

## Modern German Height harmony as a front harmony in the internal domain

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1. The aim of this paper is to account for the Modern German vowel alternation found in a closed class of verbs like *ich gebe / du gibst*. Historically, this alternation stems from a height harmony due to a raising of mid vowels and a lowering of high vowels in complementary contexts. Two resulting alternations were observed in the present of OHG: **i.** o-u; and **ii.** e-i. In Modern German, the o-u alternation disappeared, and the alternation spread to other vowels (see 1).

(1)	a-ε	o-ø	u-y
1SG	<i>halt-e</i>	<i>stoß-e</i>	<i>lauf-e</i>
2SG, 3SG	<i>hält-st, häl-t</i>	<i>stöß-st, stöß-t</i>	<i>läuf-st, läuf-t</i>

First, it can be seen that o-ø and u-y show no raising or lowering. Second, following Harris & Lindsey (1995), height harmony is represented *via* an element |A|. However the common element of all mutated vowels in (1) is not |A|, but |I|. Accordingly, it seems that the height harmony of OHG became a front harmony with a specific feature: a fronted e is realized as i (e.g. *ich gebe / du gibst*).

I propose a representation of this specificity in the frame of the Particle Theory proposed in Carvalho (1993) (2), the basic principles of which are **i.** each vowel is made of three elements; **ii.** each element can occur more than once in a segment; and **iii.** the amount of |A| is inversely proportional to the amount of |I| or |U|. Thus, following this framework, there is less |A| in /e/ than in /a/. And when a floating |I| is provided by morphology, the amount of |A| decreases in both segments. Accordingly, we expect that |A| remains in a → ä (2b), and that it drops in e → i (2a).

(2)	a. e  AII	--front harmony (+I) →	i  III
	b. a  AAA	--front harmony (+I) →	ä  AAI

In sum, 2SG and 3SG involve a floating element |I| (i.e. -(I)st, -(I)t) that surfaces in some verbs.

2. I now turn to the morphological conditioning. Data in (3) implies that the vowel alternation is (at least partially) conditioned by the contrast between strong and weak verbs, not by the root itself.

(3)	alternation (= strong verb)	no alternation (= weak verb)
	<i>er-lösch-e</i>	<i>lösch-e</i>
	<i>er-lisch-st, er-lisch-t</i>	<i>lösch-st, lösch-t</i>

Based on the observation that strong verbs *can* have a sub-categorial inflexional suffix (e.g. *Fahrt* 'journey', derived from the pst. part. of *fahren* 'to travel'), I propose that the alternation occurs when the suffixes -(I)st or -(I)t are internal) (4a). The alternation does not occur when the same suffix is in the external domain (4b). (Because of the Phase Impenetrability Condition; see Chomsky, 1998).

(4)	a. [ <sub>v</sub> halt+(I)st] → <i>hältst</i>	b. [[ <sub>v</sub> falt]+(I)st] → <i>faltst</i>
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This hypothesis makes a prediction about the emergence of long suffixes with a schwa (i.e. *-est, -et*). These occur only after a coronal. I thus suspect an OCP effect similar to the epenthesis in English *church-es* (Yip, 1988). When the coronal consonants of the root and the suffix are adjacent in the same domain, they can merge (5a and 4a). But when they are adjacent in different domains, merge is impossible (because of PIC) (5b and 4b) and an epenthesis applies as a repair mechanism.

(5)	a. same domain: merge	b. different domains: no merge
	$\begin{array}{ccc} [\sub{v} & X & X ] \longrightarrow [\sub{v} & X & X ] \\   &   & \diagdown \diagup \\ +\text{cor} & +\text{cor} & +\text{cor} \end{array}$	$\begin{array}{cccc} [ [\sub{v} & X & ] X ] \longrightarrow [ [\sub{v} & X & ] X X ] \\   &   &   &   \\ +\text{cor} & +\text{cor} & +\text{cor} & \text{ə} +\text{cor} \end{array}$

## References

- Carvalho (Brandão de), J. (1993) 'De quoi sont faites les voyelles ? Phonologie tridimensionnelle des particules et harmonie vocalique', in Laks, B. and Plénat, M. (eds) *De natura sonorum*. Paris: Presses universitaires de Vincennes, pp. 65–100.
- Chomsky, N. (1998) 'Minimalist inquiries: The framework'. MIT.
- Harris, J. and Lindsey, G. (1995) 'The elements of phonological representation', in Durand, J. and Katamba, F. (eds) *Frontiers of phonology: atoms, structures, derivations*. Harlow: Longman, pp. 34–79.
- Yip, M. (1988) 'The Obligatory Contour Principle and Phonological Rules: A Loss of Identity', *Linguistic Inquiry*, 19(1), pp. 65–100.