The curious incident of the Latin liquids.

Philip J. Roberts (University of Oxford)

philip.roberts@ling-phil.ox.ac.uk

Long-distance dissimilation of liquids in a Latin suffix[1]. Data:

Form: alternates between [a:li] and [a:ri]

Function of suffix: denominal, adjective-forming.

Elsewhere form: [a:li], e.g. in

- *nauali-s* 'naval-NOM.SG.M/F'
- *hiemalis* 'of winter'
- *Augustalis* 'of Augustus'

Suffix preceded by [l] → [a:ris]

- *lunaris* 'lunar'
- *popularis* 'popular'
- *militaris* 'military'

Suffix preceded by [r] → [a:lis]

- *regalis* 'royal'
- *floralis* 'floral'
- *pluralis* 'plural, manifold'

This is as far as the handbooks tend to get (see Meiser 1998: 127, Leumann 1977)
Cser (2010) points out a systematic[2] exception:

Non-coronal between liquid and suffix → [a:lis]

- *legalis* 'legal' (not **legaris*)
- *Vulcan-ali-a* 'festival of Vulcan-NOM/ACC.PL.N' (not *Vulcanaria)
- *fulminalis* 'projectile' (not **fulminaris*)

ABC Analysis:

Constraint schema:

¬IDENT-CC-*x*

The logical complement of IDENT-CC-*x*, i.e. "Assess a violation for every pair of segments in the correspondence relation that differ with respect to *x*

Effect: enforces the OCP on the CC-correspondence tier.

Definition:

¬IDENT-CC-ART

Enforces the CC-OCP on place features.

Two OCP contours:

Perfect — OCP observed by both place and [LATERAL]:

seg	l	e	g	a	l	e
LAT	+		−		+	
ART	COR		DOR		COR	

Least expensive repair strategy — change the liquid in the suffix[3]

Next-best — OCP observed by [LATERAL] only:

seg	l	u	n	a	r	e[4]
LAT	+		−		−	
ART	COR		COR		COR	

Next-best repair strategy— Eject a non-liquid from the correspondence relation.

Liquid dissimilation as conditional blocking à la Hansson 2007:

	/lega:Ris/	¬IDENT CC [LAT]	CORR L↔L	¬IDENT CC ART	CORR C↔C
a. ☞	lɛgaːlis				*
b.	lɛgaːlis	*!		*	**
c.	lɛgaːrɪs	*!			*
d.	lɛgaːrɪs			*!	**

	/luna:Ris/	¬IDENT CC [LAT]	CORR L↔L	¬IDENT CC ART	CORR C↔C
a. ☞	lunaːrɪs			*	**
b.	lunaːlis			**!	*
c.	lunaːlis	*!		*	**
d.	lunaːrɪs	*!		**	*

Liquid dissimilation as a preference hierarchy over OCP contours (McCarthy 2010):

	/lega:Ris/	¬IDENT CC ART	¬IDENT CC [LAT]	IDENT CC LIQ	MAX CC
a. ☞	lɛgaːlis			**	*
b.	lɛgaːlis	*!	*		**
c.	lɛgaːrɪs		*	**	*
d.	lɛgaːrɪs	*!			**

	/luna:Ris/	¬IDENT CC ART	¬IDENT CC [LAT]	IDENT CC LIQ	MAX CC
a. ☞	lunaːrɪs	*			**
b.	lunaːlis	**!		**	*
c.	lunaːlis	*	*!		**
d.	lunaːrɪs	**!	*	**	*

Why this matters:

These data appear at first sight to instantiate the pattern of conditional blocking predicted by Hansson 2007, and ruled out by McCarthy 2010. The solution involving a top-ranked constraint in favor of consonant place dissimilation is so counter-intuitive that it only became apparent under automated analysis using PyOT (see Roberts 2012, ch. 1, and compare Karttunen 1998). OT grammars are so prone to produce counter-intuitive behaviors that automated analysis is necessary.

http://brainlab.clp.ox.ac.uk/people/philip-j-roberts

Notes:

1. The dissimilation is restricted to this particular suffix (see also note 3). There are no general co-occurrence restrictions on liquid within the language as a whole (Cser 2010), but there are other suffixes with different patterns of dissimilation, most notably *-al/ar*, which is a reflex of the NEUT.SG of *-alis/aris* (with apocope), but has been generalized as a noun-forming suffix. In *-al/ar*, the liquid dissimilation is not blocked by non-coronals. In the Classical language, this dissimilation is likely not phonologically productive, but a lexical residue of an formerly productive pattern (see Roberts 2012; §2.3.3)

2. Cser (2010: 39) discusses a number of apparent counter-examples, but concludes that most are palaeographically unreliable: some are hapaxes, others come from manuscripts we have independent evidence to consider prone to transmission errors. The only serious difficulty is *letalis* 'deadly'.

3. Given that the domain of liquid dissimilation is this particular suffix, the model must be one of phonologically conditioned allomorphy. Accordingly, I have represented the UR of -alis/aris as /a:Ris/, which should be taken to represent a morpheme that can be parsed equally faithfully with either of the two attested surface forms. Liquid dissimilation is therefore a TETU effect, with the ABC constraints selecting between allomorphs rather than between allophones (cf. Mascaró 1996, Wolf, to appear).

4. This is the neuter singular inflectional ending.

	/lega:Ris/	IDENT CC LIQ	MAX CC	¬IDENT CC ART
☞	lɛgaːlis	2	1	0
	lɛgaːrɪs	0 L	2 W	1 W

	/luna:Ris/	IDENT CC LIQ	MAX CC	¬IDENT CC ART
☹	lunaːrɪs	0	2	1
a. 💣	lunaːrɪs	2 W	1 L	2 W
b.	lunaːlis	0	4 W	0 L

See Roberts (2012: 115) and Roberts *passim*.

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