

An Introduction to Historical Phonology 3

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The contents of the session

1. Change and the grammar
2. Rule addition
3. Rule loss
4. Implications of rule loss
5. Where can you add a rule?

Modelling change in Rule-Based Phonology

The model that we have been assuming is the rule-based model of phonology (RBP), essentially as it is conceived in **Standard Generative Phonology**

- on this model, we need to consider changes in terms of their impact on the set of phonological rules which make up the phonological grammar of a speaker of a language
 - we have already seen that rules can be added to the grammar
- what exactly are the properties of the kinds of change as understood in this model?
 - are there other kinds of change envisioned in this model?

King (1969, 39) describes change in the rule component of phonology as **primary change** – this contrasts with **restructuring**, which involves an alteration to the URs of a language

- **restructuring** is what we have been calling **reanalysis** (also known as lexicalisation)
- in cases of King's 'primary change', historical phonological innovations do not alter the URs of a language; rather, the number, precise nature or ordering of rules changes
 - this does not mean that URs never change – they *can* change, in restructuring, but that is a different type of change, and is less common than was previously thought

'Primary change' is typically taken to involve:

- **rule addition** (there is debate 'where' a rule can be added, perhaps allowing for **rule insertion**)
- **rule loss**
- **rule reordering**
- **rule change** ('simplification'/'generalisation'/'contraction' – also a debated area)

On this course, we will only have time to consider in detail: **addition** and **loss**

A classical generative position on the question of 'where' change happens is: **in acquisition**

- for example: children might reinterpret performance errors as the outputs of a (variable) rule
- acquisition is also a plausible place to situate the restructuring of URs – a later generation might reinterpret the output of a rule as the UR
- but this is not the only possible interpretation of primary change in RBP; one of the foundational texts for this approach (Halle, 1962, 387) says:
 - "The language of the adult – and hence also the grammar that he has internalized – need not, however, remain static: it can and does, in fact, change. I conjecture that changes in later life are restricted to the addition or elimination of a few rules in the grammar, and that a wholesale restructuring of his grammar is beyond the capabilities of the average adult."

Rule addition

This is the most 'expected' type of phonological change in the RBP approach

- a new phonological rule is innovated into the grammar as part of the list of rules
- we have already seen a number of cases of this, such as the innovation of *i*-umlaut

An example from Dresher (2015) shows a number of cases of rule addition:

- a following set of changes are attested in the history of West Germanic **stressed low vowels** in **Mercian Old English** (exemplified in the Nom Sing and Plural of two words)

	changes	'hawk _{NS} '	'vats _{NP} '
(Early West Germanic)	ɑ	hɑ̃buc	fatas
Anglo-Frisian Brightening	æ	hæ̃buc	fætas
ɑ-Restoration	ɑ	hɑ̃fuc	fatas
Second Fronting	æ	hæ̃fuc	fætas

The symbols used in discussion of these vowels can be a little confusing

- the basic assumption is that these changes involve **frontings** and a **backing**
- thus '**Anglo-Frisian Brightening**' (AFB – also known as 'first fronting') fronted all relevant occurrences of a back vowel, which Dresher transcribes as '/ɑ/'
 - we use /ɑ/ (instead of Dresher's /ɑ/), as this is more in keeping with IPA practice

Lass (1994) describes the effect of the AFB on the OE vowel system thus:

Before AFB		After AFB	
i	u	i	u
e	o	e	o
	a	æ	

Dresher (2015) assumes that the AFB involved the *addition* of a rule:

- /a/ → [æ]
- once a rule has been added to a grammar, the question arises as to **how long it remains**

Dresher analyses the first stages of this thus:

Stage 1: before Anglo-Frisian Brightening

UR	/hɑ̃buc/	/fat/
SR	[hɑ̃buc]	[fat]

Stage 2: during Anglo-Frisian Brightening

UR	/hæ̃buc/	/fæt/	
A-F Brightening	hæ̃buc	fæt	= rule addition
SR	[hæ̃buc]	[fæt]	

Stage 3: after Anglo-Frisian Brightening

UR	/hæ̃buc/	/fæt/	= restructuring and rule loss
SR	[hæ̃buc]	[fæt]	

The assumption is that a new rule of AFB was formulated by speakers as part of their competence – in acquisition – so that cross-generational grammars differ, or (if Halle 1962 is right), by adults adding it at the end of their rule component

- /ɑ/ → [æ]
- as this rule/change is essentially ‘spontaneous’ – that is, it affected all relevant occurrences of the segment – it left **no alternations** or predictable distribution
 - this means that there would be **no evidence** for a later learner that the rule exists
 - the next generation of speakers would therefore assume that the URs are the same as the SRs that they hear evidence of
- this leads to a **reanalysis** on the part of this new generation
 - = **restructuring** of URs = AFB has been **lexicalised**

Stage 2: during Anglo-Frisian Brightening

UR	/hɑbuc/	/fat/	
A-F Brightening	hæbuc	fæt	= rule addition
SR	[hæbuc]	[fæt]	

Stage 3: after Anglo-Frisian Brightening

UR	/hæbuc/	/fæt/	= restructuring and rule loss
SR	[hæbuc]	[fæt]	

Dresher (2015) describes a second rule involved (‘*a*-Restoration’) like this:

- stressed /æ/ became [ɑ] when in front of a single consonant followed by a back vowel

$$\begin{array}{ccc} \text{æ} & \rightarrow & [+back] / \text{ ____ } C V \\ [+stressed] & & [+back] \end{array}$$

This rule was added during the history of OE, and because it was **conditioned**, not spontaneous, it created **alternations** in the paradigms of many words, such as *fæt* ‘vat’

- after the addition of *a*-Restoration, the stressed vowel appeared as [æ] in forms where no back vowel followed...
- ...and as [ɑ] where a back vowel followed
 - in such words it is clear that the stressed vowel is [æ] except in the specialized contexts where it is [ɑ], suggesting that the underlying vowel remains /æ/
 - since surface [ɑ] is derivable by the *a*-Restoration rule even in words where it does not alternate with [æ], as in *hafuc*, a plausible assumption is that such forms also retain underlying /æ/, as the rule is needed for alternating forms in any case
- in this way, the ‘change’ could persist in successive grammars as a synchronic rule
 - this assumes that the change creates conditions in which learners can still recover the underlying forms of the pre-sound change grammar

This gives the following stages (the change in the medial consonant in the word for 'hawk' is a separate development)...

Stage 3: before *a*-Restoration

UR	/fæt/	/fæt+um/	/hæfuc/	/hæfuc+e/
SR	[fæt]	[fætum]	[hæfuc]	[hæfuce]
(Gloss)	'vat _{NS} '	'vats _{DP} '	'hawk _{NS} '	'hawks _{GS} '

Stage 4: after *a*-Restoration

UR	/fæt/	/fæt+um/	/hæfuc/	/hæfuc+e/
<i>a</i> -Restoration	—	fatum	hafuc	hafuce
SR	[fæt]	[fatum]	[hafuc]	[hafuce]
(Gloss)	'vat _{NS} '	'vats _{DP} '	'hawk _{NS} '	'hawks _{GS} '

There is more to this story, which provides further evidence for the assumptions set out up till now – more later...

Rule Loss

Another type of 'primary' grammatical change recognised in RBP is **rule loss**

- in rule loss, a rule which **was** in the grammar of a language disappears from the system
 - if this happens, any effects which it had should also disappear
- [unless they had already resulted in change in the underlying representations – through restructuring]
- this can lead to big changes on the surface forms in a paradigm if a rule only applied in some forms of a paradigm

One famed example of rule loss involves the loss of final devoicing in Yiddish

- Yiddish is fundamentally derived from Middle High German (MHG), as is Modern German
- in early MHG, a rule of Final Obstruent Devoicing (FOD) was added to the language so that all final obstruents were devoiced; this can be understood as...
 - [+obstruent] → [–voiced] / _#

This gives the follow type of derivations:

UR	/tag/	/tag+əs/ (genitive)	'day' ~ 'day's'
FOD	tak	—	
SR	[tak]	[tagəs]	

The current SRs of German and Yiddish have different consonants, however (vowel differences are not relevant here)

Yiddish	German	
[tog] 'day'	[ta:k] ~ [ta:gəs]	'day' ~ 'day's'
[lid] 'song'	[li:t] ~ [li:dəs]	'song' ~ 'song's'

The claim is that Yiddish *lost* the rule of final devoicing

- if this happens, then the underlyingly voiced segments should resurface, as indeed happened – contemporary Yiddish has final voiced segments in these words

But... how can we be sure that Yiddish ever *had* FOD?

But... how can we be sure that Yiddish ever *had* FOD?

- notably, **some** contemporary Yiddish words, such as *avek* 'away', have voiceless final stops, even though they derive from forms which had voiced final stops in Old High German
- Gress-Wright (2010) shows that *avek* ultimately derives from Old High German *in weg* through Middle High German *enwēc* – the sequence *in weg* (which clearly had a final voiced segment) has been reanalysed as a new, unrelated word
- NB: *avek* is an adverb, and thus had **no inflected forms** which would cause the underlyingly voiced final segments to surface once FOD was added to the grammar
- this means that learners would have no evidence for an underlying final /g/ in the ancestor of *avek*, while FOD was active on forms which had alternations, so *avek* would have been lexicalised with underlying /k/ (in a **restructuring** of its UR) as soon as it was reanalysed as a separate word
- Modern German does not have a descendent of *enwēc*, but does keep the FOD alternation in the *weg* morpheme: *weg*~*weges* [vɛ:k]~[vɛ:gəs] 'way' ~ 'way's'
- Yiddish must have had FOD in its past, or the form would be ***aveg**

The analysis of this whole situation in the RBP framework is as follows:

Before final devoicing: Old High German

UR	/tag/	/tag+əs/	/in+veg/
SR	[tag]	[tagəs]	[inveg]

The analysis of this whole situation in the RBP framework is as follows:

Before final devoicing: Old High German

UR	/tag/	/tag+əs/	/in+veg/
SR	[tag]	[tagəs]	[inveg]

A rule of FOD is then added to the grammar: Middle High German

UR	/tag/	/tag+əs/	/in+veg/
FOD	tak	—	invek
SR	[tak]	[tagəs]	[invek]

The analysis of this whole situation in the RBP framework is as follows:

Before final devoicing: Old High German

UR	/tag/	/tag+əs/	/in+veg/
SR	[tag]	[tagəs]	[inveg]

A rule of FOD is then added to the grammar: Middle High German

UR	/tag/	/tag+əs/	/in+veg/
FOD	tak	—	invek
SR	[tak]	[tagəs]	[invek]

Later generation of Yiddish speakers: restructuring of *avek*

UR	/tag/	/tag+əs/	/avek/
FOD	tak	—	—
SR	[tak]	[tagəs]	[avek]

The analysis of this whole situation in the RBP framework is as follows:

Before final devoicing: Old High German

UR	/tag/	/tag+əs/	/in+veg/
SR	[tag]	[tagəs]	[inveg]

A rule of FOD is then added to the grammar: Middle High German

UR	/tag/	/tag+əs/	/in+veg/
FOD	tak	—	invek
SR	[tak]	[tagəs]	[invek]

Later generation of Yiddish speakers: restructuring of *avek*

UR	/tag/	/tag+əs/	/avek/
FOD	tak	—	—
SR	[tak]	[tagəs]	[avek]

Rule loss in Yiddish (assuming a > o in *tog* occurred later)

UR	/tag/	/tag+əs/	/avek/
FOD	LOST		
SR	[tag]	[tagəs]	[avek]

This case of rule loss does **not** involve reanalysis of underlying forms

- the underlying forms 'resurface' after the rule is lost

In an RBP-type framework this issue thus arises: **why might a rule be lost?**

- attempts to answer the question typically centre around the notion of opacity:
 - other changes may make a rule opaque
 - with the assumption that **opaque rules are likely to be lost**

King (1980) and Gress-Wright (2010) explain this for the Yiddish case:

- starting in the 15th century, there is evidence of **apocope of final vowels** in Yiddish
- apocope was fundamentally regular, affecting all final schwas in particular environments
- the result of apocope was that inflectional paradigms that had been partly or wholly designated by final schwa were substantially re-analysed

The Middle High German paradigms (and hence ancestors of both Modern German and of Yiddish) for /tag/ 'day' before and after apocope would be as follows (from King 1980)

Pre-apocope /tag/ 'day'

	Singular	Plural
Nom	tak	tagə
Acc	tak	tagə
Gen	tagəs	tagə
Dat	tagə	tagən

Post-apocope /tag/ 'day'

	Singular	Plural
Nom	tak	tag
Acc	tak	tag
Gen	tagəs	tag
Dat	tag	tagən

King's analysis is that this situation led to the eventual loss of the devoicing rule because it had become opaque

- Kiparsky (1971) had argued that opaque rule orderings are **marked** and are hence likely to be lost in phonological change
- apocope had led to a **marked grammar**

When apocope occurred, it was added to the grammar, after FOD in the derivation:

After FOD had been added to the grammar

UR	/tag/	/tag+ə/	'day' ~ 'days' (Nom)
FOD	tak	—	
SR	[tak]	[tagə]	

After Apocope had been added to the grammar

UR	/tag/	/tag+ə/	
FOD	tak	—	
Apocope	—	tag	forms like this mean that FOD is not surface-true
SR	[tak]	[tag]	

Rule loss in Yiddish (assuming a > o in *tog* occurred later)

UR	/tag/	/tag+ə/	
FOD	LOST		the opacity is lost from the grammar when FOD is lost
Apocope	—	tag	
SR	[tag]	[tag]	

Is opacity always involved in rule loss?

Dresher (e.g., 2015) argues that the history of Mercian shows a case where a non-opaque rule is lost; recall the history of Mercian OE low vowels:

	changes	'hawk _{NS} '	'vats _{NP} '
(Early West Germanic)	ɑ	hɑbuc	fatas
Anglo-Frisian Brightening	æ	hæbuc	fætas
a-Restoration	ɑ	hafuc	fatas
Second Fronting	æ	hæfuc	fætas

Dresher (2015) argues that 'Second Fronting' is actually the effect of **rule loss**, rather than rule addition

- this makes sense of (at least some of) the rather odd set of back-and-forth changes:
 - α > æ > α > æ
 - is it reasonable to assume that so many 'opposite' rules were innovated one after the other?

Notably, 'Second Fronting' changed [ɑ] back to [æ] precisely in the a-Restoration contexts

- Dresher (2015) writes: "that a rule would simply reverse a previous rule is only one of the suspicious characteristics of Second Fronting. The change is a strange sort of dissimilation whereby a back vowel becomes front before a following back vowel."

To return to this set of changes, at stage 4 of Mercian OE, there is evidence from alternations so that learners could construct a rule of 'a-Restoration'

- nonetheless, Dresher argues, the rule is lost at stage 5, so the underlying forms surface

Stage 4: grammar with *a*-Restoration

UR	/fæt/	/fæt+um/	/hæfuc/
<i>a</i> -Restoration	—	fatum	hafuc
SR	[fæt]	[fatum]	[hafuc]
(Gloss)	'vat _{NS} '	'vats _{DP} '	'hawk _{NS} '

Stage 5: 'Second Fronting' as the loss of *a*-Restoration

UR	/fæt/	/fæt+um/	/hæfuc/
<i>a</i> -Restoration		L O S T	
SR	[fæt]	[fætum]	[hæfuc]
(Gloss)	'vat _{NS} '	'vats _{DP} '	'hawk _{NS} '

Stage 4: grammar with *a*-Restoration

UR	/fæt/	/fæt+um/	/hæfuc/
<i>a</i> -Restoration	—	fatum	hafuc
SR	[fæt]	[fatum]	[hafuc]
(Gloss)	'vat _{NS} '	'vats _{DP} '	'hawk _{NS} '

Stage 5: 'Second Fronting' as the loss of *a*-Restoration

UR	/fæt/	/fæt+um/	/hæfuc/
<i>a</i> -Restoration		L O S T	
SR	[fæt]	[fætum]	[hæfuc]
(Gloss)	'vat _{NS} '	'vats _{DP} '	'hawk _{NS} '

This analysis involves a **surface change with no underlying change**

- this rule loss has the effect of **regularising the paradigm**
 - it has been argued in the RBP framework (for example by King 1973), that a principle of change is that grammars tend to change in directions which increase paradigm uniformity
 - this may account for the case of rule loss here
 - this links to discussions of the notion of **analogy**

Analogy in RBP

The RBP approach to historical phonology sees a strength in its approach that it can make **analogy** seem less random and unpredictable in some cases

- one major kind of analogy is **paradigm levelling**

There were two stressed vowels in the paradigm for *vat* in stage 4 Mercian OE:

- [fæt] 'vat_{NS}'
- [fatum] 'vats_{DP}'
- this was regularised in a later stage:
 - [fæt] 'vat_{NS}'
 - [fætum] 'vats_{DP}'
- the traditional approach is to say that it involves analogy, the DP analogises with the NS form
- RBP can say that it is due to *rule loss*, as in the explanation from Drescher (2015)
- an argument in favour of the RBP approach is that the change involved ('Second Fronting') is regular, and we would expect analogy to be lexically sporadic

On the RBP approach, 'analogy' can often be seen as **grammar simplification** and is related to rule-based behaviour, not to irregular acts of reanalysis

- traditionalists, however, point out that not all cases of analogy can be reduced to a rule-based analysis, so this idea may not be as compelling as its proponents claim
- eg, the fate of the /r/ in *coren* > *chosen* and other word-by-word regularisations
- the ancient rule which derived the [r] in *coren* had long been lost and the /r/ had been lexicalised well before *coren* became *chosen*
- such changes are inherently lexical and non-rule-based, so not all cases of what is traditionally seen as analogy can be reduced to grammar simplification

On the other hand, the **rule loss** analysis is quite compelling for cases of data which are **otherwise analysed as analogy**, such as the loss of FOD in Yiddish

- there is an overwhelming **regularity** in the behaviour of alternating forms
- if the loss of voiceless forms were instead due to analogy, we would expect an even split in terms of forms that now have a voiceless final segment in the SR of their base and forms which have a voiced final segment in the SR of their base

Just because an analogy occurs in one word, does not mean that it will in another

- the change of forms like *tak* to *tag* in the history of Yiddish **has** sometimes been argued to be due to analogy:

stage 1: pre-apocope /tag/ 'day'

	Singular	Plural
Nom	ta k	ta g ə
Acc	ta k	ta g ə
Gen	ta g əs	ta g ə
Dat	ta g ə	ta g ən

stage 2: post-apocope /tag/ 'day'

	Singular	Plural
Nom	ta k	ta g
Acc	ta k	ta g
Gen	ta g əs	ta g
Dat	ta g	ta g ən

stage 3: *tak* > *tag*

- was this simply in analogy with the form with [g] elsewhere in the paradigm?
- if it were due to analogy, we would expect it **not** to have occurred in all words, or some words to have regularised to the **voiced** final segment throughout the paradigm and some to have regularised to the **voiceless** final segment throughout the paradigm as the nominative and accusative singular forms are the most frequent
- however, the change was **regular** – it seems to have been **rule-like**, not sporadic

Further implications of rule loss

When we considered **phonologisation/phonemicisation**, we saw that the NON-PHONOLOGISATION PROBLEM might be an issue

- the case considered was as follows

	<i>gull</i>	<i>girl</i>	
UR	/gul/	/girl/	
velar palatalisation	—	ɟirl	= predictable distribution of [ɟ]
SR	[gul]	[ɟirl]	

- in Early Modern English, pre-r vowels centralized, this included **ir > ɜ:**
- this **removed the environment** for velar palatalisation to apply, like the loss of -i removed the environment for *i*-umlaut
- this **did not** lead to the phonologisation/phonemicisation of /g : ɟ/ (* /gul, ɟɜ:l/)
- why did the loss of conditioning environment lead to the loss of [ɟ]?
- ɟ clearly did not become underlying while it was still predictable...?

We left this as a cliff-hanger:

- if this is right, phonologisation/phonemicisation **can** occur, but **does not have to** occur
- persuasive cases of **rule loss** imply that the NON-PHONOLOGISATION PROBLEM really **is** an issue

Where can rules be added into phonology?

This model of RBP, with a number of ordered rules allowed in a derivation and some 'distance' (= **abstractness**) allowed between UR and SR, has considerable implications for our understanding of phonological change

- one question is: where can rules be added?
 - only at the end of a set of rules? or in the middle of a set of rules?

One example of this can be demonstrated on the basis of the interaction between two change in the history of English: **i-umlaut** and **affrico-palatalisation**

- a 'traditional' approach assumes that a **relative chronology** can be established between the two changes
- this is closely related to the question of '**when is a change finished**'?
 - on an RBP approach, this question becomes '**when does a 'change' cease to be synchronically active**'?

As we have partially seen, *i-umlaut* is a major change that affected a number of vowels in the transition from West Germanic to Old English, approximately between the second and fifth century CE

- the data here again focuses on WGmc /u(:)/

Pr-Gmc	OE (spelling and transcription)		
trumjan	<i>trymman</i>	[trym:an]	'strengthen'
kuni	<i>cynn</i>	[kyn:]	'race, generation'
mu:siz	<i>mys</i>	[my:s]	'mice'

The change harmonised /u(:)/ with a following [i] or [j]

- the long and short vowel changes are really part of the same change
 - u > y / _ (C) i, j
 - this can be understood as: [+back, +high] > [-back] / _ (C) [-back, +high]

English **affrico-palatalisation** also occurred on the way from West Germanic to OE

- it can be demonstrated on the basis of comparing English with Dutch, which retains the Proto-Germanic consonants in this respect
- other velar consonants were also affected in the change, but are not considered here

PD Dutch	OE	PDE
<i>kin</i> [kɪn]	<i>cin</i> [tʃin]	[tʃɪn] 'chin'
<i>strekken</i> [strɛkə]	<i>streccean</i> [stretʃ:ean]	[stɹɛtʃ] 'stretch'
<i>dijk</i> [dɛɪk]	<i>dic</i> [di:tʃ]	[dɪtʃ] 'ditch'

The change affected the velar stop

- it palatalised and affricated in the environment of a front (that is, [-back]) vowel (this set includes [i] and [e])
- in fact, the affrication may have come later, but a significant palatalisation is clear at this period, so the change can be understood as:

$$k > tʃ / \left\{ \begin{array}{l} _ [-back] \\ [-back] _ \end{array} \right\}$$

The following data from OE shows something fundamental about the two changes:

- OE *cynn* [kyn] < Gmc *kuni* 'kin, race, generation'
- OE *cylen* [kylen] < Latin *culina* 'kiln'

There is a potential for interaction between affrico-palatalisation and *i*-umlaut as **both involved [-back]**

Although these words featured [-back] vowels following /k/ in OE...

- affrico-palatalisation **did not apply**
- traditional historical phonology sees this as evidence for a *relative chronology*:
 - (1) affrico-palatalisation (2) *i*-umlaut
- the innovation of *i*-umlaut creates [-back] vowels (such as [y]) which do not trigger palatalisation, so...
- (1) must have occurred, and become 'finished' as a change, **before** (2) occurred

This is how the 'traditional' approach to such changes works

- the affricates became underlying (that is, went as deep as the phonological model allows) **immediately** (or at least, soon)
- the traditional approach can be summarised as seeing phonological phenomena as 'once innovated, soon finished'

The RBP model allows for other options of analysis

- in principle, **both phenomena could be synchronically active** – that is, not phonologically ‘finished’ – at the same time
- the synchronic derivation at some stage of the language *could* have been like this:

	‘race’	‘chin’	
UR	/kuni/	/kin/	
afri-co-pal	—	tʃin	this involved the addition of a rule
<i>i</i> -umlaut	kyni	—	this involved the addition of a rule
SR	[kyni]	[tʃin]	

	‘race’	‘chin’	
UR	/kuni/	/kin/	
afri-co-pal	—	tʃin	this involved the addition of a rule
<i>i</i> -umlaut	kyni	—	this involved the addition of a rule
SR	[kyni]	[tʃin]	

This has palatalisation *ordered* before *i*-umlaut so that palatalisation is **opaque** on the surface

- there are sequences of [k] followed by [–back] vowels on the surface, which should not occur according to the affrico-palatalisation rule
- but these sequences of [k] followed by [–back] vowels do not exist at the point of the derivation that is relevant to the affrico-palatalisation rule
- *i*-umlaut *counterfeeds* palatalisation – if the two were ordered the other way round, *i*-umlaut would feed palatalisation
- opacity is a fundamental aspect of the grammar in RBP
- rules need not be *surface true* if there is good evidence for learners that the rule exists

On this analysis, rules like palatalisation (the synchronic reflex of the palatalisation change) can be active for much longer than in traditional approaches.

But why would we think that there was a stage of English with that grammar?

- why would children learning the language assume that 'chin' still had underlying /k/?
- there **were** morphophonological alternations between the two:

*ceosan*_{infinitive} [tʃe:osan] ~ *coren*_{past-participle} [koren] 'choose'

King (1973, p. 563) explicitly argues for this kind of analysis for early OE

- he argues that there is evidence that *i*-umlaut was in fact innovated **before** affrico-palatalisation, going against the traditional 'relative chronology' approach:
 - affrico-pal is an aspect of **Anglo-Frisian**, showing impact only in English and Frisian
 - *i*-umlaut has some impact in **all Germanic languages** apart from Gothic
- "Old Saxon had a rule of umlaut identical to the one reconstructible for pre-Old English; but [...] Old Saxon – structurally the closest West Germanic dialect to Old Frisian and Old English – did not have a rule of palatalisation"
- if this is right, it **cannot be** that affrico-palatalisation was innovated and finished before *i*-umlaut was innovated

King's RBP model allows him to assume that:

- an *i*-umlaut rule was added **first**, and – crucially – stayed in the grammar for a long period
 - an affrico-pal rule was innovated **later**, while *i*-umlaut still existed as a rule of the grammar
 - on this picture, affrico-palatalisation was added in the **middle** of the rules, **above** *i*-umlaut

This can be seen as evidence against an approach which assumes 'once innovated, soon finished' and in favour of an approach which allows for '**once innovated, long active**'

- this is a hallmark of the RBP approach to historical phonology

An important question for historical phonology then arises:

- **how much opacity** can a grammar tolerate?
 - at some point in the history of English there has been a reanalysis: /k/ now contrasts with /tʃ/; when this reanalysis happens is an issue for argumentation and analysis

A correlation of this is a further hallmark of the RBP approach to historical phonology:

- underlying representations change more slowly than is assumed in traditional historical phonology (and in reductionist, Usage-Based contemporary approaches)
 - Chomsky and Halle (1968, 49) wrote, at the start of RBP (but reflecting in part on previous 'Structuralist' approaches), that "it is a widely confirmed empirical fact underlying representations are fairly resistant to historical change, which tends, by and large, to involve late phonetic rules"