Blank slates: where are features in "crazy" phonologies?

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In a theory of phonological primes with universal and innate phonetic correlates, phonological features serve as the explanans for two cross-linguistic observations:

(1) Phonological inventories tend be composed of similar sets of phonemes.

(2) Phonological processes tend to operate over similar sets of targets and triggers.

These observations become linguistically significant if UG is in part a set of universal segmental primes, each with a phonetic correlate. Phonological inventories are built up from this set of universally shared primes which means they all end up looking alike, and computation only ever happens over that set of primes and is further constrained by being phonetically natural.

The goal of this paper is to show that exceptions to the generalizations in (1) and (2) seriously reduce the explanatory power provided by universal substantive features and make this position untenable, and that phonology computation and representations are phonetically contentless.

Exceptions to (1) are well known, as for example in Ladefoged & Everett (1996), who show that some languages contain typologically rare phonemes, meaning that (1) does not hold true of all languages – if the set of primes is universal there is no reason exceedingly rare sounds should not occur more frequently as a result of variation and language change. Additionally, phonological theory must be able to include computation of rare sounds, though expanding the set of universal primes each time a new unattested sound is documented is undesirable (as for example clicks in Halle (1995)).

Further, exceptions to (2) exist in the form of "crazy rules" (Bach & Harms 1972). These rules are difficult or impossible to parsimoniously capture using feature sets typically included in generative theory, and show that computation over primes in languages can operate free of constraints imposed by phonetics.

This paper presents a selection of crazy rules to argue that while computation of phonological features is a part of UG, those features do not have inherent phonetic content:

(3) **Nez Perce** (Aoki 1970): tç → s / __n

(4) **Yawalapiti** (Carvalho 2017): p → r / i__

(5) **Xhosa** (Bennet & Braver 2015, Braver & Bennet forth.): b → dʒ / __w

(6) **Sardinian** (Molinu 2009, Scheer 2015): l → ʁ / V__V

It will also consider evidence from a cross-linguisitic crazy class, that of rhotics, whose various guises show that there is virtually no limit on the phonetic expression of a phonological prime.

In a theory of primes which have no phonetic content it is an illusion that (1) and (2) are an explanandum demanding recourse to UG: the use of a universal substantive feature set tricks us into including them into phonological theory. Instead, this paper argues that phonological primes are empty of phonetic content, and are instead "emergent" (Mielke 2005).

Phonological primes which are blind to phonetics demand less of UG, and it resolve typological issues posed by crazy classes and crazy rules – they have the same ontological status as natural classes and typologically frequent rules. This position requires an explicit interface between phonetics and phonology. In a standard theory with substantive primes, a segment such as /p/ is represented as something like [+lab, -cont, -voice], with each prime interpretable directly by

phonetics. In a theory without substantive labels, /p/ = [+α, -β, -γ]. The interface translates phonological objects into phonetic objects, and vis versa: α↔lab; β↔cont; γ↔voice.