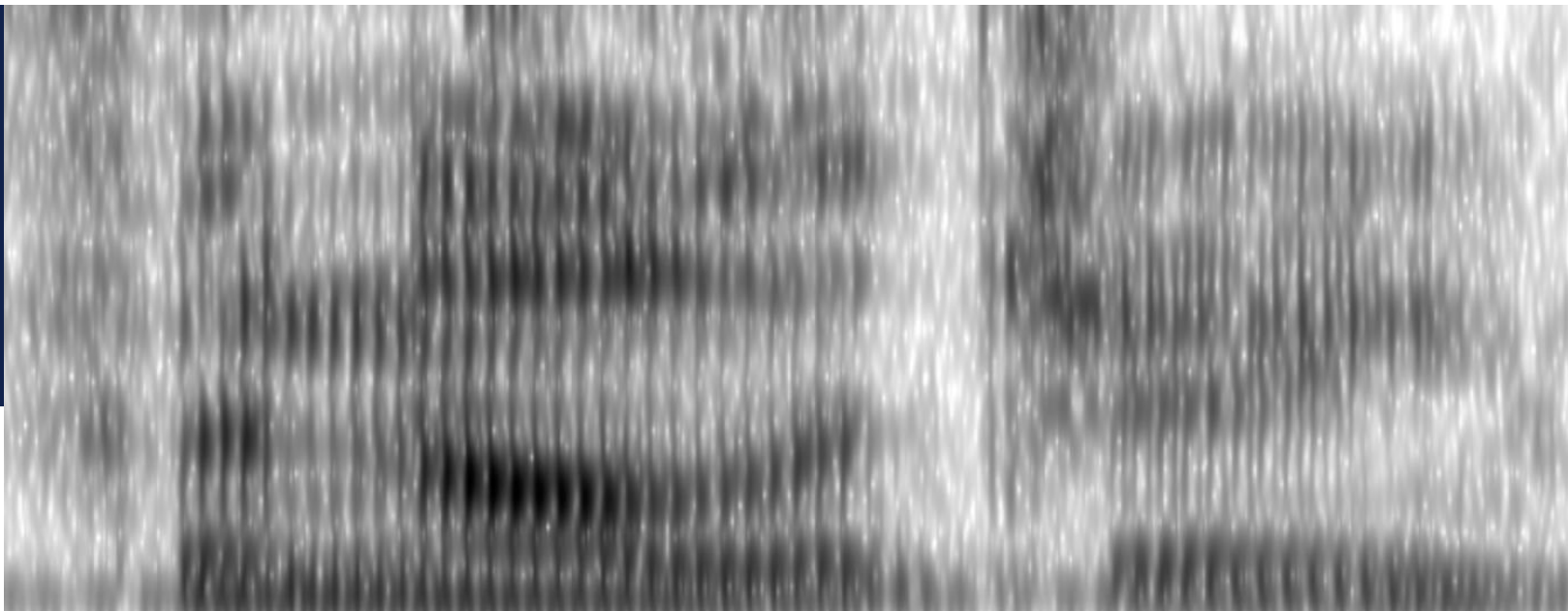




UNIVERSITY OF
OXFORD



Historical Phonology

Joshua Booth

joshua.booth@ling-phil.ox.ac.uk

Language & Brain Laboratory

Faculty of Linguistics, Philology & Phonetics

University of Oxford

Historical Linguistics

ƿȳ ilcan ġēare ġesette Ælfred cyning Lundenburg

‘In the same year, King Alfred occupied London’

**ƿȳ ilcan ġēare ġefeaht Eċbryht cyning Beornwulf
cyning on Ellendune**

‘In the same year, King Egbert fought King Beornwulf at Ellendun’

Anglo-Saxon Chronicle, Old English

Sound change

- Regular sound change is **systematic**
- **Junggrammatiker** (*Neogrammarians*, late C19th)
 - *Ausnahmslosigkeit der Lautgesetze*
 - Simultaneous
 - Regular & uniform
 - Ignores morphology
- **Lexical diffusion**
 - Gradual spread through lexicon
- What do we mean by ‘language change’, though?

Sound Change and Phonological Change

(a) What can happen to phonological rules diachronically?

- Addition (i.e. sound change)
- Loss
- Reordering

(b) What units are involved in phonological rules which may undergo change?

- Features
- Moras
- Syllables
- Feet (involving metrical stress)

All of the above can lead to **reanalysis or restructuring of the stem**

Comparative *Reconstruction

- Based on evidence from daughter languages, we can reconstruct unattested forms in parent language
 - Ignore flukes
 - Majority verdict:
Eng *six*, Latin *sex*, Greek *hex*, Sanskrit *ṣáṣ*, eIrish *sé*, Tocharian A *ṣäk*, Old Church Slavonic *šestĩ*, Bengali *ছয়, ছ* [ʧʰɔ(ɪ)]
 - Phonological plausibility
 - Does the reconstructed system make sense?

WGmc	EGmc	NGmc	Latin	Greek	Sanskrit	PGmc	PIE
OE <i>fæder</i> OS <i>fadar</i> OHG <i>fater</i>	Gothic <i>fadar</i>	ON <i>faðir</i>	<i>pater</i>	<i>πατήρ</i> (<i>patér</i>)	<i>pitṛ</i>	<i>*fader</i>	<i>*pátér</i>

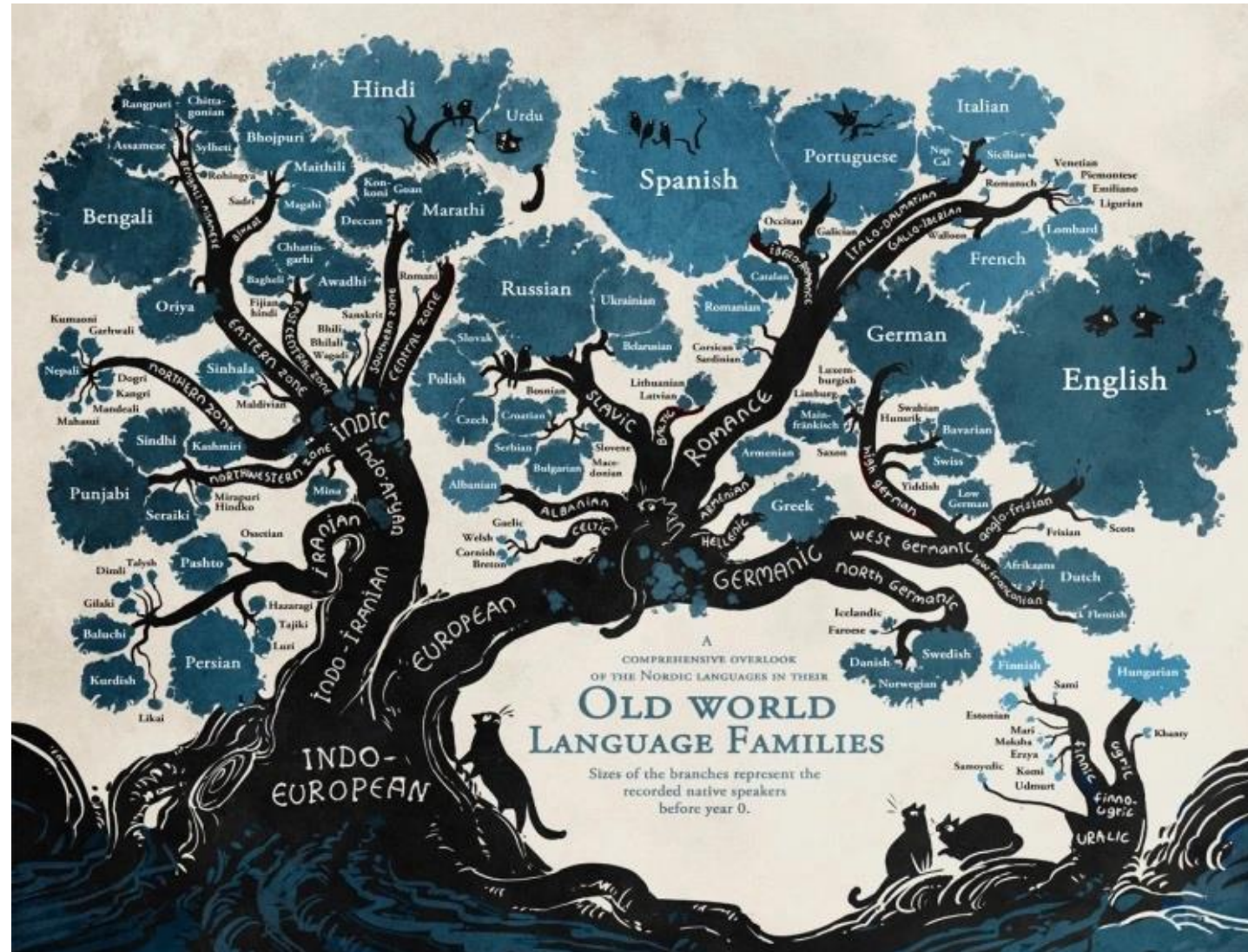
Comparative *Reconstruction

- Based on evidence from daughter languages, we can reconstruct unattested forms in parent language

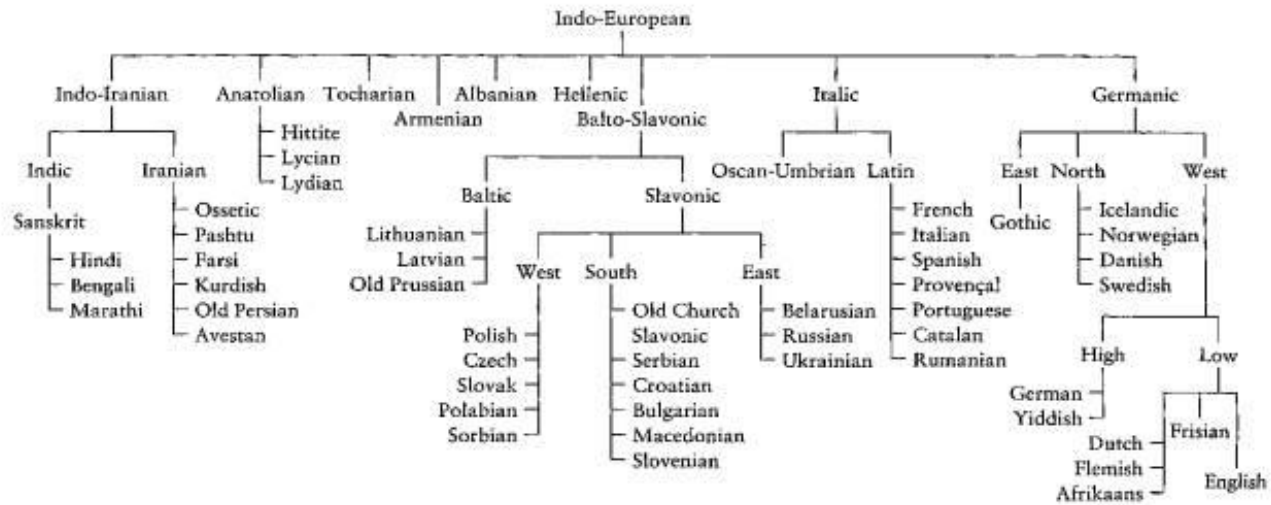
WGmc	EGmc	NGmc	Latin	Greek	Sanskrit	PGmc	PIE
OE <i>fæder</i> OS <i>fadar</i> OHG <i>fater</i>	Gothic <i>fadar</i>	ON <i>faðir</i>	<i>pater</i>	πατήρ (patér)	<i>pitṛ</i>	<i>*fader</i>	<i>*pátér</i>

- Problems:
 - Allophones
 - Variant forms
 - Time limitations
 - Language contact

Family Trees



Family Trees



Family Trees

Hittite

Sanskrit

Ancient Greek

Latin

witen-, wātar

udan

ύδατ-, ύδωρ

unda

*wódr̥, *wéd̥n̥-, *wédōr

*watōr, *watiniz, *watini

*watar

wæter

watar

waʒʒar

['wɔ:tə]

['ʊaɪtər]

['vasə]

water

water

Wasser

watō, watins,
watin

vatn

['vǎt̪:ɛn̪]

['ʊɐ̯ɐ̯n̪]

['ʊænʔ]

vatten

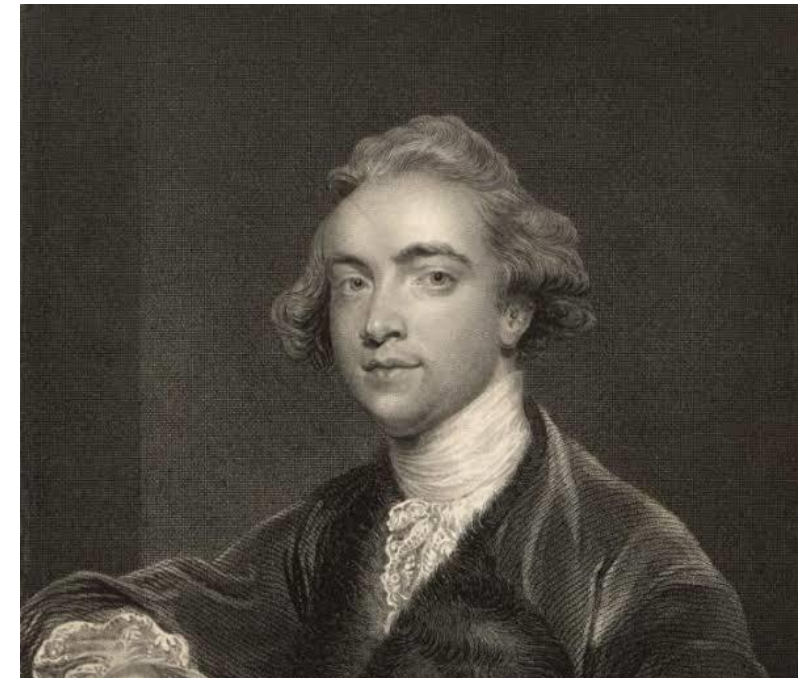
vatn

vand

Systematic sound change in cognates

- Regular sound change is **systematic**
 - *Ausnahmslosigkeit der Lautgesetze* (Junggrammatiker)
- This results in **regular correspondences between related languages.**
- **Loans** vs. **cognates**

heart	hart	ἡνῆρτων
hert	Herz	καρδία
PGmc. *hertan	cœur	হিয়া
PIE *kērd-, *kṛd-		



Cognates vs. shared loans

- Cognates vs. similarities of form/meaning

sterben 'die' ~ *starve*

Kopf 'head' ~ *cup*

übel 'bad, ill' ~ *evil*

Computer ~ *computer*

Hotel ~ *hotel*

Panda ~ *panda*

- Systematic differences/correspondences
 - Result from regular sound change
 - Can be obscured by other processes
- NOT just an overlap in form and meaning

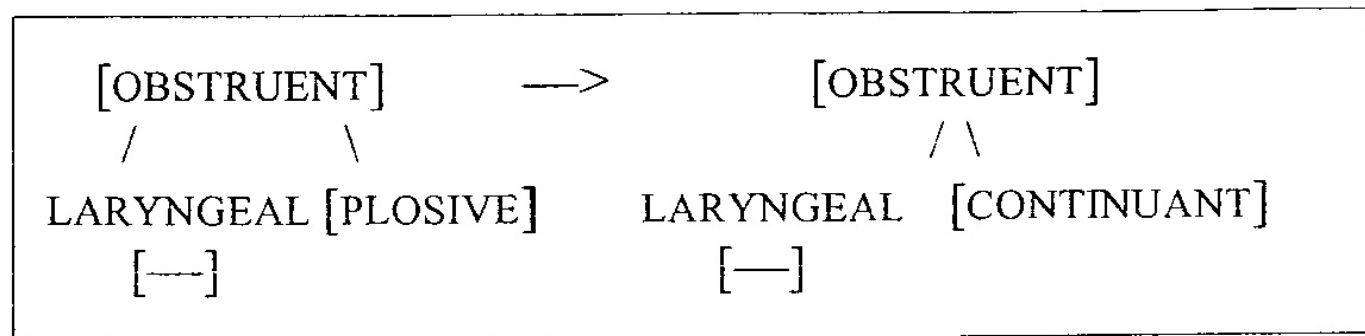
IE	Greek	Latin	Sansk.	O.C. Slav.	OHG	OE	Gothic
*p	poús	pēs	pad-, pāda	pěšǫ	fuoꝛ	fōt	fōtus
	patér	pater	pitár		fater	fæðer	fadar
*t	treis	trēs	trayas		drī	þrī	þreis
	tú	tū	tu-		dū	þū	þu
*k	kúon	canis			hunt	hund	hunds
	èkatón	centun	satem		hunt	hund	hund
		pecu			fihu	feoh	faíhu

Note how the High German Consonant Shift obscures the earlier rule in OHG

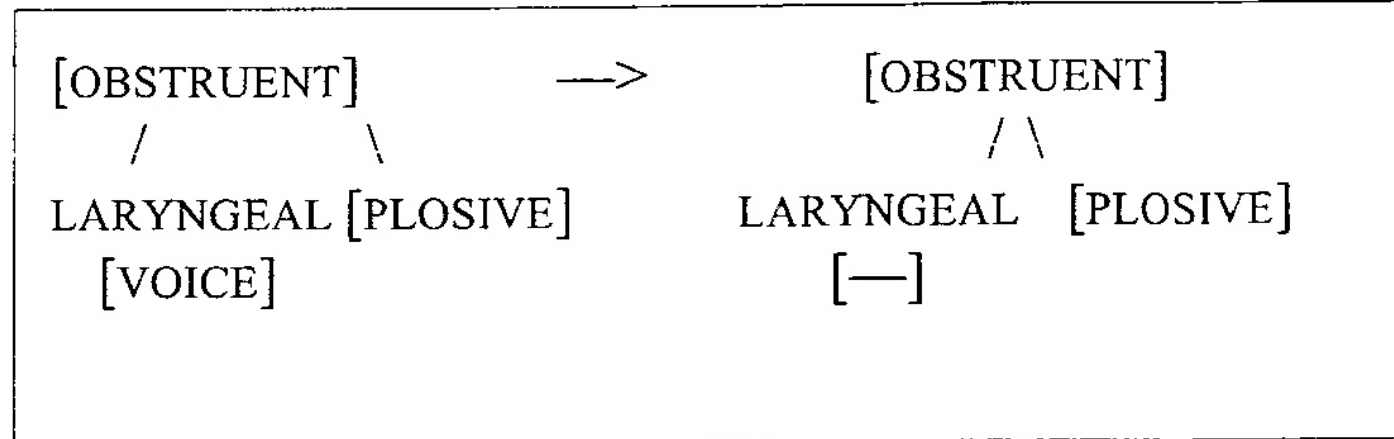
IE	Greek	Latin	Sansk.	O.C. Slav.	OHG	OE	Gothic
*b	bel-tiōn 'better'		balam 'strong'				þaida
				slabŭ	slāfan	slæpan	slēpan
*d	déka	decem	daśa		zehan	tien	taíhun
	édō	edō			ezzan	etan	itan
	pod-	ped-			fuoꝛ	fōt	fōtus
*g		gelu			kalt	ceald	kalds
	genu	genu	jānu		knio	cnēo	kniu

IE *b ^h , *d ^h , *g ^h					
Greek	Latin	Sanskrit	OHG	OE	Gothic
phráter	frāter	bhrata	bruoder	brōþor	brōþar
phéron	ferō	bhar-	beran	beran	beran
		duhita	tohter	dohtor	daúhtar
		ni-dāghas	tag	dæg	dags
		*ni-dhāghas			
e-thēka-		dhā- 'to set'	toun	dōn	—
		bandhanam	bintan	bindan	bindan
		ni-dāghas	tag	dæg	dags
hosti	hostis		gast	giest	gast

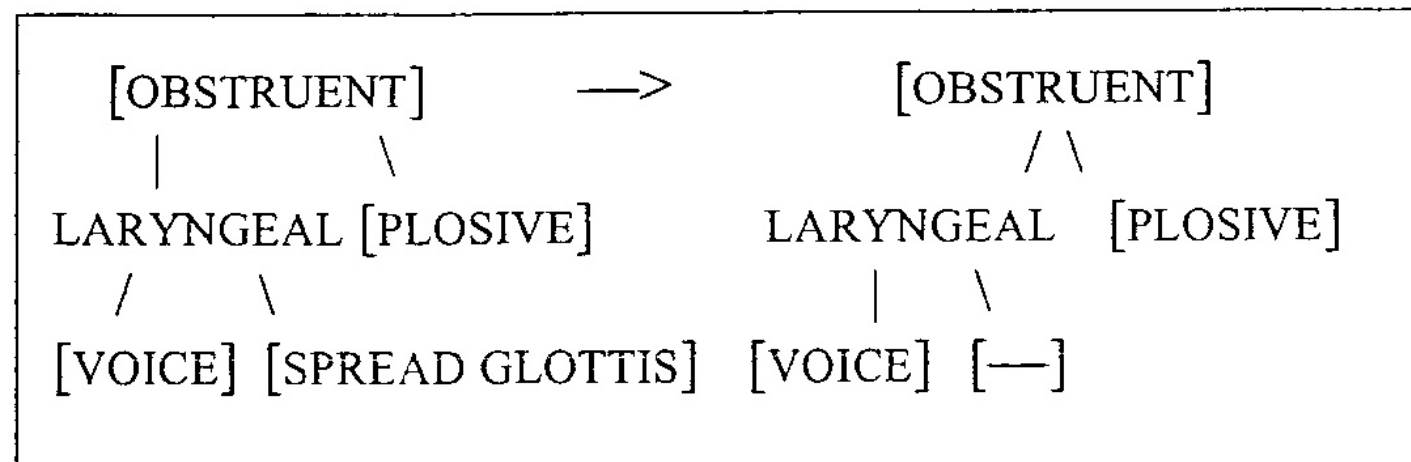
i. Voiceless stops become fricatives



ii. Voiced stops become voiceless



iii. Voiced aspirated stops lose aspiration



Ordering has to be i > ii > iii

Changes to the Proto-Germanic Phonological system

PIE	p	t	k	b	d	g	b ^h	d ^h	g ^h	s
OBSTRUENT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PLOSIVE	✓	✓	✓	✓	✓	✓	✓	✓	✓	
VOICE				✓	✓	✓	✓	✓	✓	
SPREAD GLOTTIS							✓	✓	✓	
CONTINUANT										✓

PGmc phonemes

p	t	k
b	d	g
f	θ	x
	s	

Proto-Germanic	p	t	k	b	d	g	f	θ	x	s	β	ð	ɣ
OBSTRUENT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PLOSIVE	✓	✓	✓	✓	✓	✓	✓						
VOICE				✓	✓	✓					✓	✓	✓
SPREAD GLOTTIS													
CONTINUANT							✓	✓	✓	✓	✓	✓	✓

Exceptions to Grimm's Law

Sometimes when you expect [f θ x s] we “unexpectedly” find [v ð γ z]...

c.f. Sanskrit pitár > *father* [faðer] - why not [faθer]?

Verner's Law

Voiceless fricatives become voiced when the preceding vowel does not bear main stress.

[OBS, CONT] → [VOICE] / V __ (V) 'V

Ablaut “Strong” Verbs

In Germanic the stress alternation, clearest in verbs, was as follows:

Infinitive	1/3 Past SG	Past PL	Past Participle
'V C V	'V C V	V C 'V	V C 'V

A large number of verbs showed the following pattern after Grimm’s Law

Infinitive	1/3 Past SG	Past PL	Past Participle
'V f V	'V f V	V v 'V	V v 'V
'V θ V	'V θ V	V ð 'V	V ð 'V
'V s V	'V s V	V z 'V	V z 'V
'V x V	'V x V	V ȝ 'V	V ȝ 'V

Verner's Law

	Inf	Past Sg	Past Pl	Past Part
IE	'dewkono	'dowke	dw'kn̥t	dw'kono
PGmc I (1 st SS)	'tewxana	'tawxe	tu'xunþ	tu'xana
PGmc II (VL)	'tewxana	'tawxe	tu'yunþ	tu'yana
PGmc II (Stress shift)	'tewxana	'tawxe	'tu'yunþ	'tu'yana

IE *sneyt- ‘cut’

PGmc. /ð/ → WGmc. /d/ → OHG /t/

	INF	3SG.PRET	3PL.PRET	PST.PTCP
IE	'-t-	'-t-	-t-'	-t-'
PGmc I	*'snī p an	*'snaī p	*snī' p um	*snī p a'naz
PGmc II (VL)	*'snī p an	*'snaī p	*snī' ð um	*snī ð a'naz
PGmc III (SS)	*'snī p an	*'snaī p	*'snī ð um	*'snī ð anaz
Pre-OHG	*snī p an	*snei p	*snī t um	*gisnī t an
OHG	snī d an	snei d	snī t um	gisnī t an
MHG	snī d en	snei t	snī t en	gisnī t en
NHG	schneiden	schnitt	schnitten	geschnitten
	/snī:dən/	/snei̯t/	/snītən/	/gəsni̯tən/
	→ [ʃn a i̯dən]	[ʃn i t]	[ʃni̯ t ən]	[gəʃni̯ t ən]

IE *sneyt- ‘cut’

Cf. English *snithe* (dial.)

OE *snīðan*

Gothic *SNĒIψAN* [sni:θan]

ON *snīða*

	INF	3SG.PRET		
IE	'-t-	'-t-	-t-'	-t-'
PGmc I	*'snī þ an	*'sna iþ	*snī' þ um	*snī þ a'naz
PGmc II (VL)	*'snī þ an	*'sna iþ	*snī' ð um	*snī ð a'naz
PGmc III (SS)	*'snī þ an	*'sna iþ	*'snī ð um	*'snī ð anaz
Pre-OHG	*'snī þ an	*sne iþ	*sn i tum	*gisn i tan
OHG	snī d an	snei d	sn i tum	gisn i tan
MHG	sn i den	snei t	sn i ten	gesn i ten
NHG	schneiden	schnitt	schnitten	geschnitten
	/sni:dən/	/sneɪt/	/snɪtən/	/gəsni:tən/
	→ [ʃn a ɪdən]	[ʃn i t]	[ʃnɪtən]	[gəʃnɪtən]

Paradigmatic levelling

	INF	3SG.PRET	3PL.PRET	PST.PTCP
IE	'-s-	'-s-	-s-'	-s-'
PGmc I	*fra'leu s an	*fra'lau s	*fralu' s un	*fralu s a'naz
PGmc II (VL)	*fra'leu s an	*fra'lau s	*fralu' z un	*fralu z a'naz
PGmc III (SS)	*fra'leu s an	*fra'lau s	*fra'lu z un	*fra'lu z anaz
WGmc (R)	*fraleu s an	*fra'lau s	*fralu r un	*fralo r an
OHG	firlio s an	firlō s	firlu r un	firlo r an
MHG	verlie s en	verlō s	verlu r n	verlo r n
NHG	verlie r en	verlo r	verlo r en	verlo r en
	/fərli _ɪ çən/	/fərlo _ɪ ç/	/fərlu _ɪ (:)rən/	/fərlo _ɪ (:)rən/
	→ [fə'l _ɪ çən]	[fə'l _ɪ ç]	[fə'l _ɪ (:)ən]	[fə'l _ɪ (:)ən]

Paradigmatic levelling

	INF	3SG.PRET		
IE	' -s-	' -s-		
PGmc I	*fra'leu s an	*fra'lau s		
PGmc II (VL)	*fra'leu s an	*fra'lau s	*fralu' z un	*fralu z a'naz
PGmc III (SS)	*fra'leu s an	*fra'lau s	*fra'lu z un	*fra'lu z anaz
WGmc (R)	*fraleu s an	*fra'lau s	*fralu r un	*fralo r an
OHG	firlio s an	firlō s	firlu r un	firlo r an
MHG	verlie s en	verlō s	verlu r n	verlo r n
NHG	verlie r en	verlor r	verlo r en	verlo r en
	/fərli _ɪ çən/	/fərlo _ɔ ç/	/fərlu _ɪ (:)rən/	/fərlo _ɔ (:)rən/
	→ [fə'l _ɪ çən]	[fə'l _ɔ ç]	[fə'l _ɔ (:)ən]	[fə'l _ɔ (:)ən]

NHG *verlie**r**en ~ verlor**r***
BUT: *Verlies**s**, Verlust**s***

cf. NE *lose**s** ~ lost**s***
BUT: *forlor**r**n, lovelor**r**n*

Umlaut

Vowel mutation which occurred synchronically in OHG and OE

A fronting (& *raising*) of back vowels before /i/ or /j/

/a,ɔ,u,aɪ,oɪ,uɪ,uə,ou/ → /e,æ,œ,ʏ,æɪ,øɪ,yɪ,yə,øʏ/

‘Primärumlaut’ = /a/ → /e/

‘Sekundärumlaut’

Either **only** /a/ → /æ/

Or /a/ → /æ/ **and** /o,u,uə,ou/ → /ø,y,yə,øʏ/

Umlaut

Originally coined by Klopstock

First used in its modern sense by Grimm ([1819]/1880), contrasting with *Ablaut*.

‘keine sprache, die sich des umlauts in solcher masse bedient hätte, wie die hochdeutsche’ (Grimm [1819]/1880: 193)

But OE actually featured phonological umlaut in many more contexts and even demonstrates earlier evidence (cf. Booth & Lahiri 2024).

OE *mȳs* < Gmc. **mūsiz* ‘mice’

Grimm only discusses *Primärumlaut*

Umlaut

OE	NE	NE Vowel	NHG	NHG Vowel
brȳd	bride	ʌI	Braut	au
fȳst	fist	I	Faust	au
flyht	flight	ʌI	Flucht	u
hȳd	hide	ʌI	Haut	au

OE	NE	NE Vowel	NHG	NHG Vowel
cyn(n)	kin	I	†Künne	y
hrycg	ridge	I	Rücken	y
mycg	midge	I	Mücke	y
syn(n)	sin	I	Sünde	y

Umlaut

Origins in a purely allophonic process:

Stem vowel fronted in the presence of a high front vowel /i/ or glide /j/ in the following syllable.

[DORSAL] vowels /a,o,u/ → [CORONAL] /e,ø,y/

Historically, these [HIGH, CORONAL] segments had a range of sources, e.g.

- stems of *i*-declension nouns (e.g. NHG *Tür* 'door' < OHG *turi*),
- /-j-/ 'stem extensions' added to the stem of certain classes of nouns

Gothic had no umlaut

a-stem nouns formed the largest class and did not exhibit umlaut

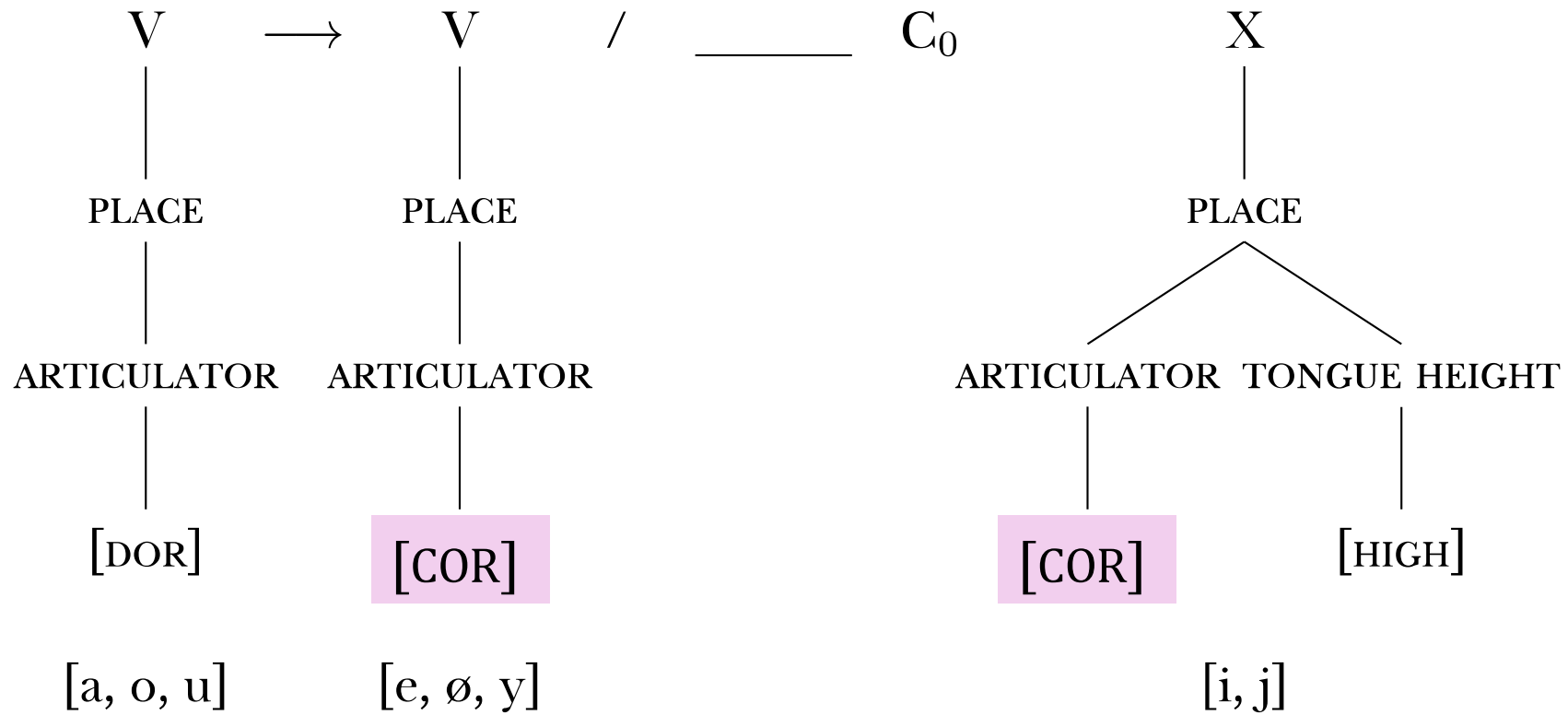
Umlaut

	WGmc.				EGmc.		
	OE		OHG		Gothic		NE
	SG	PL	SG	PL	SG	PL	
<i>a-/o-</i> declension	stān	stānas	stein	steina	stáins	stáinōs	<i>stone</i>
	wund	wunde	wunta	wunta	wunds	wundōs	<i>wound</i>
NO UML	hund	hundas	hunt	hunta	hunds	hundōs	<i>hound</i>
<i>i-</i> declension	hȳd	hȳde	hūt	h[y:]ti	*hūps	*hūpeis	<i>hide</i>
ALTERNATION	hype	hype/as	huf(f)	h[y]ffi	hups	hupeis	<i>hip</i>
	stede	stede/as	stat	steti	staps	stapeis	<i>stead</i>
<i>-j-</i> stem extension	bed(d)	bed(d)	beti	beti	badi	badja	<i>bed</i>
	cyn(n)	cyn(n)	ch[y]nni	ch[y]nni	kuni	kunja	<i>kin</i>
ALL UML	þyrstan		th[y]rsten		þ[ɔ]rsjan		<i>to thirst</i>

Umlaut

	j	i	u	y	o	ø	a	æ	e
VOCALIC		✓	✓	✓	✓	✓	✓	✓	✓
CONSONANTAL	✓								
SONORANT	✓	✓	✓	✓	✓	✓	✓	✓	✓
LABIAL			✓	✓	✓	✓			
CORONAL	✓	✓		✓		✓		✓	✓
DORSAL			✓		✓		✓		
HIGH	✓	✓	✓	✓					
LOW							✓	✓	

Umlaut



Umlaut

- Ultimately, the [HIGH, CORONAL] segments which caused umlaut were lost [*Nebensilbenabschwächung*!]
- No longer recoverable → productive phonological process impossible
- Learners no longer had unambiguous evidence for the earlier rule
- Forced to account for the effects of the—now-historical—process within the synchronic system
 - Once the evidence for these underlying forms disappears, reanalysis occurs

Umlaut

Either reanalyse the umlauted vowels as **underlying** (as in English)

[LAB, DOR] → [LAB, COR]

Or reanalyse as a **morphological marker**

Umlaut

- If there is an alternation, reanalysis of the underlying stem vowel is not an option
- Umlaut reanalysed as morphological & becomes one of the most important markers of plurality in German (see Plank & Lahiri 2015: 12ff.)
- There is even some evidence that it was already morphologised in OHG (cf. Braune & Heidemanns 2023)
- Even extended to words which never historically had umlaut
e.g. *Dorf~Dörfer, Wort~Wörter, Topf~Töpfe*

Umlaut

OHG: only *Primärumlaut* represented in writing

/a > e/, e.g. *betti* ‘bed’ (cf. Gothic *badi*)

Were there two or more periods of umlauting?

e.g. Wright (1906: 14); see also Kauffmann (1890)

Or was it just not represented in writing?

e.g. Behagel (1901); Twaddell (1938)

Grimm ([1819]/1880) only discusses *Primärumlaut*

Umlaut

Twadell:

- Whilst it was **allophonic**, it wasn't spelt
- Once it became **phonemicised**, scribes began to represent it
OHG *dunni* [dynni] > MHG *dünne* [dynnə] > NHG *dünn* [dyn]; cf. NE *thin* [θɪn]
- The exception, ⟨e⟩ for umlauted /a/, is due to its phonetic similarity to an existing phoneme

Umlaut

OHG: Fully active

300–400 years earlier than it appears in writing, in early (Pre-?)OHG

Umlaut of /u/ was first represented later, around 1000 (during OHG period)

Umlaut of /o/ was not really written in OHG

MHG: Orthographic representation remains inconsistent

Umlaut of /u, o, uə/ rarely marked in manuscripts

Sekundärumlaut of /a/ is only found from early MHG

e.g. <mahti>~<mehti> ‘strength.NOM/ACC.PL’.

See Braune & Heidermanns 2023: 83ff.; Jones & Jones 2019: 44; Braune & Eggers 1987: 54; Moser 1969: 114; see also Twaddell 1938; Penzl 1949