Some rules R natural, some R a little crazy :)

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Some rules R natural, some R a little crazy :)

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"No we're never gonna survive, unless
We are a little crazy"

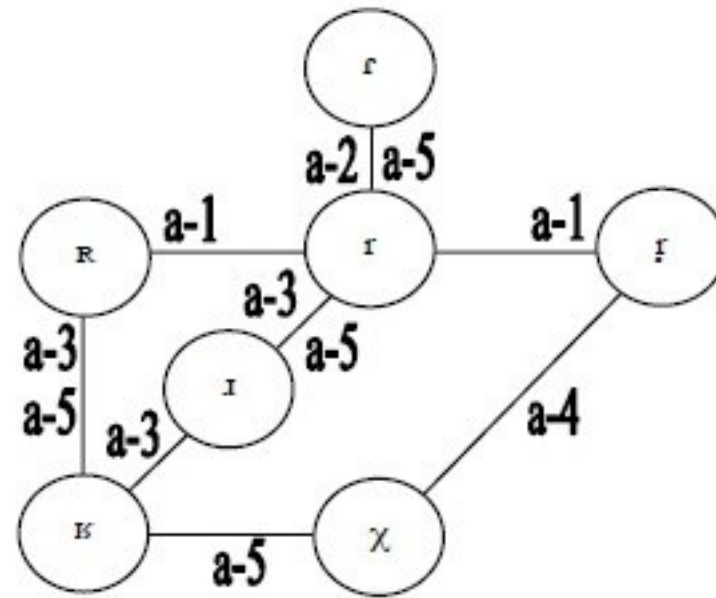rule naturalness

crazy rules

substance-free phonology

the life-cycle of phonological rules

Roadmap

- substance-free phonology

- why is still there substance in most of phonology? -- the life cycle

- two R-rules in English: R-sandhi and/versus s-retraction in /str/

- some rules R natural, some R a little crazy

Substance-free phonology: R

Figure 1: Lindau's 1985 model of rhotic parameter relations [15:167]

a-1	Pulse pattern (trill)	
a-2	Closure duration	
a-3	Presence of formants (sonorant)	
a-4	Presence of noise	
a-5	Spectral energy distribution (place)	

Substance-free phonology: R

- Lindau (1985)

- "R": Wiese (2001): an element which is found between laterals and glides on the sonority scale, independent of its actual phonetic realisation
  - same phonology, different phonetics

Substance-free phonology: R

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- "R": Wiese (2001): an element which is found between laterals and glides on the sonority scale, independent of its actual phonetic realisation
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- many other examples, e.g., "schwa" in French (the [œ] that can't be stressed, won't raise in absolute final position, doesn't alternate with zero ...), [v] as obstruent/sonorant, etc.
  - same phonetics, different phonology

- mismatches → (sometimes) there is no phonetics in the phonology

Substance-free phonology

- introduced by Hale & Reiss (2000)   **(Scheer 2024)**

- today cuts through all theories (OT, GP, rule-based)

- there is no phonetics in the phonology

Substance-free phonology

- introduced by Hale & Reiss (2000)   **(Scheer 2024)**
- today cuts through all theories (OT, GP, rule-based)
- there is no phonetics in the phonology
- phonetic categories come into being upon spell-out
- phonetic naturalness is phonologically irrelevant
- but:
  - "there is nothing wrong with using "labial" when talking about phonology: this is just shorthand (and mnemonically efficient) for "the phonological prime that is spelt out as labial"
  - black holes are neither black nor holes, but astronomers use the shorthand
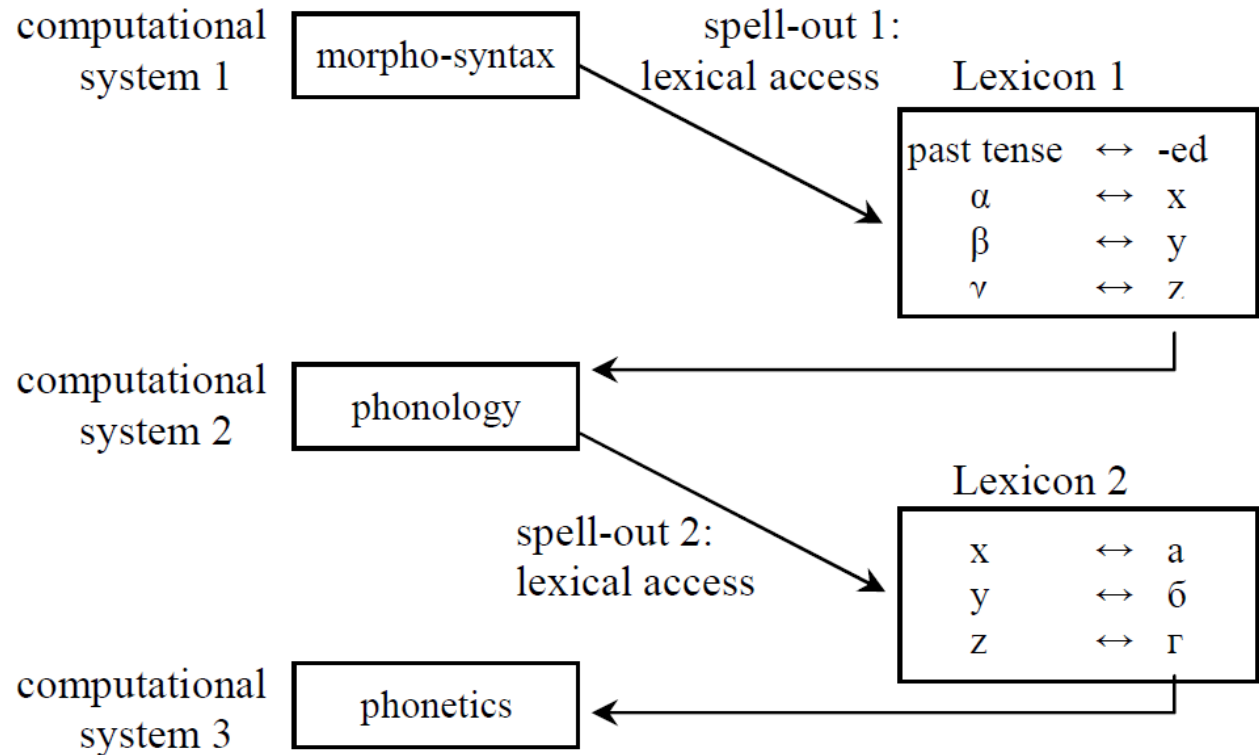 - chemists talk about water when they mean H_2O"

Substance-free phonology

- Scheer (2024):
  - Hale & Reiss (2000, 2008), Hale & Kissock (2007), Volenec & Reiss (2018, 2019) Boersma (1998: 461ff, 2011), Boersma & Hamann (2008), Hamann (2011, 2014), Mielke (2008), Carvalho (2002), Odden (2006, 2022), Blaho (2008), Samuels (2011a,b, 2012), Iosad (2012: 6ff, 2017), Scheer (2014, 2022), Chabot (2019, 2022), Dresher (2014, 2018). Summary in Scheer (2019).
  - special issue 67.4 of the *Canadian Journal of Linguistics*
  - Chabot, Alex 2022. On substance and substance-free phonology: where we are and where we are going. *Canadian Journal of Linguistics* 67: 429-443.
- (modularity? acquisition? two "schools": the "Concordia School" and "Radical SFP"...)
- GP in general (ET (|R|); interpretation of EC's; same PE gov/lic'ed...)
- Cyran et al. in Laryngeal Realism/Relativism

Substance-free phonology

Scheer (2014):

(1) Fragment of grammar involving phonology

Substance-free phonology

Scheer (2014):

upper interface

(morpho-syntax with phonology)

lower interface

(phonology with phonetics)

(1) Fragment of grammar involving phonology

computational system 1 — morpho-syntax — spell-out 1: lexical access — Lexicon 1

Lexicon 1		
past tense	↔	-ed
α	↔	x
β	↔	y
γ	↔	z

computational system 2 — phonology

spell-out 2: lexical access

Lexicon 2		
x	↔	a
y	↔	б
z	↔	г

computational system 3 — phonetics

Substance-free phonology

Scheer (2014):

upper interface

(morpho-syntax with phonology)

lower interface

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arbitrariness of association:

(1) Fragment of grammar involving phonology

computational system 1 | morpho-syntax

spell-out 1: lexical access

Lexicon 1

past tense	↔	-ed
α	↔	x
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computational system 2 | phonology

spell-out 2: lexical access

Lexicon 2

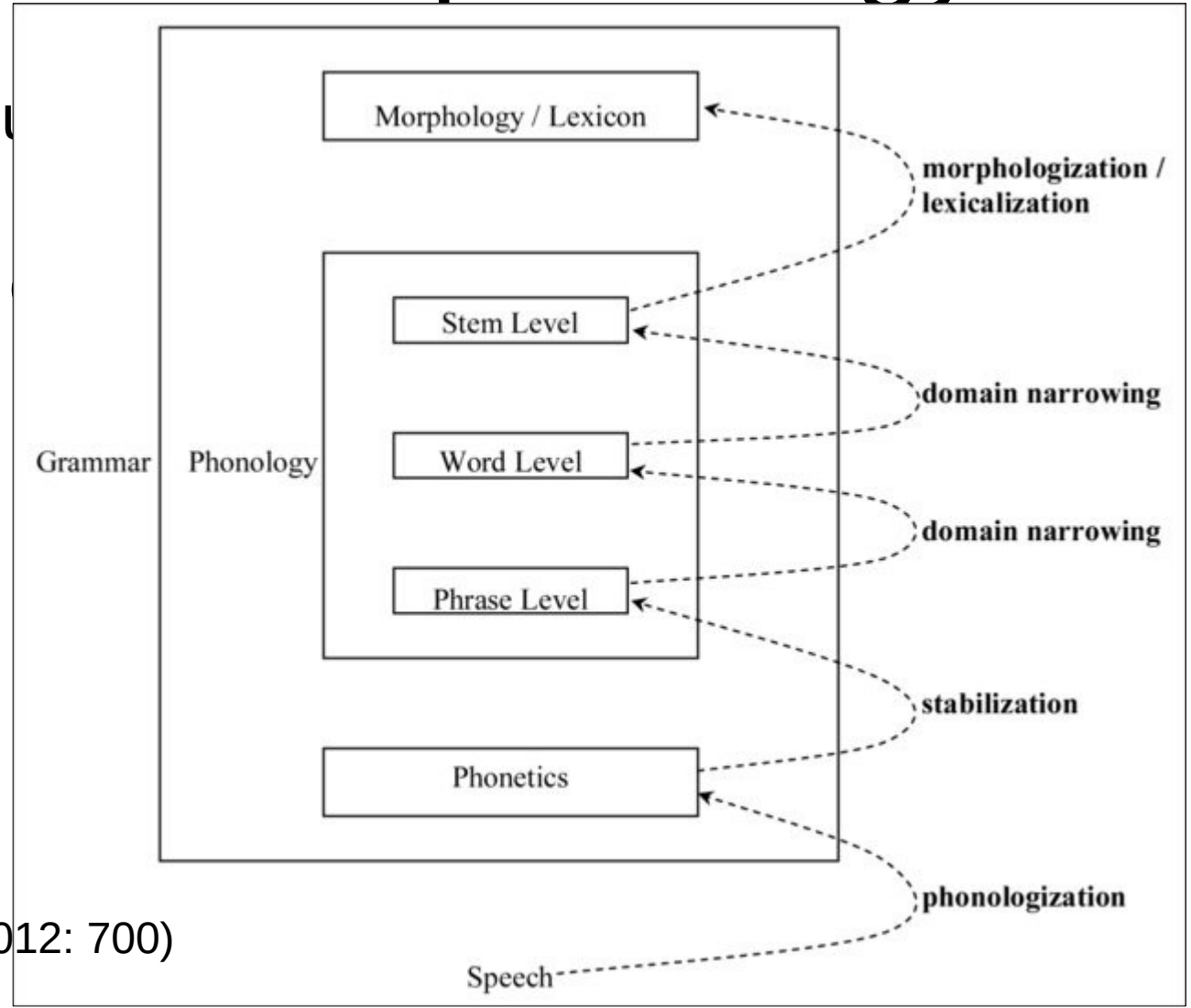| x | ↔ | a |
| y | ↔ | б |
| z | ↔ | г |

computational system 3 | phonetics

- "everybody agrees that this is indeed the case at the upper interface
- but that must also be true at the lower interface -- and this is not only less obvious: it is utterly counter-intuitive"

Substance-free phonology

- "natural" – "unnatural" – "crazy": equally probable or well-formed

- but: the life-cycle of phonological processes:

Substance-free phonology

- "natural" – "unnatu[ral]" well-formed

- but: the life-cycle [...]

Grammar | Phonology

- Morphology / Lexicon
- Stem Level
- Word Level
- Phrase Level
- Phonetics

morphologization / lexicalization

domain narrowing

domain narrowing

stabilization

phonologization

Speech

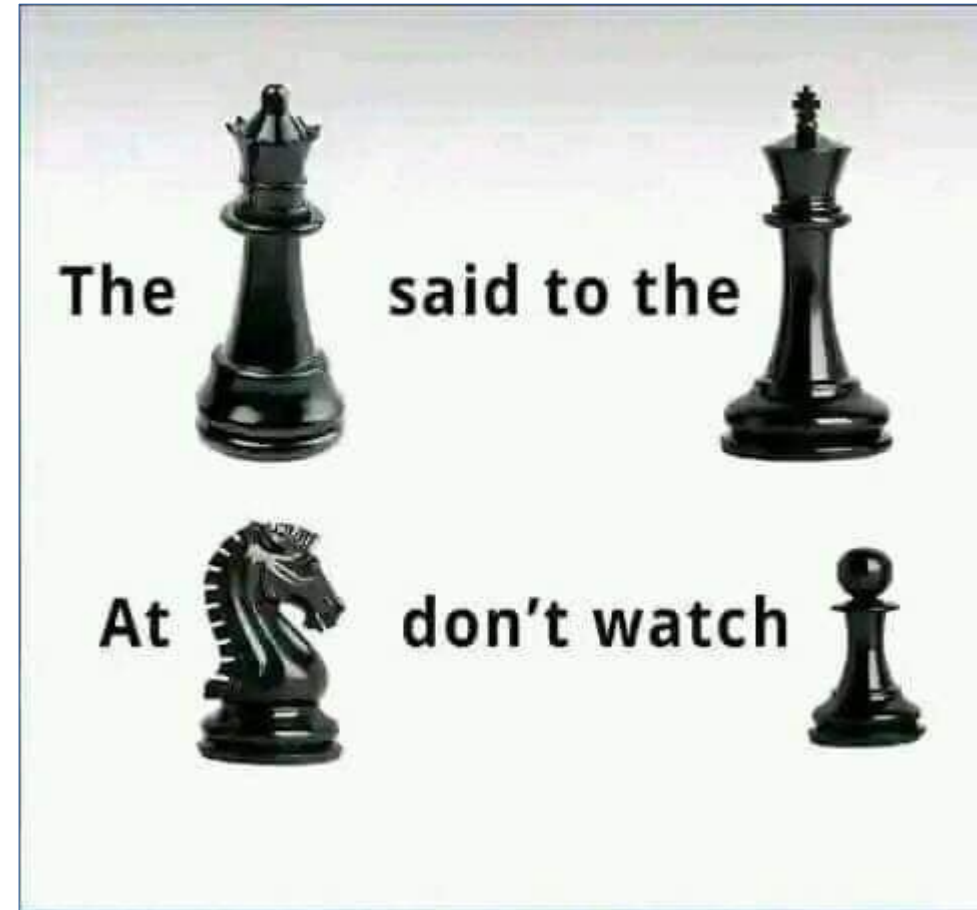(Bermúdez-Otero & Trousdale 2012: 700)

Substance-free phonology

- "natural" – "unnatural" – "crazy": equally probable or well-formed

- but: the life-cycle of phonological processes:

  – rules are regular and natural when they are born in the phonetics

  – this regularity and naturalness is carried over into the phonology upon phonologisation

  – this naturalness is destroyed in diachronic evolution, following the life-cycle

→ "rules are not born crazy, they become crazy through aging"

R-sandhi

R-sandhi

- in non-rhotic accents

R-sandhi

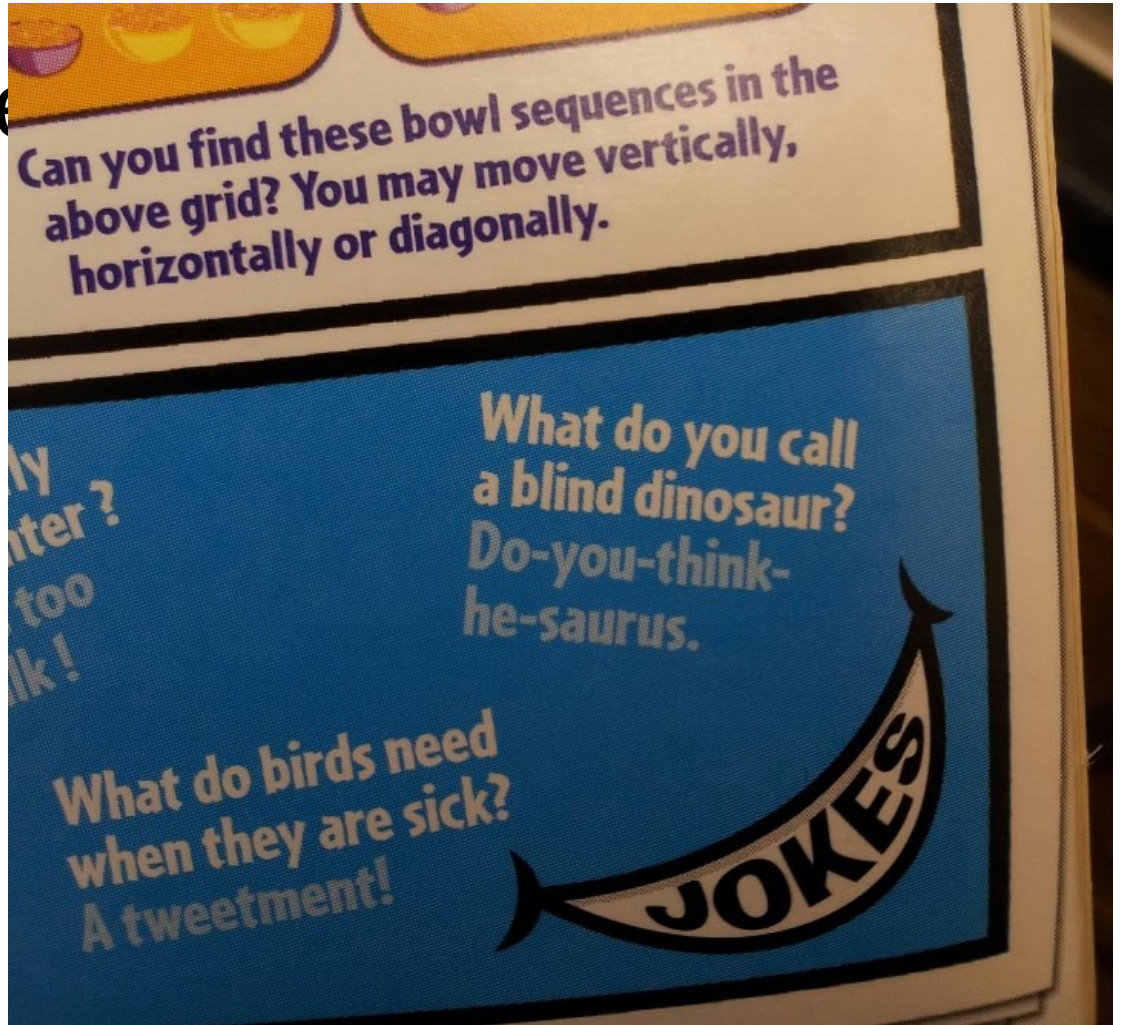- in non-rhotic accents
- to fill hiatuses

Improve Your Accent
1 ó. · 🌐

When anglicizing, I pronounce the name of the "toi et moi" cafe in Soho with an intrusive R: [ˌtwɑːreɪˈmwɑː].

R-sandhi

- in non-rhotic acce
- to fill hiatuses

R-sandhi

- in non-rhotic accents
- to fill hiatuses
- phonologically arbitrary, unnatural
- floating |R|? (Harris 1994)
- spreading of |A|? (Broadbent 1991)

R-sandhi

- but: the rhotic of the dialect varies: [r], [ɹ] or [ɻ]; even labiodental [ʋ] (Wells 1982)

- recall Wiese (2001)

- Uffmann (2007): the current pattern of intrusion might have arisen from an original spreading process, which was subsequently generalised into a sonority-based insertion process

- i.e., R-sandhi has "aged" and

- has become a little crazy :)

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/s/-retraction

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Shtreets of Philadelphia: An Acoustic Study of /str/-retraction in a Naturalistic Speech Corpus

ESSAY

Street or Shtreet? Investigating (str-) palatalisation in Colchester english

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Got the World on a Shtring - S-retraction

/s/-retraction

Coronal palatalization gets [ʃtʃɪ]onger: the case of s-retraction and coronal affrication in contemporary English

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Getting [ʃ]tronger Every Day? Urbanization and the Socio-Geographic Diffusion of (str) in Columbus, OH[*]

a Shtring - S-retraction

/s/-retraction

- quite a number of studies …

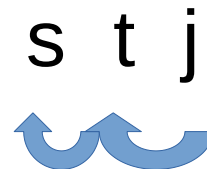- … Kijak (2025) (see references therein)

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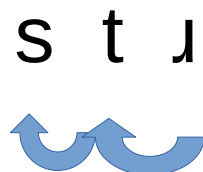
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s t ɹ   s t j

/s/-retraction in E. varieties

- variable (intra-speaker / inter-speaker (dialectal) variation)

- the role of coarticulation with /r/ is not entirely clear but in 'non-retractors' the degree of retraction correlates with decreased articulatory distance between /s/ and /r/ (Mielke et al. 2010)

- a case study: Scottish English: alveolar tap/trill

/s/-retraction in Scottish varieties

- Stuart-Smith et al. (2019): cross-dialectal differences, but
  - no /str/ retraction in Scottish English
  - Scottish varieties: pattern together, the same moderate retraction for /s/ in all clusters, with and without /r/ (prevocalic /s/ is auditorily and acoustically retracted, esp. Glasgow)

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ISHN'T IT SHTRANGE, HOW EVERY NATIONALITY

SHPEAKS WITH THE SHAME ACSHENT?

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  - a sound change in progress
  - for several speakers, /s/ in /str/-clusters is statistically significantly [ʃ] or clearly retracted towards [ʃ], but
  - alveolar forms of /r/ may occasionally cooccur with palatalised /s/, but this is not the norm
  - it is likely that the place of articulation in /r/ and /s/ within /str/ is a crucial aspect in the debate about the motivation of the sound change

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Diachronic chronology

R-sandhi

- earliest reference to intrusive /r/: 1762 (Wells 1982)

- today: well-established in non-rhotic type C (Harris 1994)

- disappearing together with other forms of (phon./ morph.) sandhi in urban varieties in England (esp. MLE) (Britain & Fox 2009, etc.)

/s/-retraction

- ongoing sound change
- studies since the 1990s

Conclusion

- two R-rules in varieties of English:

- R-sandhi has "aged":
    - stabilised / phonologised
    - its naturalness has been destroyed → it has become a little crazy :)

- s-retraction:
    - place of articulation in /r/ is (still) a crucial aspect
    - it is still "natural": relatively recently born in the phonetics

- illustrations of the relations between the life-cycle of phonological rules and the gradual erosion of substance

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