

# Tracking vowel harmony decay in Old Norwegian

Jade J. Sandstedt  
Nord University

Though vowel harmony represents one of the most natural and diachronically robust phonological phenomena that occur in human language, how harmony systems emerge and decay over time remains unclear. In particular, the pathways by which harmony languages lose harmony and what motivates harmony decay is poorly understood since no consistent historical record in any single language has yet been identified which displays the full progression of this rare sound change (McCollum 2015, Kavitskaya 2013, Bobaljik 2018). In this paper, I present a diachronic corpus study of recently digitised Old Norwegian manuscripts, which display distinct pre-, transitional, and post-decay stages, providing the first coherent record of harmony decay in progress and a valuable case study for examining the causation and progression of harmony decay in a natural language corpus.

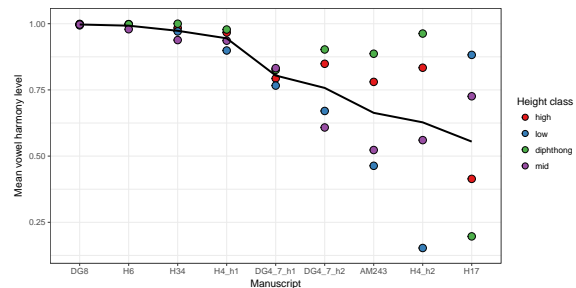
As shown in (1), Old Norwegian (c 1100–1300) displays height harmony, resulting in systematic alternations between high and non-high vowels in agreement with root-initial (stressed) syllables. Unstressed high vowels co-occur with high vowels / diphthongs while non-high vowels follow mid / low vowels.

## (1) Height harmony in Old Norwegian

HIGH	'hu:s-i	<hufi>	'hu:s-um	<hufum>	'house'-DAT.SG./PL.
	'skip-i	<kipi>	'skip-um	<kipum>	'ship'-DAT.SG./PL.
NON-HIGH	'ljo:s-e	<liofo>	'ljo:s-om	<liofom>	'light'-DAT.SG./PL.
	'segl-e	<fegle>	'segl-om	<feglom>	'sail'-DAT.SG./PL.

Old Norwegian has a continuous written record during the decay of its vowel harmony system in the 13th–14th centuries. As a part of the Medieval Nordic Text Archive, a large portion of this period’s manuscripts has been digitised in recent years in a form suitable for large-scale corpus linguistic research. Using this material, I illustrate novel corpus methods for tracking, visualising, and analysing harmony decay in historical corpora.

Fig. 1 provides a preliminary look at Old Norwegian harmony decay based on a sample of around 260,000 vowel sequences from nine 13th-century scribes. Fig. 1 displays the mean height harmony rate triggered by high, low, mid, and diphthongal vowels for each scribe in historically harmonising  $V_1$ – $V_2$  sequences. Here we see that an overall lower harmony mean (the reference line) is correlated with increasing dispersion in harmony rates across vowel classes, demonstrating that harmony decay is present in the corpus. The scribes on the left (DG8 – H4\_h1) illustrate robust harmony systems, where height correspondence is under tight control (high harmony and low variance). DG4\_7\_h1/h2 display transitional systems (lower harmony but still low variance), and the scribes on the right display more or less completed harmony decay (low harmony and high variance).



Manuscript	Provenance	Date
1 DG8	De la Gardie 8, fols. 70v–110v	Trøndelag c 1225–50
2 H6	Holm perg 6 fol	Eastern Norway c 1275
3 H34	Holm perg 34 4to	Bergen c 1275–1300
4 H4_h1	Holm perg 4 fol, fols. 11r–14v	Uncertain c 1275–1300
5 DG4_7_h1	De la Gardie 4–7, fols. 17v–29v	Bergen c 1270
6 DG4_7_h2	De la Gardie 4–7, fols. 30r–43v	Bergen c 1270
7 AM243	AM 243 b0 fol	Bergen c 1275
8 H4_h2	Holm perg 4 fol, fols. 15r–49v	Uncertain c 1275–1300
9 H17	Holm perg 17 4to	Uncertain c 1300

Figure 1: Mean harmony levels by manuscript  $V_1$ –height class in pairwise vowel sequences

Old Norwegian harmony decay displays a number of characteristics associated with decaying or decayed harmony systems, including changes to the vowel inventory (mergers/splits), a high rate of disharmonic morphemes, and gradient harmony patterns which peter out at increasing distances from the harmony trigger (Harrison, Dras & Kapicioglu 2006; Kavitskaya 2013; McCollum 2015, 2018; Bobaljik 2018). Using this corpus, I provide a detailed survey of the correlated causes and pathways of harmony loss in Old Norwegian as well as the first clear diagnostics of productive vs. decaying harmony systems, which will aid the typological study of harmony decay in other language families.