EMERGENT FEATURES + CONTRASTIVE HIERARCHIES

What condition Halle's (1959) conditions are in

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How do we preserve and update the insights of SPR without universal features?

"Se vogliamo che tutto rimanga come è, bisogna che tutto cambi." —Giuseppe Tomasi di Lampedusa

SPR: Condition (2) — Distinctive features

"The phonetic properties in terms of which segments are characterized belong to a specific, narrowly restricted set of such properties called the *distinctive features*."

▶ Features have phonetic content.

▶ Features are universal.

Against universal features

▶ Languages in different modalities use different phonetic properties.
▶ Even when languages use the 'same' feature, the boundary between + and – values can vary. E.g., are [ɛ] and [ɔ] mid, or low? Are nasals and laterals continuant?

(see Mielke 2005, 2008; Blaho 2008; Samuels 2011; Cowper & Hall 2014)
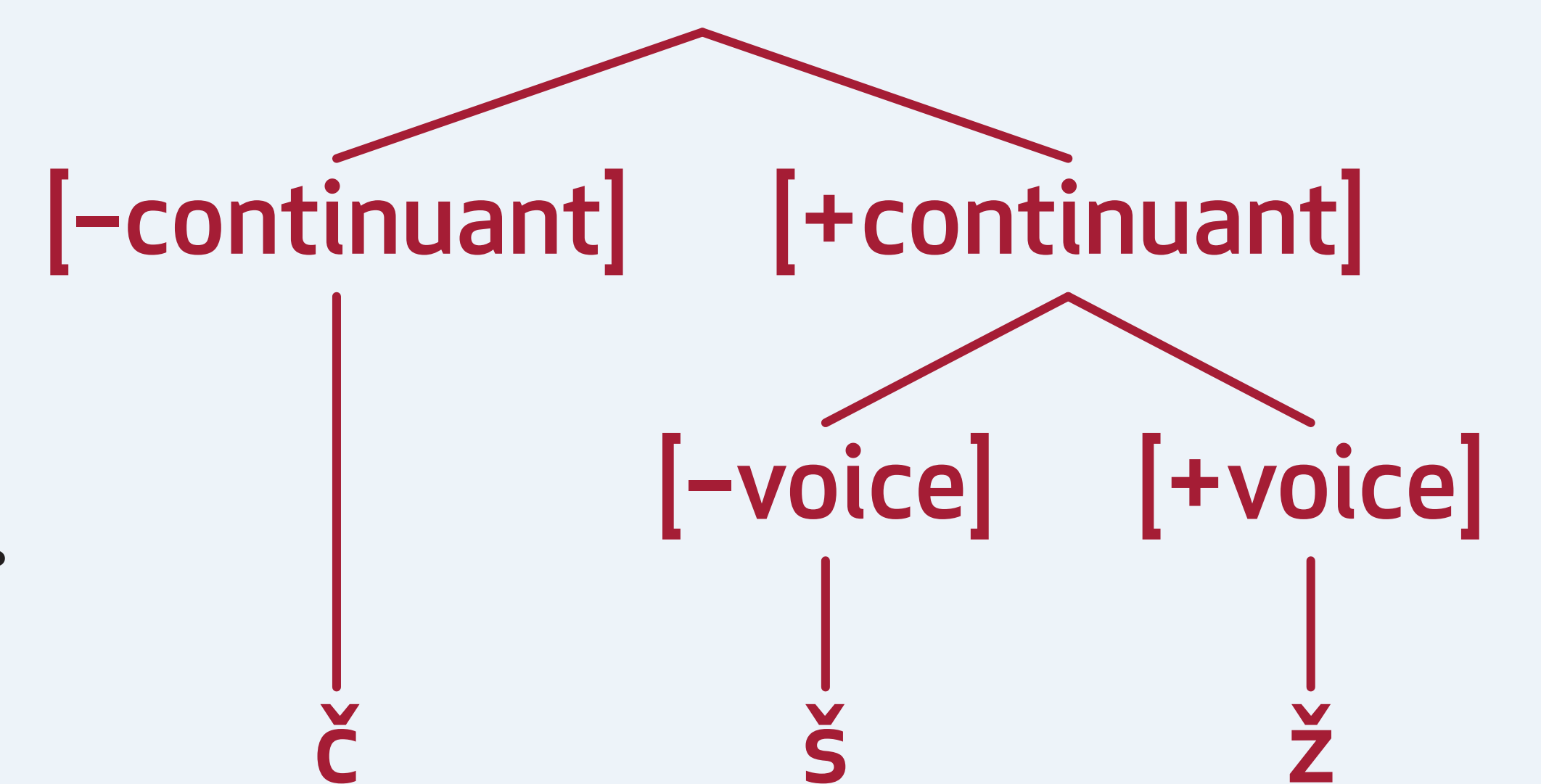
SPR: Condition (5) — Minimality

"In phonological representations, the number of specified features is consistently reduced to a minimum…"

Halle uses a contrastive hierarchy to minimize feature specifications.

If features are emergent rather than innate…

▶ 'Full specification' is meaningless. Contrastive hierarchies can tell us how many features we need.
▶ Cross-linguistic recurrence of features arises from properties of production, perception, and cognition.

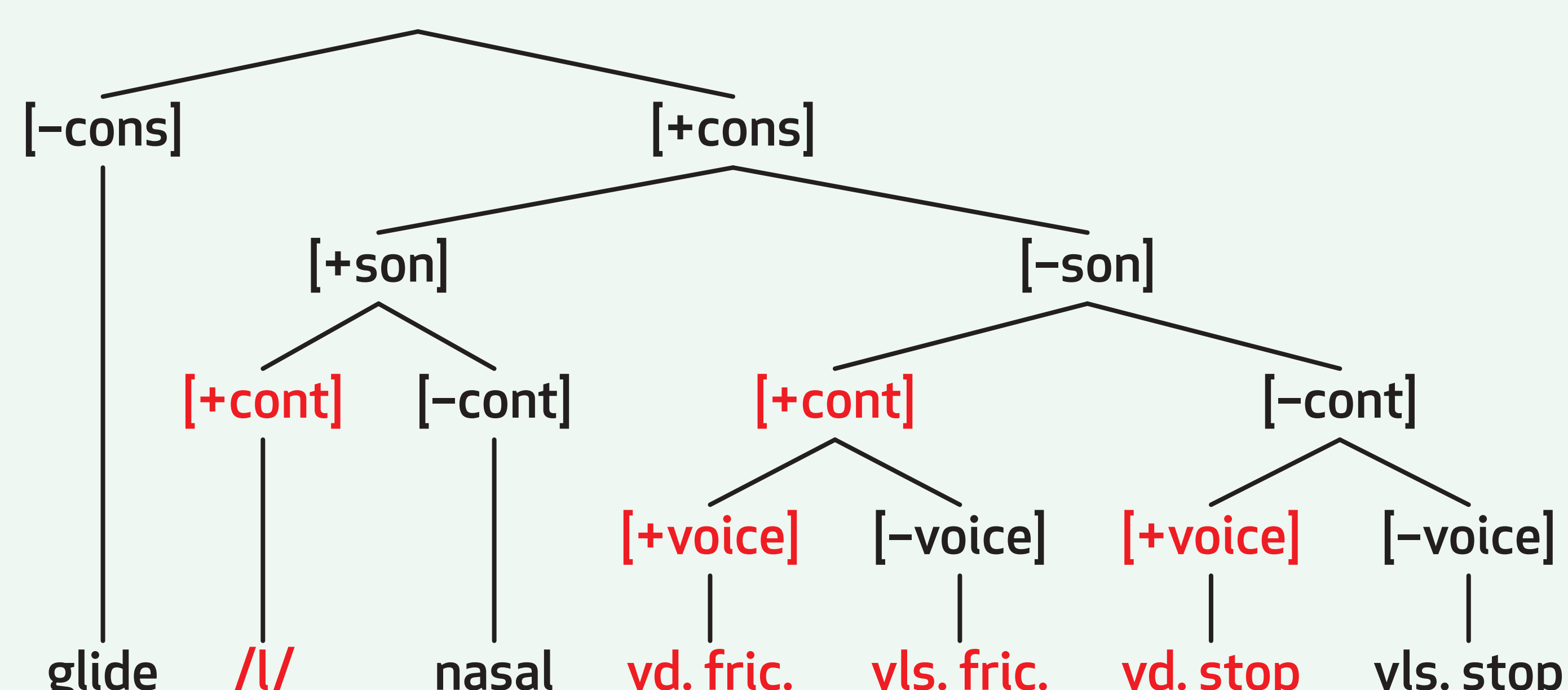## Contrastive specification helps us understand why phonological patterns aren't always phonetically natural, even if features have phonetic content:

Natural classes: Vietnamese

- Phonetically 'unnatural' classes are sometimes used to argue that features should be substance-free (Mielke 2008; Blaho 2008).
- Contrastive specification shows these classes to be *formally* natural.
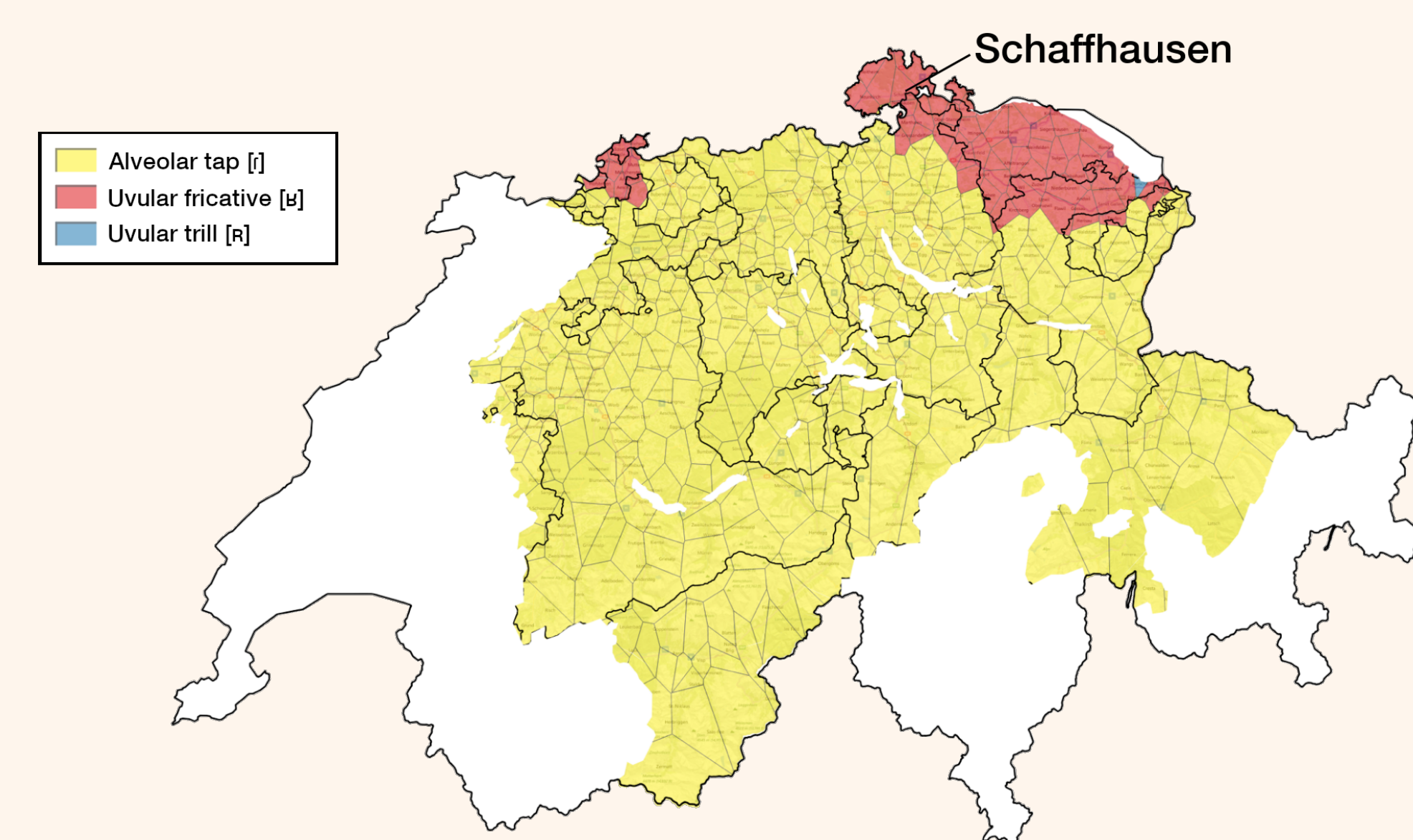- E.g., coda consonants in Vietnamese (Pham 2008):

✓ glides	✗ voiced fricatives
✗ /l/	✗ voiceless fricatives
✓ nasals	✗ voiced stops
	✓ voiceless stops

- Marked values [+continuant] and [+voice] are barred in codas.
- Sonorants are voiced, but not [+voice], and glides are continuant, but not [+continuant]:

Generalizing patterns: Schaffhausen German

- /r/ triggers lowering of /o/ to [ɔ].
- Some dialects extend the pattern from /r/ to:
  - other sonorants
  - coronal obstruents
- Mielke (2008): The extension is based on phonetic similarity.
- But Schaffhausen /r/ tends to be uvular (hence the lowering?):

Varieties of /r/ in Swiss German (geographically normalized) (Leemann *et al.* 2018: Fig. 6)

- Place doesn't need to be specified on /r/—it's not contrastive.
- Friedrich *et al.* (2008) argue coronal place is unmarked in (Standard) German.
- If coronal is unmarked in Schaffhausen, what matters is **phonological**, not phonetic similarity: /r/ and coronal obstruents lack place features.

Giving up universal features does not mean abandoning Halle's program. On the contrary, it underscores the need for a Hallean approach to contrast in phonological representations.