounds and spellings
- Problems:
 - Reading would be slower, especially for speakers from more distant linguistic backgrounds
 - Pressures to conform to a particular accent may become stronger
- Spelling preserves unity
- The identity of morphemes gets compromised:
e.g. ['neɪʃən] v. [ˌnæʃə'n-æləri]

Spelling: shallow and deep

- “We shall often find it advantageous for an orthography to deviate from a phonetically faithful representation of speech. For speech is more than sound and communication is more than speech”
- The advantage may come about “either by increasing the capacity of the orthography for signalling lexical and grammatical values, or by extending its social and cultural uses”

(Haas 1970: 4)



Different forms of non-standard spelling

- **Absence of a standard (pre-standard?)**

'year' 2265 tokens in 855 texts in the *Linguistic Atlas of Older Scots (1380-1500)*
109 forms: e.g. *zere, zer(e), zhere, zeyr(e), zher, zerr, zer", zeere, zeir, iere, yeer, yer, yhe, yhere, yheere, yheir, yheir(e), yhere, phere, yheir(is), yhere(is), zer(is), z^{er}(is), yheirly, zeir(e)le, zerly, zer ly etc.*

- Represents some sound-based (phonological/phonetic) substance
- Show regional & temporal differences, as well as synchronic alternation
- Different traditions are at play
- 'The mutual expectations of medieval scribes and their readers were very different from the present-day equivalent' (Laing and Lass, 2003: 258)

Different forms of non-standard spelling

- Absence of a standard
- **Limited access to the standard**

Appendix Probi (Latin, 3-4c AD)
list of common orthographic errors

- *numquam* non *numqua* 'never'
- *idem* non *ide* 'same'
- *plebs* non *pleps* 'commoners'

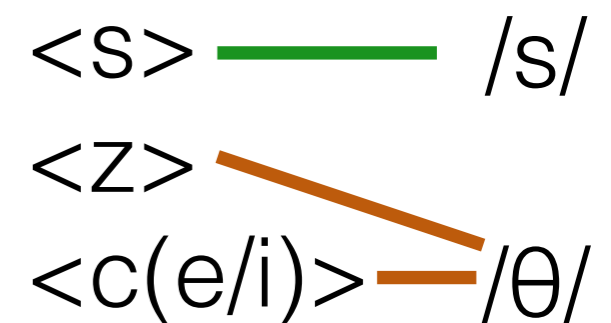
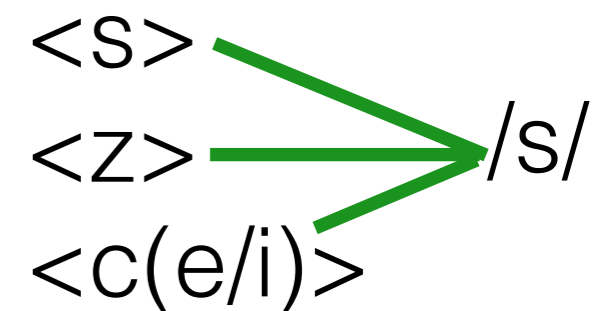
Spanish Language Twitter:

tengo un moreton en el bra^so nose como m lo hi^se
[Translate Tweet](#)
4:46 PM · Jan 31, 2023 · 28 Views Peru

*I have a bruise on my **arm** and I don't know how I **did** it to myself*

tengo un moretón muy feo en el bra^zo y no entiendo cómo me lo hi^ce—
3:53 AM · May 29, 2023 · 38 Views Spain

*I have a very nasty bruise on my **arm** and I don't understand how I **did** it to myself*



Different forms of non-standard spelling

- Absence of a standard
- Limited access to the standard
- **Purposeful subversion of the standard**
 - Usually used to represent non-standard features
 - Often called ‘eye-dialect’
 - Use tends to be sporadic, focusing on shibboleths and more salient features (see Honeybone 2020)

eaux hayle nawl!

‘oh hell no!’ (from Jones 2016:57)

Took myself through to Edinburgh for a uni open day and ten minutes before the event was due to start it was cancelled. So I met a new pal, walked them to the train then took myself a wander to a wee bookshop and **aff hame**. It was really nice.




Non-standard writing

SPEECH	Informal	Formal
Private	Everyday interactions w/ friends & family	Interactions with a power differential
Public	Entertainment, comedy, etc.	Speeches, formal schooling interactions

WRITING	Informal	Formal
Private	Letters to family and friends	Formal correspondence
Public	Social media!	Academic, ecclesiastical, legal


Case Study: AAE on Twitter

- Jones 2016: *Tweets as graffiti: What the reconstruction of Vulgar Latin can tell us about Black Twitter*

 **WiiT2LL'S**
@Bee_Yu_Tee_FuLL

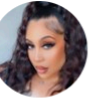
@iiLuVDReaDHeaDS lmao not my **fawt**

2:20 PM · Sep 24, 2012

 **Kozi**
@Im2Kozi

I just ate half a **bow** of cereal with a fork before I realized it wasn't a spoon.

3:11 AM · Oct 15, 2014

 **Big' Kee** 🤔
@_spanishflyyyy

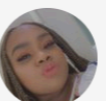
Me, And My **Mova** Was Inda Subway And J Babiee Walked In... My **Mova** Said Watchu Doin **Ova** Here Onda SouthSide, I Thought Chu Was Frm Minnesotaa?

10:44 PM · Nov 2, 2011


 **KochJohns RFC** 🚀
@TheRealCJJalloh

Luh you too **wodie**

9:16 PM · Apr 23, 2017

 **BRYTTANI** @_Bryttani_ · Jun 30, 2021

Hell **nawl** it wasn't. 😞

 **BRYTTANI** @_Bryttani_ · Jun 29, 2021

Today will be better than yesterday. 🙏

 **kyle.**
@Ksause

Aye quick question... nh but y'all be wearing **drawls** with y'all swim trunks?

1:40 AM · Jun 2, 2023 · 898 Views

 **Howard Hughes** 🙏
@lenny_devito

Trust me if I cuda got 400 followers wit jus a egg I dam **Sholl** wuda tried.. did I say **Sholl**..im officially a bama

3:01 AM · Sep 14, 2012



Case Study I: AAE on Twitter

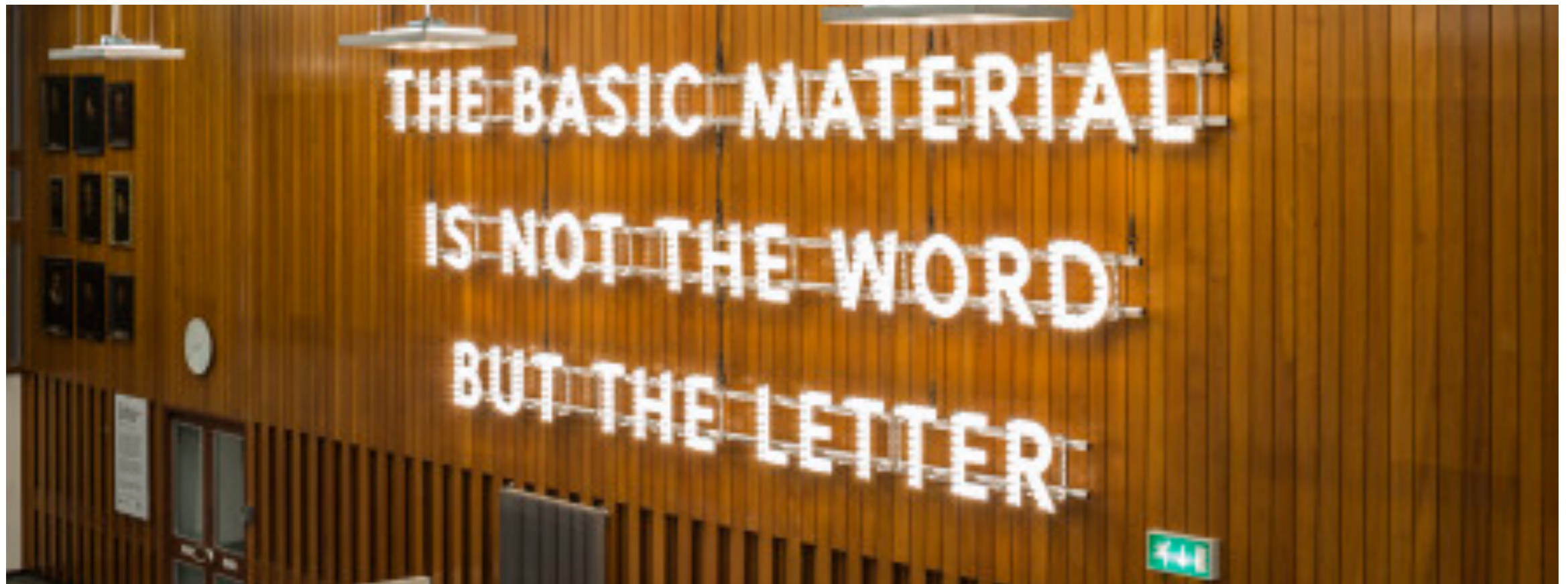
- Jones 2016: *Tweets as graffiti: What the reconstruction of Vulgar Latin can tell us about Black Twitter*

Table 1: Deletion and vocalization of liquids by position in word

Phonological Phenomenon	Position	Orthography	Example
/r/-deletion	final	<do>, <wea>, <hea>, <ova>, <mo>, <patna>	<i>ur mova said you comin ova</i>
/r/-deletion	medial	<Halem>, <bode>, <wodie>, <patna>	<i>luh you too wodie</i>
/l/-deletion	final	<coo>, <bow>	<i>smoke a bow, bow of cereal</i>
/l/-deletion	medial	<fawt>, <go>	<i>you a go digga</i>
/l/-for-/r/	final	<sholl>	<i>sholl ain't!</i>
/l/-for-/r/	medial	<drawls>	<i>goin' on a date; gonna get dem drawls</i>
intrusive /l/	final	<nawl>	<i>Nawl, it wasn't important</i>

How do we analyse non-standard spellings?

Assumption: spelling conventions are less fixed and sound-spelling relationships are more direct – writing should be ‘sounded out’



Nathan Coley (2018)

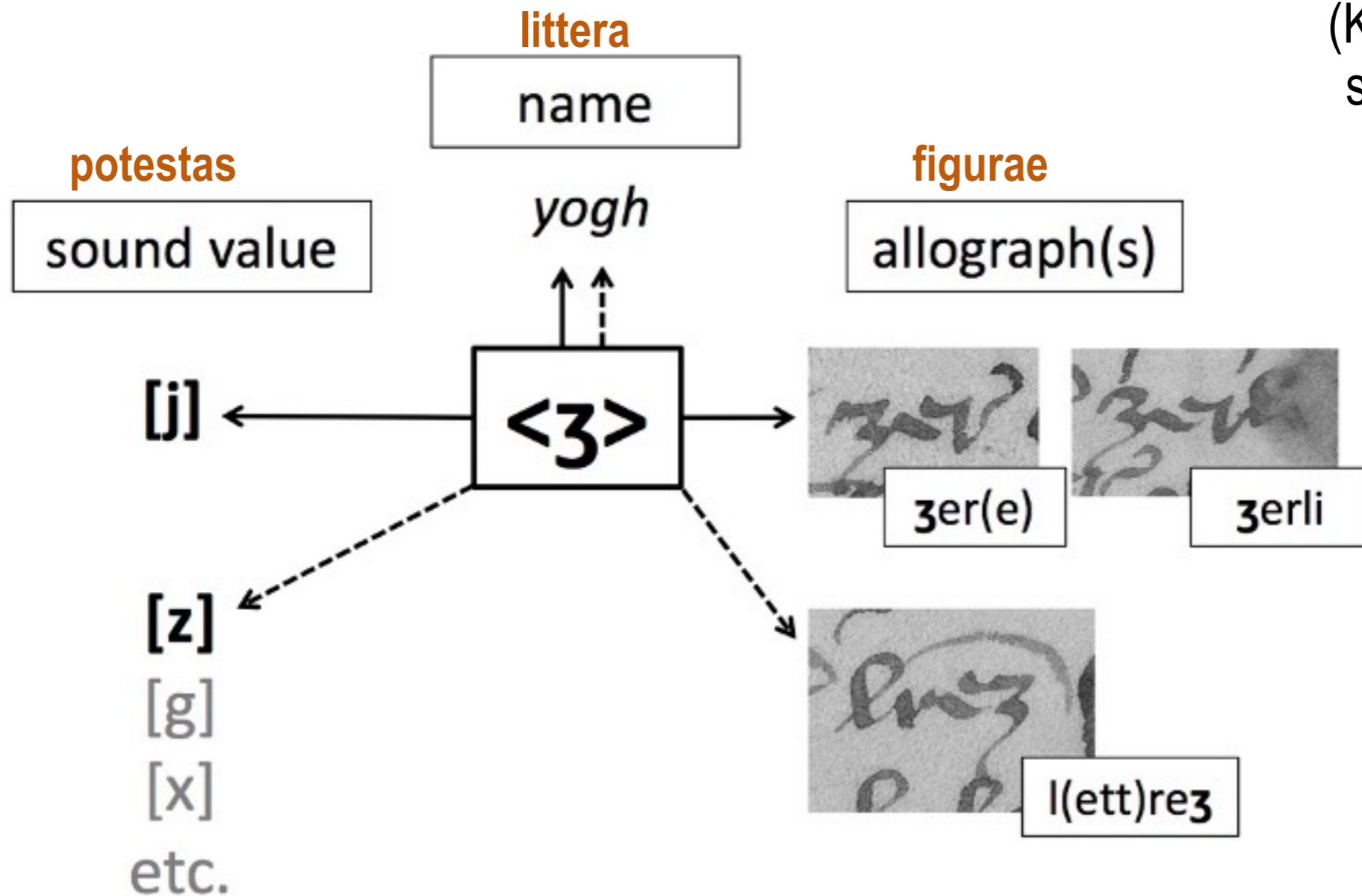
The doctrine of the *littera*

- Aelius Donatus: *Ars Maior*:
 - *Littera est pars minima vocis articulatae . . . littera est vox, quae scribi potest individua . . . accidunt uni cuique litterae tria, **nomen figura potestas**. quaeritur enim, quid vocetur littera, qua figura sit, quid possit*
 - **Littera** is the smallest unit of articulated sound...littera is (a) sound which is capable of being written alone . . . littera has three aspects: **name, shape, [sound] value**. For one must ask what a letter is called, what shape it has and what sound it has



The doctrine of the *littera*

(Kopaczyk et al, 2018;
see also: Laing 1999;
Benskin 1997)



The components of a grapho-phonological unit in context (tokens from Laing Charters 805, 1447, Centre for Research Collections, University of Edinburgh).

Prodigal v. economic spelling systems

- Mediaeval scribes were ‘capable of sophisticated and subtle linguistic analysis’ (Laing and Lass, 2003: 258)
- All writing systems are conventional to some degree. Spellings are not the same as phonetic, or even phonemic, transcriptions. But spellings do have a real relationship to the sound values they conventionally imply, and some systems achieve this with more economy than others. (Laing 1999: 251)

	Phonemes	Graphemes
Economical	N	N
Prodigal	N	N+x
Sub-optimal	N	N-x

How do prodigal systems develop?

- Figural changes
- Borrowed spellings/archeism
- Avoidance of homography
- Sound change

Bi-uniqueness is not a concern!

(Lass & Laing 2009: 114)

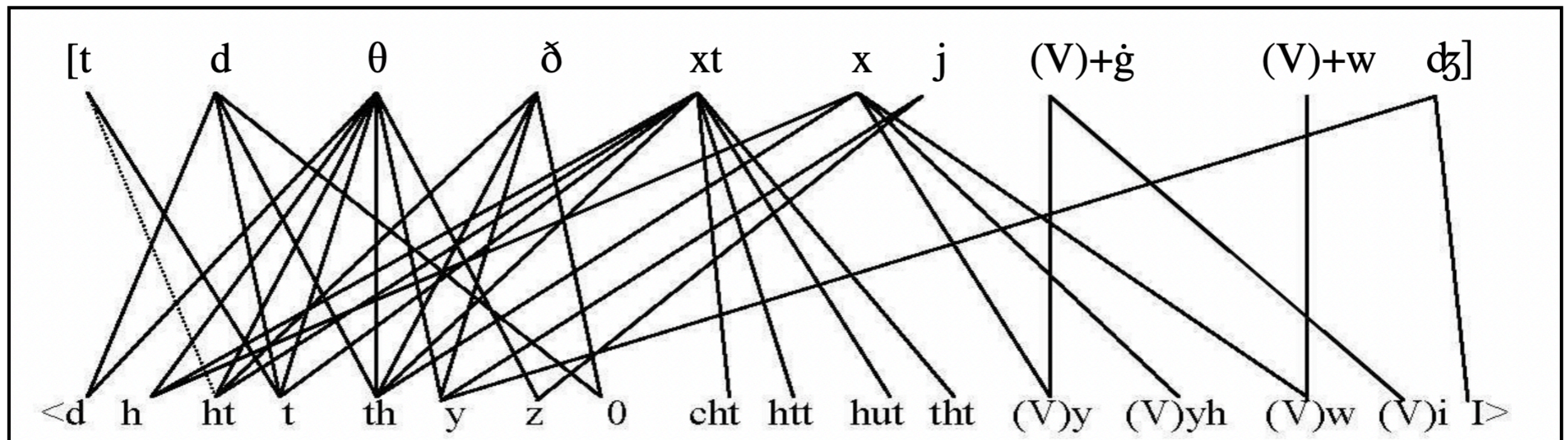


Figure 1. Phonographic profile of dental consonant mappings in *dulwicht.tag* (London, Dulwich College MS XXII, fols. 81v-85v: *La Estorie del Euangelie Lincs*).

How can we investigate historical sound-systems?

(Kopaczyk et al, 2018)

Triangulate on:

Scholarly
literature

Spelling
Evidence

Phonological
theory

Data from
earlier and
later stages

Typology of
sound
change

[?]
+
/?/
/x/ → [y]

A sub-optimal system

*And this water that causeth the curse shall go into thy bowels to make thy belly to swell and **thy thigh** to rot.” And the woman shall say, “Amen, amen.”*
(King James Bible, Numbers, 5:22)

<**thy**> → /ð/

<**thigh**> → /θ/

Case Study: dental fricatives in Older Scots

Scots in a Nutshell

- The traditional Germanic language-variety of the Scottish Lowlands
- First attested as a late 14th century *lingua franca* of the Scottish burghs
- Flourished in the 15-17th centuries
- Became *anglicised* beginning in the 17th c.
- Still spoken today, on a continuum with Scottish English

	1100	1200	1300	1400	1500	1600	1700	
Old English Dialects	Early Middle English		Middle English		Late Middle English	Early Modern English		Modern English
	Pre-literary Scots			Early Scots	Early Middle Scots	Late Middle Scots	Modern Scots	
	Older Scots							



(after Kopaczyk, 2013 p.239)

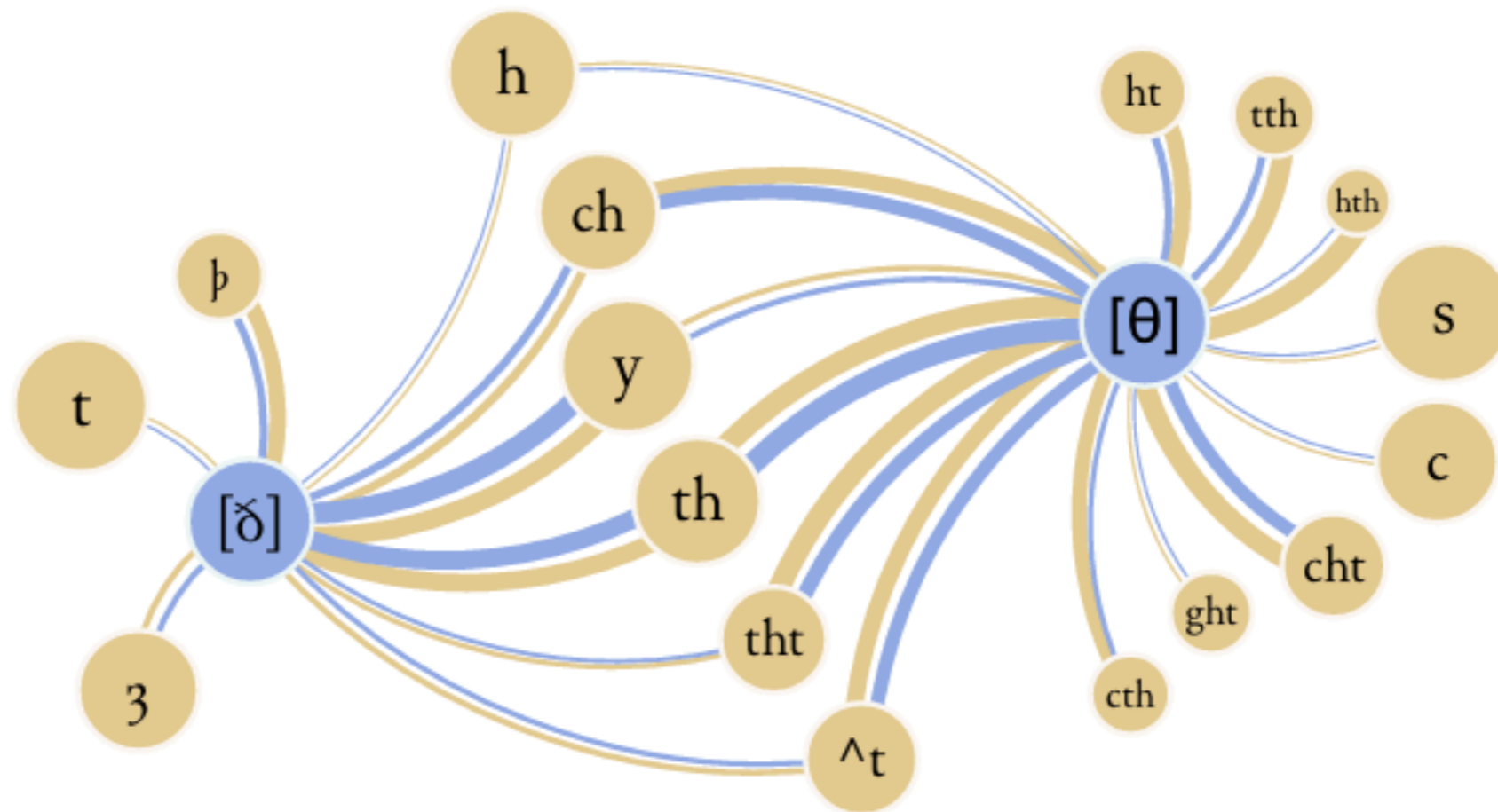
Case Study: dental fricatives in Older Scots

8
In the name of our Lord Jesus Christ
I, the said John Lord of Haliburton greetung in god everlastand. Witte ye
to have sette and to ferme latten & be yu' our put luez sett and to ferme latten al & hale ye quart of our lande
of lambden ye quhilk quhilon in take of vnguhile our fader John hatly had to our welle beluifit pueyrrime
thom hatly and alexd hatly brey germell condeit and seualy for al ye time & daie of your liff ye pue
of ye saide thom & alexd in your take of our saide quart of lambden at ye feste of witspouday next fo
lollande of your put luez ye dat' to be holden & hadde ye saide quart of lambden with ye ptmes to ye saide
thomas & alexd for al ye time & daie of your liff with al & suda freedom quoditt & asiamet & iustit
vof ptmes quhat sident to ye saide quart ptmande or iustit voflly my ptme in ty to tid freely quietly full
in halibly welle & in pete but ony reuocacion or impediment d ty to tid and with all simple freedom pfit
& asiamet as end ye saide John hatly had & hadde ye saide quart with ye ptmes of us or of our son our saide
fader & welle of haliburton quhilk wad assolve d our ty to lutan ye saide thom & alexd with ye saide ptmes
for ye saide quart five pund of ye usual mone of Scotland at the what time of ye yet witspouday & mitem
d wint be elbm portons & portonaly & of ye saide five pund ye saide thom & alexd zeli payand til our lady
mod threth the schillmy & four pemy d name of male & for his thrid of ye quart with ye ptmen And we
ye saide John & our ays ye saide quart of lambden with ye ptmes to ye saide thom & alexd hatly again al
d dly sal regard acipite & in al thing & be al thing as is forsaide inderande al time & daie of your liff
leli defende In witness of ye quhilk thing our sele to my put luez of take we have hys in at diltoun ye
tende du of ye moneth of may ye yet of god in thollpoude four & sebm zyl befor my witness
ye Chauprtm mcolson with our morn

In witness of **ye quhilk** "thing"
'in witness of the which thing'

Case Study: dental fricatives in Scots

- Based on Laing 1999, Laing & Lass 2003, 2009, Kopaczyk et al. 2018

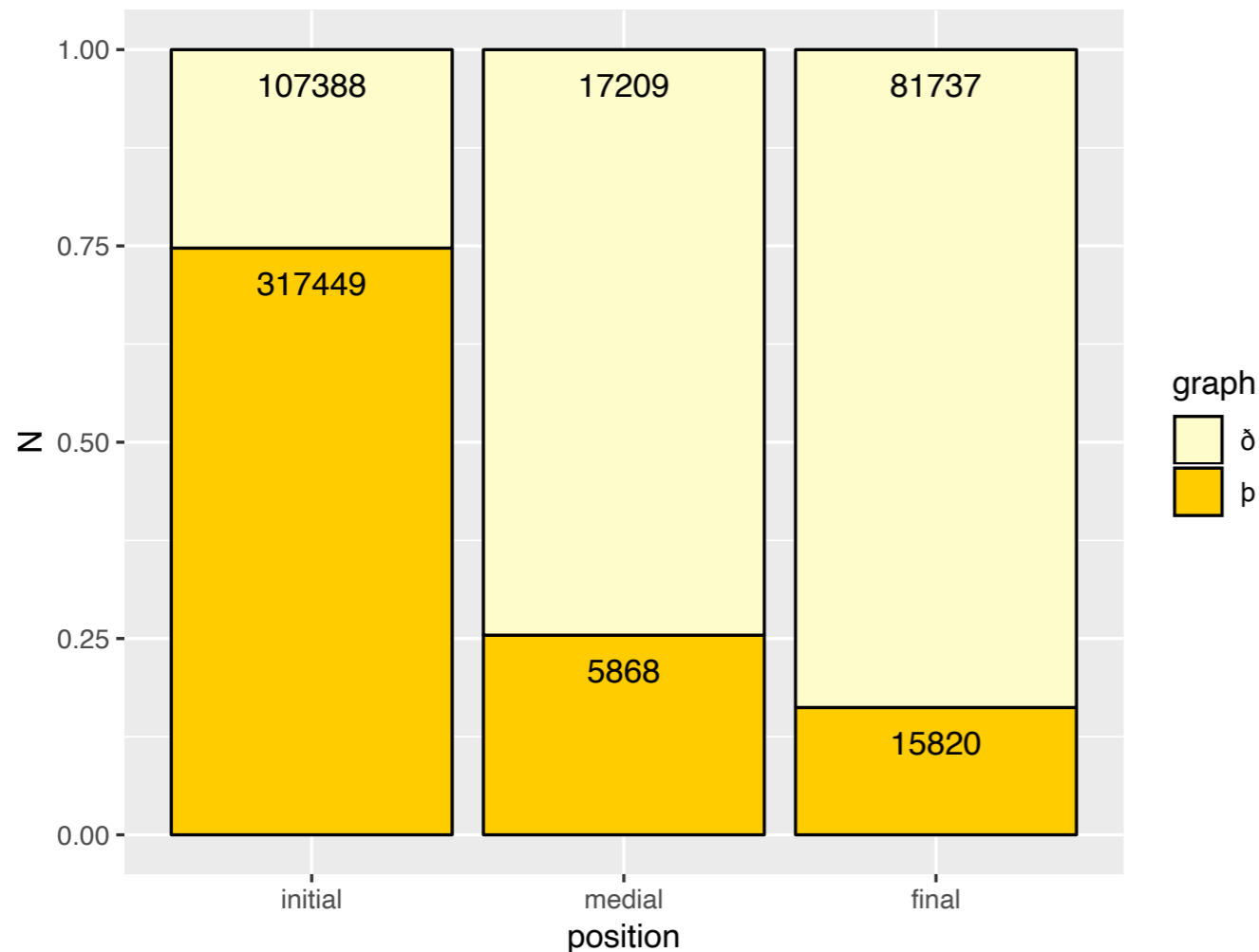


Overlapping spelling substitution sets for [ð] and [θ] across the From Inglis to Scots corpus data (Alcorn et al 2026)

Case Study: dental fricatives in Scots

In Old English

- Dental fricatives were spelled with <ð> or <þ>
- Their distribution was based on *graphotactics*



Proportion of <ð> and <þ> spellings by position in the word in the Dictionary of Old English Corpus (DOEC 2009)

Case Study: dental fricatives in Scots

Old English fricative voicing was allophonic

- ◉ Formerly allophonic voicing patterns become phonemicised
 - ◉ OE [fricative] → [+voice] / V_V
- ◉ ME /f:v/; /s:z/; /θ:ð/
 - ◉ OE /f/ = [f] *fisc* 'fish' > ME /fiʃ/
 - ◉ OE /f/ = [v] *drifan* 'drive' > ME /drivən/
 - ◉ OE /s/ = [s] *sweord* 'sword' > ME /swerd/
 - ◉ OE /s/ = [z] *nose* 'nose' > ME /nozə/
 - ◉ OE /θ/ = [θ] *þre* 'three' > ME /θrē/
 - ◉ OE /θ/ = [ð] *oðre* 'other' > ME /oðrə/
- ◉ In part, due to borrowings from French: *vēle* 'veal' v. *fēle* 'many'; *veyn* 'vein' v. *fain* 'glad' (and Greek: *seal* v. *zeal*)
- ◉ Also, due to degemination creating minimal pairs: *over* (</f/) v. *offer* (</ff/)

Case Study: dental fricatives in Scots

Word-initial dental fricatives

- Initial [θ] of pronouns, demonstratives and determiners (*they, thy, there* or *the*) became voiced [ð] between OE and ME
- Verse evidence
 - Beowulf (alliteration)
 - ðys dogor þu / geþyld hafa* ‘this day you have patience’ (1395)
 - þær ic, þeoden min, / þine leode* ‘there I, my prince, your people’ (2095)
 - Chaucer (rhyme) (The Canon’s Yeoman’s Tale)
 - soothe/to the** ‘the truth/to thee’ (Prologue 662-3)
 - swithe/hy the** ‘swiftly/hasten the’ (Tale 1294-5)

Case Study: dental fricatives in Scots

- The Anglic written tradition post-1066:
 - Changes in nature, dispersion and transmission of written material
 - Demise of OE *Schriftsprache* in West-Saxon scriptoria
 - “no longer any pressure on writers of English to conform to a single written standard” (Benskin 1982:20)
 - New spellings for fricatives: <v/u> for [v] and <z/3> for [z]
 - <ð> + <þ> system for OE dental fricatives quickly collapsed
 - <ð> saw a sharp decline across most scribal systems
 - <th> makes a bold reappearance (<Anglo-Latin)
 - for Greek: *θύμον* = *thymun* ‘thyme’
 - Old English names: *Athelbald*, *Atheluulf*
 - Initial position – including highly frequent function words – was long associated to <þ>

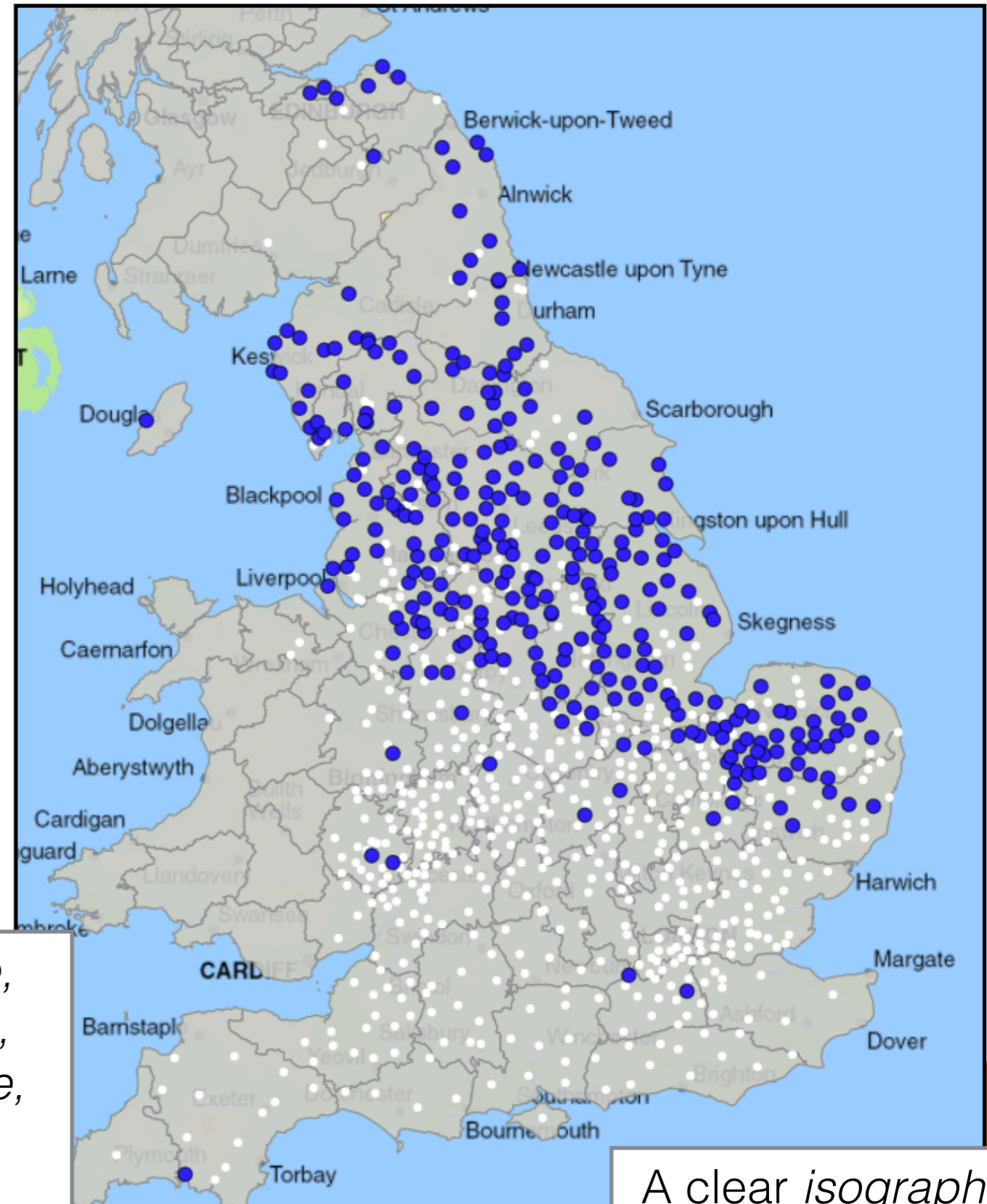
Case Study: dental fricatives in Scots

- In Northern ME, the shapes <p> and <y> merged
- Benskin 1982:23

<y>= i p ii y <p>= p

- Often a cline, but in both [ð]~[θ] and [j] etymological categories
- Mostly closer to <y> in shape
- Absent in the south (McIntosh 1974, Benskin 1982)

<y>-initial spellings of the items *the, these, those, than, they, then, their, though, them, think, there, through, thee, thy, thou, thence, thither, three, third, thousand* in eLALME (1350-1500)

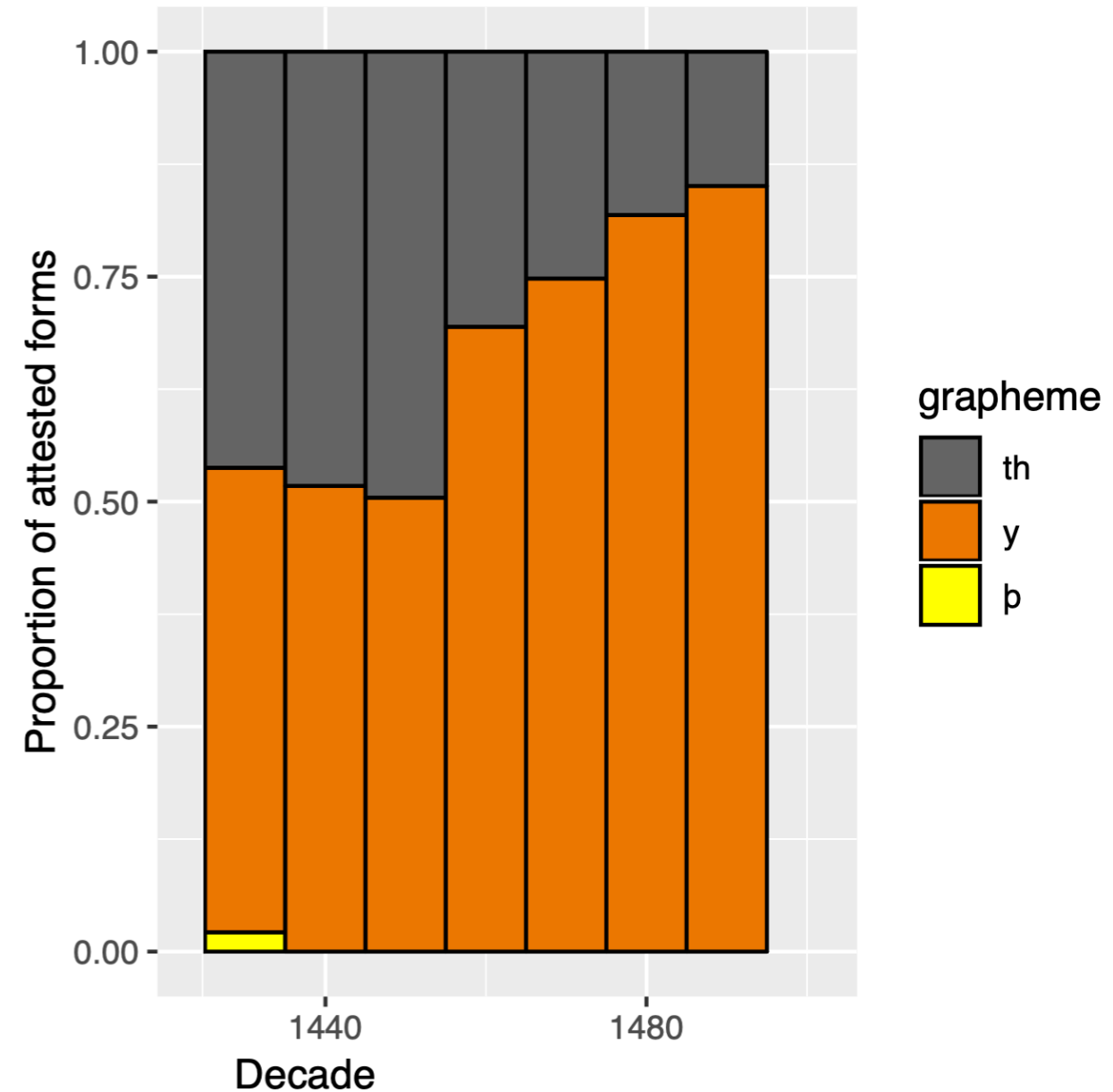


A clear isograph

Case Study: dental fricatives in Older Scots

In Scotland:

- <th> came in everywhere,
- but <y> persisted word-initially in function words,
- then, <y> spread to medial dental fricatives
- Growth of a <y>-*for-voicing* pattern
- Scots went from a graphotactic pattern to phonographic one
- A minor phonemic contrast was represented graphemically



Medial spellings for dental fricatives in 15c Scots, by decade (Molineaux et al 2020:113)

Allophonic writing? Icelandic

- Dental fricatives in Icelandic today are mostly in complementary distribution as regards voicing (in native words)

[θa:ri]

‘kelp’

þari

[bliðʏr]

‘kind, sweet’

blíður

[sy:θ]

‘hum’

suð

- The spellings mostly reflect this
- ...but loanwords seem to buck the trend, suggesting contrast

[k^haθoulsk^hʏr]

‘Catholic’

kaþólskur

[k^haðat]

‘rope’

kaðall

Allophonic writing? Icelandic

- Historically, though, the distribution is much more consistent – with little evidence for contrast in the phonology and consistent allophonography

/ðrek/	/ðriði/	/sto:d/	/dɑ:d/
[θrek]	[θriði]	[sto:ð]	[dɑ:ð]
‘fortitude’	‘third’	‘stud’	‘stud’
<i>þrek</i>	<i>þriði</i>	<i>stoð</i>	<i>dað</i>

- Consistent allophonic writing is rare in 'normal' (=fully institutionalized or codified) orthographies; the preferred input is phonemic. (Lass 1996:58)

Wrapping up

- Non-standard spellings provide a unique window into phonology
- Social, geographical and diachronic variation can be captured
- Grapho-phonological mapping can be economic, prodigal or sub-optimal
- Non-standard materials show writers linguistic awareness
- Careful analysis is necessary
 - of the conventions writers are exposed to
 - of context for alternations (linguistic and extralinguistic)

Wrapping up

- Spelling conventions, like sound systems, are dynamic:
 - influenced by materiality and social conditions
- Sounds and spellings have parallel histories that need separate work
- But they aren't ships in the night!
- Linguistically aware spellers can co-opt conventions to be more representative of their own speech patterns
- It is also true that, for native spellers, phonological transparency is often subordinate to the inertia of conventions
- To an extent standardised spelling is the prerogative an in-group

“For most of history, writing has been precisely an “elaborate cipher” – restricted access to the technology of writing has often been used as a way of consolidating power within a privileged group.” (Liuzza 1996:26)

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