Middle High German: Morphology II

Joshua Booth

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

Language & Brain Laboratory

Faculty of Linguistics, Philology & Phonetics

University of Oxford

Phonological erosion

A—not tremendously helpful—metaphor stemming from the field of geology (very influential in the C19th across the humanities)

Not a special mechanism of change—general phonological change

May have diachronic *consequences*

Refers to phonological reduction or lenition ('weakening')

Phonological reduction / lenition

A—not tremendously helpful—metaphor stemming from the field of geology (very influential in the C19th across the humanities)

Not a special mechanism of change—general phonological change

May have diachronic *consequences*

Refers to phonological reduction or lenition ('weakening')

- Segmental weakening or—at most extreme—total loss (→ ∅)
- Loss of prosodic features/structures/constituents (stress, tone, syllables)
- Loss of phonological autonomy (can lead to assimilation, cliticisation)

Phonological reduction / lenition

A—not tremendously helpful—metaphor stemming from the field of geology (very influential in the C19th across the humanities)

Not a special mechanism of change—general phonological change

May have diachronic *consequences*

Possible weakening / reduction processes:

Voicing > affrication (e.g. /t/ > /t͡s/) > spirantisation (e.g. /k^{h}/ > /x/) / gliding (e.g. /g/ > /j/) > vocalisation (e.g. /l/ > /o/) > deletion

Debuccalisation (losing place features), e.g. /s/ > /h/

Vowel reduction, e.g. /i/ > /ə/

Shortening, i.e. V: → V or degemination

Rhotacism, e.g. /z/ > /r/

Flapping, e.g. /t/ > /ɾ/

Phonological reduction

The effect of the reduction of unstressed syllables on nominal inflexion, followed by analogical levelling in the transition to NHG

		OHG	MHG	NHG
SG	NOM/ACC	ēra	êre	Ehre
	GEN	ēra, -u, -o	êre	Ehre
	DAT	ēru, -o	êre	Ehre
PL	NOM/ACC	ērā	êre	Ehren
	GEN	ērōno	êren	Ehren
	DAT	ērōm, -ōn, -on	êren	Ehren

Syncretism

Essentially the product of morphological merger

Situation (*not process!*) where functionally distinct word forms are identical in form

> i.e. multiple cells in a paradigm have exactly the same form

This *may be* the result of historical changes (due to regular sound change, phonological erosion or analogy)

Can also describe a situation where there was never any distinction in the first place

Syncretism

NHG nominal inflexion is mostly restricted to number marking (except for GEN.SG.M/N and DAT.PL)

	OHG		MHG		NHG	
	SG	PL	SG	PL	SG	PL
NOM	tag	tagā, -a	tac	tage	Tag	Tage
ACC	tag	tagā, -a	tac	tage	Tag	Tage
GEN	tages, -as	tago	tages	tage	Tag(e)s	Tage
DAT	tage, -a	tagum, -om; -un, -on	tage	tagen	Tag*(e)*	Tagen
INSTR	tagu, -o					

☞ Can often lead to analogical change

Extreme syncretism: MHG weak verbs

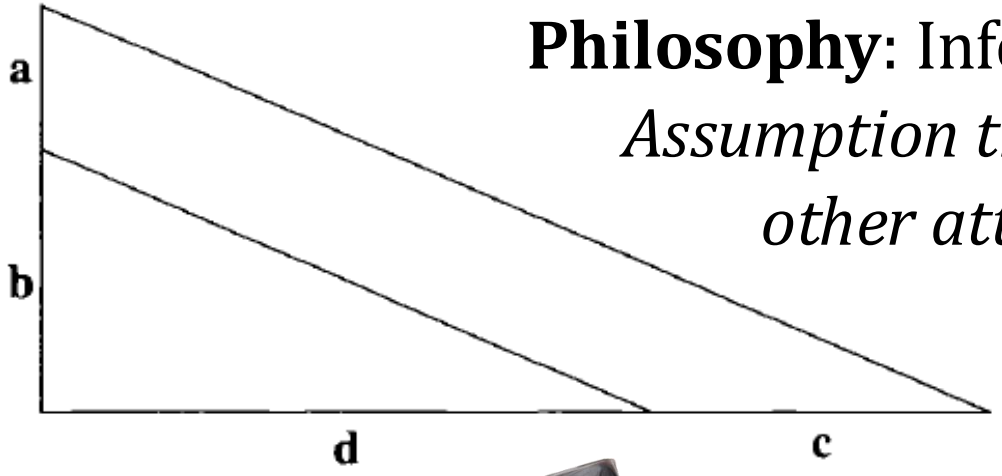
The indicative and subjunctive forms of weak verbs are identical in both the present and the preterite tense, as with the *-jan* verb *brennen* 'burn':

			INDICATIVE	SUBJUNCTIVE
PRESENT	SG	1	brenne	brenne
		2	brennest	brennest
		3	brennet	brennet
	PL	1	brennen	brennen
		2	brennet	brennet
		3	brennent	brennent
PRETERITE	SG	1	brante	brante
		2	brantest	brantest
		3	brante	brante
	PL	1	branten	branten
		2	brantet	brantet
		3	branten	branten

What do we find instead in NHG?

Analogy

Mathematics: Similarity in proportional relationships, e.g. *a* is to *b* as *c* is to *d*



Philosophy: Inferential reasoning from parallel cases

Assumption that if things share similar attributes, their other attributes must also be similar

Plato: Functional analogy, e.g. *a* is to *b* as *c* is to *d*

Good makes Knowledge possible in the intelligible world just as the Sun makes Vision possible in the perceptual world

Natural history: Resemblance of form & function in organs with different origins (in different species)

cf. Lahiri (2000)

Analogy

For early grammarians, analogy referred to regular correspondences within paradigms (*not sound change*)

> *Words can be classified in terms of similarities/differences in inflexion → Regularities = sets of proportions (analogy)*

The **Neogrammarians** are the first to introduce the concept of 'false analogy', accounting for exceptions to sound change.

☞ For the Neogrammarians, it was everything left over after sound change and borrowing were excluded

'Analogy' is often used to apply to a heterogeneous range of processes and can behave far more systematically than is often acknowledged

Analogy

Change whereby a similarity in meaning → a similarity in form (generally resulting in greater regularity)

Regular sound change (e.g. OSL / diphthongisation) ignores morphology → can introduce irregularity into paradigms

Analogy reinforces regularity / transparency, but is itself irregular and sporadic.

- ☞'Sturtevant's Paradox': Sound change is regular, but creates irregularity, whereas analogy is irregular, but creates regularity

Sturtevant's Paradox

	INF	3SG.PRET	3PL.PRET	PST.PTCP
IE	ˈ –s–	ˈ –s–	–s– ˈ	–s– ˈ
PGmc I	*fraˈleusan	*fraˈlaus	*fraluˈsun	*fralusaˈnaz
PGmc II (VL)	*fraˈleusan	*fraˈlaus	*fraluˈzun	*fraluzaˈnaz
PGmc III (SS)	*fraˈleusan	*fraˈlaus	*fraˈluzun	*fraˈluzanaz
WGmc (R)	*fraleusan	*fraˈlaus	*fralurun	*fraloran
OHG	firliosan	firlōs	firlurun	firloran
MHG	verliesen	verlôs	verlurn	verlorn
NHG	verlieren	verlor	verloren	verloren
	/fərliə̯ɕən/	/fərloːɕ/	/fərluːrən/	/fərloːrən/
→	[fɐˈliːɐ̯n]	[fɐˈloːɐ̯]	[fɐˈloːɐ̯n]	[fɐˈloːɐ̯n]

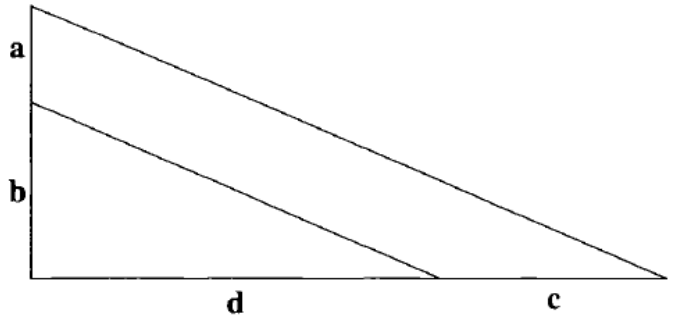
Sturtevant's Paradox

NHG *verlie**r**en ~ verlo**r***
BUT: *Verlie**s**, Verlu**s**t*

cf. NE *lo**s**e ~ lo**s**t*
BUT: *forlo**r**n, lovelo**r**n*

	INF	**3SG.PRET**		
IE	ˈ –s–	ˈ –s–		
PGmc I	*fraˈleu**s**an	*fraˈlau**s**		
PGmc II (VL)	*fraˈleu**s**an	*fraˈlau**s**	*fralu'**z**un	*fralu**z**aˈnaz
PGmc III (SS)	*fraˈleu**s**an	*fraˈlau**s**	*fraˈlu**z**un	*fraˈlu**z**anaz
WGmc (R)	*fraleu**s**an	*fraˈlau**s**	*fralu**r**un	*falo**r**an
OHG	firlio**s**an	firlō**s**	firlu**r**un	firlo**r**an
MHG	verlie**s**en	verlô**s**	verlu**r**n	verlo**r**n
NHG	verlie**r**en	verlo**r**	verlo**r**en	verlo**r**en
	/fərliə̯ɕən/	/fərloːɕ/	/fərlu(ː)rən/	/fərlo(ː)rən/
→	[fɐˈliːə̯n]	[fɐˈloːɐ̯]	[fɐˈloːɐ̯n]	[fɐˈloːɐ̯n]

Proportional analogy



Earlier work was based solely on **surface forms**

Emphasised almost exclusively forms of **proportional change**

☞ analogy works through equations based on surface forms

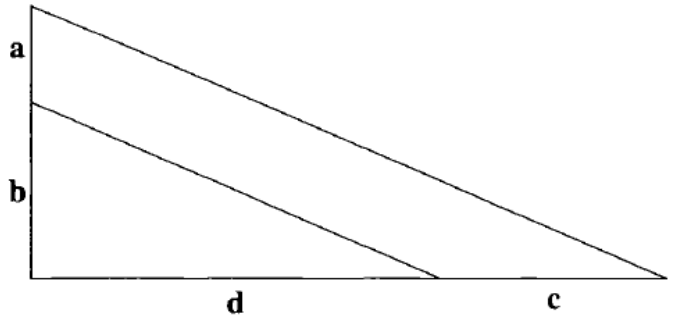
stone : *stone-s* :: *cow* : X; X = *cow-s* (as opposed to the earlier *cow*~*kine*)

Tag : *Tag-e* :: *Land* : X; X = *Land-e* (as opposed to the earlier *lant*~*lant*)

Problem how to constrain such proportional analogy

How do you limit which proportions are established?

Proportional analogy



Earlier work was based solely on **surface forms**

Emphasised almost exclusively forms of **proportional change**

☞ analogy works through equations based on surface forms

stone : *stone-s* :: *cow* : X; X = *cow-s* (as opposed to the earlier *cow*~*kine*)

Tag : *Tag-e* :: *Land* : X; X = *Land-e* (as opposed to the earlier *lant*~*lant*)

Ringe & Eska (2013: 152):

> [The proportional approach was] always empirically inadequate, because a substantial minority of morphological changes cannot be convincingly explained by proportions

It can miss important generalisations, e.g. the preservation of central contrasts like number in levelling.

Proportional analogy

For the paradigm of OE *fōt* ‘foot’, proposing a four-part analogy, e.g.

dōm : *dōme* :: *fōt* : X; X = *fōte*

can’t account for the levelling in the PL and fails to capture that levelling has generalised the stem vowel *ō* in the SG and *ē* in the PL:

Paradigm of *a*-nouns				Earlier Old English	Late Old English/ early Middle English
SG.NOM/ACC	dōm		SG.NOM/ACC	fōt	fōt
GEN	dōmes		GEN	fōtes	fōt
DAT	dōme		DAT	fēt	fōte
PL.NOM/ACC	dōmas		PL.NOM/ACC	fēt	fēt
GEN	dōma		GEN	fōta	fēte
DAT	dōmum		DAT	fōtum	fēten

Lahiri (2000: 7f.)

Proportional analogy

For the paradigm of OE *fōt* 'foot', proposing a four-part analogy, e.g.

dōm : *dōme* :: *fōt* : X; X = *fōte*

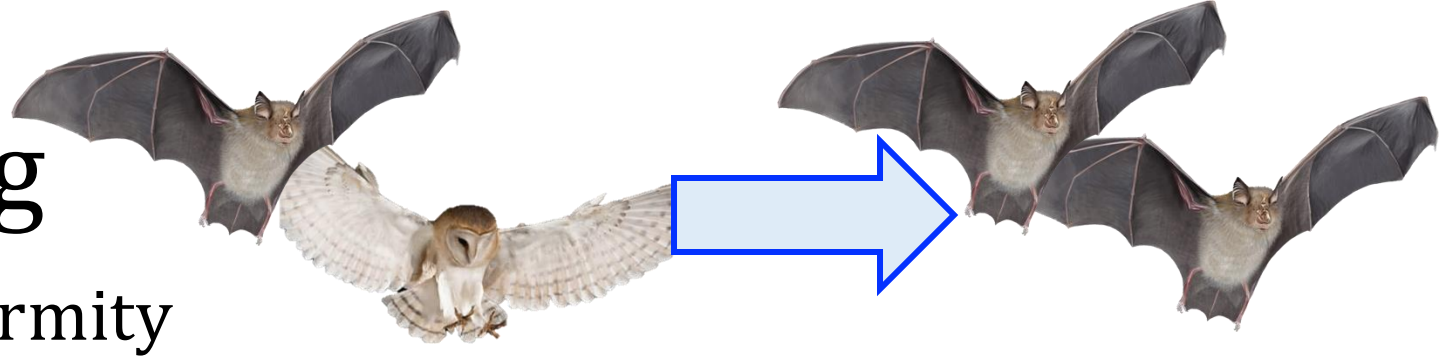
can't account for the levelling in the PL and fails to capture that levelling has generalised the stem vowel *ō* in the SG and *ē* in the PL:

Would also need analogy to neuter *a*-nouns, e.g. *word* : *worda* : : *fēt* : X; X = *fēta*

				Earlier Old English	Late Old English/ early Middle English
	GEN	dōmes	GEN	fōtes	fōt
	DAT	dōme	DAT	fēt	fōte
PL.NOM/ACC		dōmas	PL.NOM/ACC	fēt	fēt
	GEN	dōma	GEN	fōta	fēte
	DAT	dōmum	DAT	fōtum	fēten

Lahiri (2000: 7f.)

Analogical levelling



Increases paradigmatic uniformity
by reducing the number of a form's allomorphs (i.e. eradicating alternations)

Same meaning / function → same form

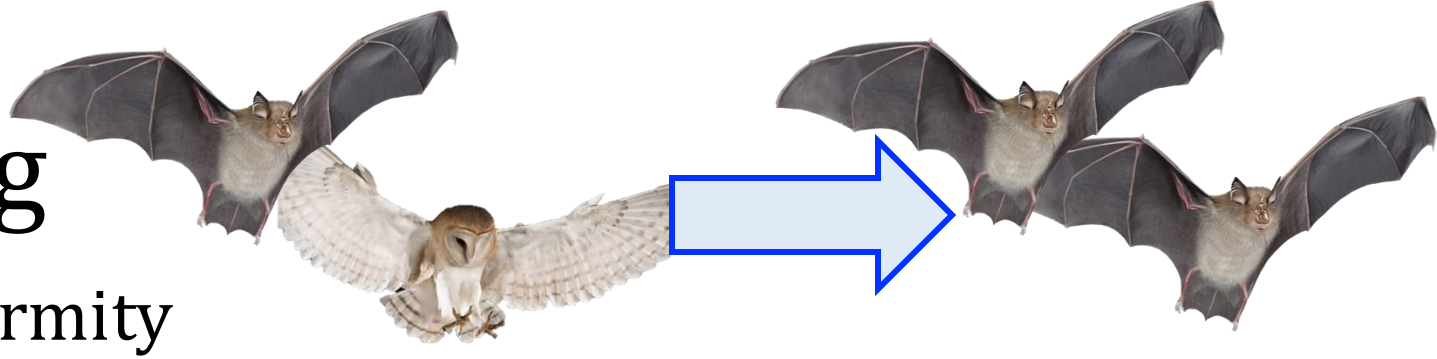
In Class II verbs, the stem vowel of the 3PL.PRES.INDIC has been levelled out to the SG.PRES forms

e.g. MHG *ich biuge, er biuget, wir biegen, sie biegent*

> *ich biege, er biegt, wir biegen, sie biegen*

	INFINITIVE	1SG.PRESENT	3SG.PRETERITE	3PL.PRETERITE	PAST PARTICIPLE
OHG	biogan	biugu	boug	bugum	gibogan
MHG	biegen	biuge	bouc	bugen	gebogen
NHG	biegen	biege	bog	bogen	gebogen

Analogical levelling



Increases paradigmatic uniformity
by reducing the number of a form's allomorphs (i.e. eradicating alternations)

Same meaning / function → same form

In Class II verbs, the stem vowel of the 3PL.PRES.INDIC has been levelled out to the SG.PRES forms

*Note the levelling of the PST.PTCP's stem vowel to the PRET forms (after OSL):
/gəbɔgən/ > /gəboːgən/

	INFINITIVE	1SG.PRESENT	3SG.PRETERITE	3PL.PRETERITE	PAST PARTICIPLE
OHG	biogan	biugu	boug	bugum	gibogan
MHG	biegen	biuge	bouc	bugen	gebogen
NHG	biegen	biege	bog	bogen	gebogen

Analogical levelling

Similarly, for Class III (with /ɛ/ in the infinitive), Class IV & Class V, the stem vowel of the indicative 1SG.PRES form has changed in analogy to the stem vowel of the infinitive and PL.PRES forms, e.g. *nemen* (NHG *nehmen*):

			OHG	MHG	NHG
PRESENT	SG	1	nimu	nime	nehme
		2	nimis, (-st)	nimest	nimmst
		3	nimit	nimet	nimmt
	PL	1	nememēs, (-ēm, -ēn)	nemen	nehmen
		2	nemet	nemet	nehm(e)t
		3	nemant	nement	nehmen

Analogical levelling

Note also that MHG often had a length alternation between the vowel of the 1/3SG.PRET and PL.PRET forms (inherited, not OSL).

In NHG, this has been levelled out in favour of the plural's V:

/nam~naːmen/ > /naːm~naːmen/

The long /eː/ of the INF and PL.PRES (which spread to the 1SG.PRES) ***is*** the result of OSL, however: /nɛ.mən/ > /neː.mən/.

	INFINITIVE	1SG.PRESENT	3SG.PRETERITE	3PL.PRETERITE	PAST PARTICIPLE
OHG	neman	nimu	nam	nāmum, (-un, -umēs)	ginoman
MHG	nemen	nime	nam	nâmen	genomen
NHG	nehmen	nehme	nahm	nahmen	genommen

Analogical extension

Extends an existing alternation to new contexts (forms which did not previously undergo the alternation)

> e.g. extension of umlaut to forms with no alternation historically: OHG *topf~topfe* 'pot.SG~PL' > NHG *Topf~Töpfe*

Campbell (2013: 95)

> From the point of view of the speaker, analogical levelling and extension may not be different, since in both the speaker is making different patterns in the language more like other patterns that exist in the language.

Analogical extension: UML

e.g. *houbit~houbit*, *wort~wort* (NHG *Haupt, Wort*)

Two stages:

OHG: Large class of neuter nouns with no overt marking in the plural (due to high vowel deletion; see last week's slides)

(i) HVD and UML became opaque and unrecoverable (due to reduction of unstressed syllables) → must have been a strong drive to mark the PL **overtly**

(ii) These words were analogically shifted into another class of *a*-stem nouns which ***did*** overtly mark the PL

Grammatical gender was crucial in the choice of class

Analogical extension: UML

English: Gender distinctions were lost, so there was no problem shifting them to the **large** class of **masculine** *a*-stems → *-as* PL suffix generalised (e.g. NE *heads*, *words*)

Gender irrelevant → Same declension class

German: Gender still central, so they were shifted to the minor class of **neuter** *os-/es*-stem nouns which *did* overtly mark the plural → -¨er generalised

Gender >> declension class → Same gender, change class

cf. Lahiri & Dresher (1984)

Analogical extension: UML

These nouns inserted OHG *-ir* (< PGmc. *-iz*) between the stem and PL affix, triggering UML, e.g. *lamb~lembir* > NHG *Lamm~Lämmer*

☞ Find NHG PL forms with umlaut where none existed in OHG:

e.g. *Haupt~Häupter, Wort~Wörter*

☞ Small class of words with two (semantically or functionally distinct) plurals: one with umlaut and one without: e.g. *Worte~Wörter* and *Lande~Länder*

cf. Kuryłowicz (1947), who argues that a complex, bipartite morpheme is preferable to a simple morpheme with the same function, particularly in relation to major morphological distinctions, such as number.

Models of analogy

☞ Does analogy have rules/tendencies?

Past attempts identify important trends, but they are far from exceptionless 'laws'

Kuryłowicz (1947)**:** Emphasis on proportional analogy

- Stresses tendency towards more overt marking & maximisation of contrasts

Mańczak (1978)**:** Prioritises the rival tendencies towards:

- (i) simplification
- (ii) regularisation of morphophonemic change

Attempts to address the issue of levelling, but his 'tendencies' are mainly just statistical observations.

Models of analogy

Significant issues remain, e.g. directionality.

How do two languages take equivalent inputs, e.g. Verner's law alternations and generalise in opposite directions?

OE cēozan, cēas, curon, (ge)coren	:	NE choose, chose, chosen
OHG kiosan, kōs, kurun, (gi)koran	:	NHG küren, kor, gekoren

Lahiri (2000)

Models of analogy

Significant issues remain, e.g. directionality.

How do two languages take equivalent inputs, e.g. Verner's law alternations and generalise in opposite directions?

A uniform directionality for analogy is difficult to find.

A problem with many approaches is the focus on surface forms rather than a change in grammar

☞ Can analogy be constrained or predicted?

Change takes place in acquisition (via reanalysis)

Change reflects a change in the grammar → constrained by the grammar

Models of analogy

Kiparsky: analogy is change in the grammar, constrained by the phonological system (in fact all levels of the grammar, incl. morphology)

Sound change & analogy still distinct, but both changes to the grammar

→ constrained by the grammar: *not just surface analogy*

Suggests the direction of analogy is towards formal simplification, via rule loss/reordering (preference for transparent interactions)

Need to consider grammar as a whole—not just morphology divorced from phonology

cf. Kiparsky (1965, 1982, 1988, 2000)

Models of analogy

Lahiri: There are universally privileged/highly-valued forms:

☞ NOM.SG of nouns or 3SG for verbs (in all languages with such categories)

May lead or constrain change

(as learners base their initial grammar on these forms)

Rules applying here will be more constant & any reanalysis would be maintained, *even if this prevents grammar simplification*

→ Analogy is constrained & directed by the phonological system of the learner

e.g. Latin, where the NOM.SG usually forms the pivot of transfer from one inflexional class to another

cf. Lahiri (1982, 2000)

Models of analogy

Lahiri: There are universally privileged/highly-valued forms:

☞ NOM.SG of nouns or 3SG for verbs (in all languages with such categories)

May lead or constrain change

(as learners base their initial grammar on these forms)

Rules applying here will be more constant & any reanalysis would be maintained, *even if this prevents grammar simplification*

→ Analogy is constrained & directed by the phonological system of the learner

pater : *patr-is* :: socer : X; X = *socr-is* (earlier *socer, socr-i*)

cf. *Lamm* : *Lämmer* :: *Wort* : X; X = *Wörter*

Land : X; X = *Länder*

cf. Lahiri (1982, 2000)

Models of analogy

The grammar as a whole must be taken into consideration (even if the change only involves a single item)

Various forms of analogy / reanalysis → not fundamentally different mechanisms of change, but rather all affect the system as a whole

e.g.

- Restructuring of the underlying form of a stem,
- Achieving a preferred metrical structure by lengthening vowels
- Reanalysing morphemes by fusing them closer to the stem rather than inflection

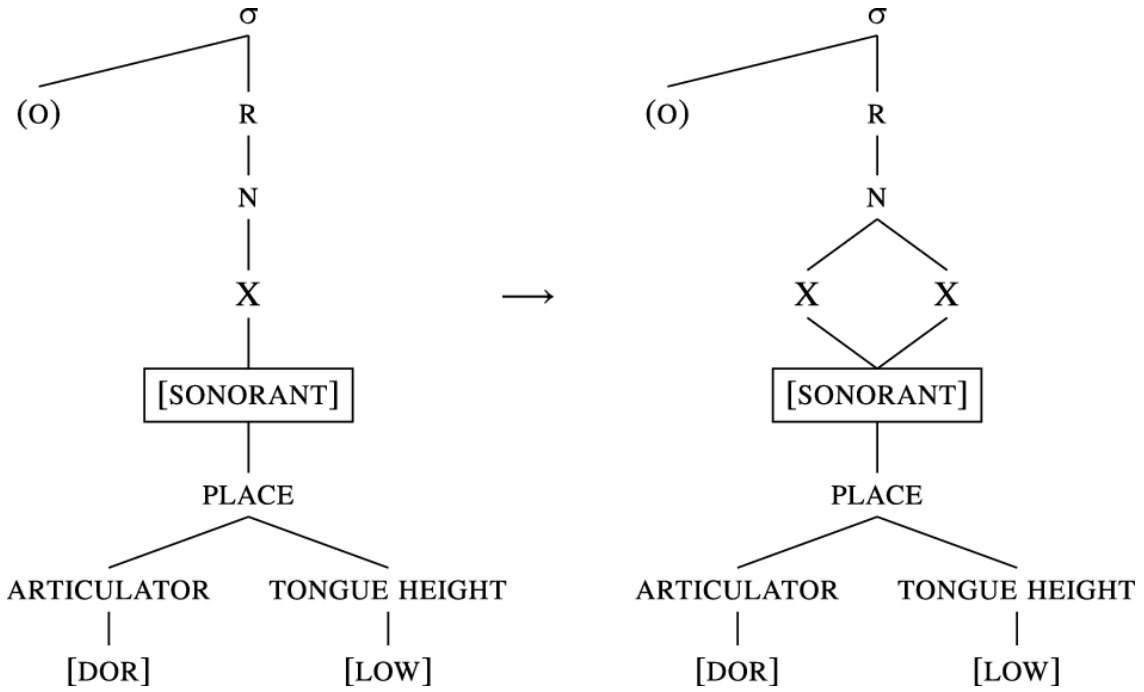
Recap: OSL

A prosodically motivated process which increased the uniformity of the weight of stressed syllables (cf. Prokosch 1939; Lahiri and Dresher 1999)

Lengthened stressed short vowels in open syllables

- MHG *tage* [ta.gə] > NHG *Tage* [taː.gə] ‘day-PL’

/a/ → /aː/



Recap: Diphthongisation & OSL

	V:[HIGH]			V)σ		
OHG	iː swiːn	i̯u/uː(...)i li̯uti/huːti	uː huːs	i bibar	y lugiː	u stuba
lOHG/ eMHG	iː swiːn	yː lyːtə/hyːtə	uː huːs	i bibər	y lugə	u stubə
lMHG/ eNHG	ei̯ swei̯n	øy̯ løy̯tə/høy̯tə	ou̯ hou̯s	iː biːbər	yː lyːgə	uː stuːbə
NHG	aɪ̯ ʃvaɪ̯n	ɔɪ̯ lɔɪ̯tə/hɔɪ̯tə	aʊ̯ haʊ̯s	iː *aɪ̯ biːbɐ *baɪ̯bɐ	yː *ɔɪ̯ lyːgə *lɔɪ̯gə	uː *aʊ̯ ʃtuːbə *ʃtaʊ̯bə
Gloss	‘swine, pig’	‘people’/‘hides’	‘house’	‘beaver’	‘lie’	‘room, parlour’

Booth (2023)

Recap: OSL

Led to alternations within paradigms

English & German have levelled these alternations

Only retained in Dutch (as a restricted class of alternating nouns):

- [dɑx]~[daːɣə] ‘day~day-PL’; [ɣɑf]~[ɣaːvən] (‘give-3SG.PRET’~‘give-3PL.PRET’)

☞ In every case, German has levelled in favour of the long vowel in the PL form of nouns

Why, if the NOM.SG form is meant to be the privileged form?

OSL

2ndSS blocked it much more often in G than E or D:

OHG	OE	NHG	Imst dialect	NE
offan	open	ɔfən	off	əʊpən
wazzar	water	vasɐ	βɔssər	wɔːtə

The 2ndSS also had the effect of creating many more closed syllables.

However, where there's no 2ndSS, the stem vowel is always long in NHG → Reanalysed in favour of the PL's V:

The key is the type of medial consonants which remained

cf. Lahiri & Dresher (1999)

OSL

After 2ndSS and subsequent changes, e.g. /p, k/ → /b, g/, medial Cs were invariably voiced

→ Alternations due to OSL were usually before voiced Cs

Vs are often lengthened before voiced Cs. Here, this phonetic length could be reanalysed as phonological (as in the PL)

→ OSL is reanalysed as lengthening before (underlying) voiced consonants

Ultimately, this leads to a reanalysis of the stem as underlyingly V:

Dresher (2000: 63)

> [T]here is no reason to propose a constraint favouring uniform vowel length in a paradigm—here, too, levelling is a by-product of something else, in this case, a reanalysis of the context of OSL

OSL

Aal	
Aar	
Aas	MHG âs
Ahm	
Ahn	
Air	
Ale	
Ar	
Art	
Arzt	
Baas	C17th < LG
Bad	
Baer	
Bahn	
Bar	
Bar	
Bark	
Barsch	
Bart	
Bauch	OHG *būh*
Baum	
Bausch	OHG *būsc*
Beat	C20th < English
Beet	C17th < *Bett*
Beil	
Bein	
Beiz	C19th < Rotwelsch CH
Bien	
Bier	
Biest	C16th < LG *bēst*
Blust	MHG *bluost* CH
Blut	OHG *bluot*
Boot	C15th < MLG *bōt*
Bor	
Bram	
Braut	OHG *brūt*
Brom	
Brot	OHG *brōt*
Bub	
Buch	OHG *buoh*

OSL

□	SG□	PL□
MHG□(pre-OSL)□	stap□	ˈstæ.bə□
□	ra t□	ˈræ ːtə□
MHG□(post-OSL)□	stap□	ˈstæː.bə□
□	ra t□	ˈræ ːtə□
NHG□	ʃtaːp□	ʃtɛ ːbə□
□	ʁa t□	ʁɛ ːte□

OSL

	INF	3SG.PRET	3PL.PRET	PST.PTCP
MHG (pre-OSL)	ˈsprɛx.xən	sprax	ˈspraː.xən	gəˈsprɔx.xən
	ˈgɛ.bən	gap	ˈgaː.bən	gəˈgɛ.bən
MHG (post-OSL)	ˈsprɛx.xən	sprax	ˈspraː.xən	gəˈsprɔx.xən
	ˈgeː.bən	gap	ˈgaː.bən	gəˈgeː.bən
NHG	ˈʃpʁɛçən	ʃpʁaːx	ˈʃpʁaː.xən	gəˈʃpʁɔχən
	ˈgeː.bən	gaːp	ˈgaː.bən	gəˈgeː.bən

Summary

The precise nature of analogical change remains controversial:

Surface-led or a change in the grammar?

However, analogy is not as fundamentally irregular as is often made out

Levelling and proportional analogy—whilst operating word by word and not necessarily predictable—do operate with a degree of systematicity

> Even though it took millennia, r/s alternation in English verbs has been eradicated everywhere but the verb to be (*was/were*)

Clear tendencies can also be determined (cf. Kuryłowicz and Mańczak)

However, these are by no means exceptionless and cannot resolve the issue of directionality

Analogical change is best seen as grammatical change: in acquisition, certain privileged categories may constrain or form the pivot of change

References

Campbell, Lyle. 2013. *Historical Linguistics: An introduction*. Edinburgh: Edinburgh University Press.

Dresher, B. Elan. 2000. 'Analogical levelling of vowel length in West Germanic', in A. Lahiri (ed.) *Analogy, Levelling, Markedness*, 47–70. Berlin: Mouton de Gruyter.

Kiparsky, Paul. 1965. *Phonological Change.* Thesis (PhD), MIT, Cambridge (MA).

—— 1982. *Explanation in Phonology.* Dordrecht: Foris.

—— 1988. 'Phonological Change', in F. Newmeyer (ed.) *Linguistics: The Cambridge Survey*. Volume I. *Linguistic Theory: Foundations.* Cambridge: Cambridge University Press.

—— 2000. 'Analogy as optimization: 'exceptions' to Sievers' Law in Gothic', in A. Lahiri (ed.) *Analogy, Levelling, Markedness*, 15–46. Berlin: Mouton de Gruyter.

Kuryłowicz, Jerzy. 1947. La nature des procès dits analogiques. *Acta Linguistica* 5: 15–37.

Lahiri, Aditi. 1982. *Theoretical Implications of Analogical Change: Evidence from Germanic Languages*. Thesis (PhD), Brown University, Providence (RI).

—— (ed.) 2000. *Analogy, Levelling, Markedness*. Berlin: Mouton de Gruyter.

Lahiri, Aditi & B. Elan Dresher. 1984. Diachronic and synchronic implications of declension shifts. *Linguistic Review* 3, 141–163. DOI: 10.1515/tlir.1983.3.2.141

References

—— 1999. Open Syllable Lengthening in West Germanic. *Language* 75, 678–719

Lahiri, Aditi & Frans Plank. 2010. Phonological phrasing in Germanic: The judgement of history, confirmed through experiment. *Transactions of the Philological Society* 108: 370–398.

—— 2022. 'Phonological phrasing: Approaches to grouping at lower levels of the prosodic hierarchy', in B. Elan Dresher & Harry van der Hulst (eds), *The Oxford History of Phonology*. Oxford: Oxford University Press. 134–162.

Mańczak, Witold. 1978. Les lois du développement analogique. *Linguistics* 205: 53–60.

Ringe, Donald A. & Eska, Joseph F. 2013. *Historical Linguistics: Toward a twenty-first century reintegration*. Cambridge: Cambridge University Press.