The life cycle of constraint rankings: studies in early English morphophonology

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Chapter 2 introduces the main principles of Stratal OT, contrasting them with those of rule-based LP. In the former, the stratal ascription of phonological processes is determined solely by their domain of application, and opacity effects arise exclusively from the serial interaction between cycles. In the area of learnability, the chapter highlights the advantages of deploying standard constraint ranking procedures in a stratal setting. Phonological acquisition is argued to proceed iteratively, with the input representations assigned at stratum *n* providing the data for constraint ranking at level *n–1*. The stratification of morphological operations is shown to be acquired by means of a mechanism of deferral: under certain conditions, if a morphological construction creates phonotactically unmotivated alternations at level *n*, the learner defers analysing that construction until level *n–1*. To detect opacity effects in non-alternating environments, the learner relies on a strategy of 'archiphonemic prudence', which ensures that the input representations assigned to non-alternating items at level *n* abide by the same phonotactic constraints at level *n–1* as those assigned to alternating items. These proposals are illustrated with a case study of the classic counterbleeding interaction between diphthong raising and flapping in Canadian English.

Chapter 3 shows how stratification establishes a nontrivial hierarchy of types of phonological generalization. Historically, sound patterns typically rise in this hierarchy, as they move from lower to higher levels through analogical change. The chapter argues that

analogical change typically involves the restructuring of input representations at some phonological level. Restructuring is driven by the learning algorithm presented in chapter 2: when the required evidence from alternations disappears from the learner's trigger experience, she reverts to the default identity map. The success of Stratal OT in dealing with the life cycle of phonological patterns is contrasted with the difficulties incurred by rule-based LP and strictly parallel OT.

In chapters 4 and 5, the rôle of input optimization in the life cycle of phonological constraint rankings is illustrated with a detailed analysis of the morphophonological evolution of *a*-stem nouns in Old English. Particular attention is paid to the emergence of the alternation patterns found in Alfredian West Saxon and to the transition to Ælfric's system. Comparative evidence is drawn from *Rushworth2* and, to a lesser extent, from the *Vespasian Psalter*.

In chapter 4, *a*-stem noun inflection is shown to have straddled two phonological levels in Old English: the neuter nominative/accusative plural ending *-u* (*-a*) was added at the stem level, whereas the other suffixes occupied the word level. Similarly, two phonological processes of rhythmic vowel deletion, usually conflated under the label 'High Vowel Deletion', turn out to be stratified: apocope applies at the stem level, whilst syncope is confined to the word level in conservative dialects but later percolates to the stem level.

Chapter 5 traces the diachronic evolution of the system from prehistoric times. It is shown that, in West Saxon, the input to the word stratum underwent a series of restructurings, which caused constraint rankings to climb from the word to the stem level. Each instance of restructuring followed a crucial shift in the pattern of surface alternations to which learners were exposed, and resulted in a reduction of input-output disparity (unfaithfulness) at the word level. This results corroborate the hypothesis that constraint rankings historically percolate from lower to higher grammatical levels, and they support a model of morphophonological change based on Stratal OT and driven by input optimization.

Chapter 6 discusses the stratification of morphological and phonological processes in the *Ormulum*. It shows that, in Orm's dialect, closed syllable shortening applied at the stem level and was counterfed by a word-level process of syncope. The analysis underpins the conclusions of chapters 3 and 4: it confirms that, by Early Middle English, the old processes of vowel insertion still active in Ælfric's dialect have been lost, and the old epenthetic vowels have been reanalysed (by input optimization) as underlying. The evidence of the *Ormulum* is also relevant to theoretical questions surrounding the rôle of lexical listing at the highest phonological level. In addition, it throws light on the subsequent history of English, particularly on the origin of lexical strata in Modern English.

The Conclusion summarizes the results of the monograph.