Non-finality Effects in Middle English Stress: Regularisation or Emerging Grammar?

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Abstract

The present paper looks at stress-shifting processes which transformed penultimate stress (pilgrimáːʒe, 'pilgrimage') into word-initial stress (pílgrima(ː)ʒ) in Middle English. The change also involved final-vowel deletion. The contact between the ME stress system and that derived from French loans seems to be resolved via regularisation in the direction of the borrowing language. However, we claim that this process of stress shifting already points towards changes in the English grammar of stress. We provide an Optimality Theory (Prince & Smolensky, 1993/2004; McCarthy & Prince, 1993) analysis of this phenomenon, suggesting that stress regularisation results from a *conspiracy* of both paradigmatic and grammatical forces. Not only does the resulting pattern (pílgrima(ː)ʒ) comply with the word-initial stress dominant pattern in OE and ME, but also it is less marked from a phonological viewpoint. This suggests an emerging grammatical role of the constraint NONFINALITY in ME grammar.

1. Introduction

Word stress is one of the most controversial areas of English phonology. Not only is it a field of undeniable complexity, but also one that has implications for phonotactics and syllable theory. From the origins of generative phonology (Chomsky & Halle, 1968) to more up-to-date approaches (Alcántara, 1998; Burzio, 1994; Cutillas, 2006; Hammond, 1999; Pater, 1995; Zamma, 2005) there has been a general agreement that it is possible to derive word stress from grammatical

interaction. In other words, most phonologists agree that word stress is not a purely lexical phenomenon, but rather one that can be accounted for by general principles. However, there has been considerable disagreement about the specific nature of these principles. In this paper, we look at Old English and Middle English stress patterns, to see to what extent these can account for some of the phenomena that current day phonology aims to explain.

One of the defining features of the transition from Old English (OE) to Middle English (ME) is the increase in the complexity of stress assignment mechanisms. OE was characterised by invariable initial stress (1a). Some prefixes, however, did not attract stress and consequently a group of prefixed words has penultimate stress (1b) – the examples are taken from Pyles & Alegeo (1993: 162).

(1) (a) *sángere* 'singer'
          ófferian 'to carry off'
          grípe 'grip, seize'

     (b) *wiðféohtan* 'to fight against'
          onbíndan 'to unbind'
          geháp 'convenient'

ME also followed a similar pattern, but the increasing number of loans from French introduced other possibilities in the English stress system (Mossé, 1991: 14-15) (2).

(2)   korá:ʒe 'courage'
          pilgrimá:ʒe 'pilgrimage'
          presénse 'presence'

This pattern, however, was later regularised to leftmost stress. Simultaneously, most accounts coincide that final 'e' was lost throughout the ME period (3).

(3)   kúra(:)ʒ 'courage'
          pílgrima(:)ʒ 'pilgrimage'

> présens   'presence'

In present day English, most approaches to stress would conclude that the words *courage* and *presence* receive word-initial stress because of extrametricality. As contemporary English is rightmost, it would be expected that the last syllables of *courage* and *presence* (both heavy) should attract stress, but the fact is that these are excluded from metrical analysis (4).

(4)   ˈkʌ<rɪdʒ>

             ˈpre<səns>

In this paper, we shall suggest an Optimality Theory (Prince & Smolensky, 1993/2004, McCarthy & Prince, 1993) analysis of stress in OE and a possible explanation for the adaptation of stress from the loan to the 'natural' stress pattern of ME. We shall analyse to what extent this adaptation is the result of principles and constraints that are active in present day English. However, the specificities of stress assignment in current-day English verbs and adjectives are beyond the scope of this paper.

2. Old English Stress

It is normally said that OE has fixed leftmost stress. In this paper we adopt an Optimality Theory approach (Prince & Smolensky, 1993/2004; McCarthy & Prince, 1993) whereby stress assignment is interpreted in terms of constraint interaction. Even the seemingly straightforward OE pattern should be explained as the result of grammatical choices and in accordance with the general theory of the grammar.

The first issue to consider is that OE does not establish prosodic word size limitations. Consequently, monosyllabic words must be stressed, even if they do not meet the prosodic conditions to build well-formed feet. In OT, this is encoded via the constraint in (5):

(5)   **ROOTING**: Lexical words have to be stressed.

As far as foot formation is concerned, OE inherits the typical Germanic foot characterised by quantity-sensitivity and initial prominence. In the terms of metrical phonology, it would be called a *moraic trochee*. This foot form is enforced by the following constraint:

(6)   **TROCHEE**: Feet have initial prominence.[1]

The fact that OE stress is assigned to the first syllable of the word can be captured with a fairly simple OT constraint: all prosodic heads have to be maximally aligned with the left edge of the word (5).

(7)   **ALIGN (Word, Left, Prosodic Head, Left):** The left edge of the prosodic head must coincide with the left edge of the word.

However, the effects of ALINGN-L overlap with the well-known phenomenon of final syllable destressing and final consonant extrametricality (Dresher & Lahiri, 1991). Both rules are suggested in order to account for the lack of primary or secondary stress in word-final position. In OT, this tendency is encoded via the constraint in (7).

(8)   **NONFINALITY:** Exclude the last syllable of the word from metrical analysis.

The only exception to this strict syllable-initial stress pattern is explained by the presence of some word-initial prefixes that do not bear stress. This apparent irregularity can be explained using Benua's (1995, 1998) output-to-output constraints. In short, these state that the grammar of the language may require that two basic forms coincide in phonological shape regardless of the affixes that may be added (6).

(9)   **IDENT O-O$_{STRESS}$:** The stress pattern of a basic form α must be preserved in the derived form $\beta\alpha$, i.e. the stress pattern of α must remain the same regardless of affixation.

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[1] The constraint TROCHEE just demands initial prominence. We would need a separate constraint FTBIN to enforce foot binarity, but for reasons of space we shall interpret the constraint TROCHEE as a constraint that subsumes the different requirements for trochaic foot well-formedness.

We should now proceed to establish the hierarchy of the constraints that we have just presented. The two constraints that are never violated in the OE grammar are ROOTING (all words carry lexical stress) and IDENT O-O$_{STRESS}$ (preserve the stress pattern of the basic word in the prefixed one). Immediately after those two, we would have to include TROCHEE and NONFINALITY, which can be violated to satisfy ROOTING. In the next stratum we would include ALIGN-L, which requires leftmost stress –although TROCHEE and NONFINALITY practically exclude non-leftmost patterns and are independently motivated. Finally, we would have the constraint ALIGN-R (feet should be aligned with the right edge of the word), totally dominated by all the other constraints. The resulting hierarchy is shown in (10).

(10)   ROOTING, IDENT O-O$_{STRESS}$ » TROCHEE, NONFINALITY »
        ALIGN-L » ALIGN-R

Let us see now how the ranking selects the correct candidates both for the non-suffixed (11) and suffixed words (12).

(11)

/sangere/	ROOTING	IDENT O-O$_{STRESS}$	TROCHEE	NF	ALIGN-L	ALIGN-R
a. san.ge.re	*!					
☞ b. (sán).ge.re						**
c. san.(gé.re)				*!	*	
d. san.(ge.ré)			*	*!	*	

(12)

/onbindan/	ROOTING	IDENT O-O$_{STRESS}$	TROCHEE	NF	ALIGN-L	ALIGN-R
a. on.bin.dan	*!					
b. (ón).bin.dan		*!				**
☞c. on.(bín).dan					*	*
d. on.bin.(dán)		*!		*	**	

Candidate (a) in both (11) and (12) represents the option of not analysing the word metrically, that is to say, not assigning primary stress. The violation of ROOTING is fatal. Candidate (b) is the optimal in (11), thus predicting the leftmost stress pattern. In contrast, candidate (b) in (12) is disregarded by IDENT O-O_STRESS, which requires identity between the non-suffixed form *bíndan* and the suffixed form *onbíndan*. Finally, candidate (d) is eliminated by the grammar because it violates both NONFINALITY and ALIGN-L.

3. Middle English Stress in Loanwords

It is arguable to what extent loanwords can actually cause changes in the phonological grammar of a language. It is reasonable to assume that the impact of loans will be related to their relative frequency. The ME period is one of considerable contact between words of a Saxon origin and French-based ones. As far as stress is concerned, these systems differ significantly. The OE system which we have just outlined is leftmost, with fixed stress except for the effect of prefixes. The medieval French system, on the other hand, is strictly rightmost, except when the nucleus of the last syllable is a schwa (Dresher & Lahiri, 2003). In terms of the analysis that we have just sketched in II, OE patterns are characterised by the effect of NONFINALITY and ALIGN-L, whereas the French patterns derive from the effect of ALIGN-R and the absence of NONFINALITY.

It is interesting to analyse how the contact between the two systems could have influenced the stress grammar of English from the ME period onwards. The most conservative option would be to assume that ME was not affected at all by French stress patterns. Speakers would just be echoing a foreign pronunciation, irrespective of the rules of their own language. In OT terms, we would just have a lexical specification of stress in loanwords accompanied by a FAITH STRESS constraint that would require outputs to be faithful to underlying stress patterns (13).

(13)

/korá:ʒe/	ROOT.	IDENT O-O_STRESS	FAITH STRESS	TROC.	NF	ALIGN -L	ALIGN -R
a. (kó).ra:.ʒe			*!	*			**
☞ b. ko.(rá:).ʒe						*	*
c. ko.ra:.(ʒé)			*!	*	*	**	
d. ko.ra:ʒe	*!		*				

Interestingly, tableau (13) shows that the actual FAITHSTRESS constraint is not necessary. If we submit the input /kora:ʒe/ to the OE grammar that we have outlined, we get the predicted results without resorting to lexical specification (14).

(14)

/kora:ʒe/	ROOTING	IDENT O-O_STRESS	TROCHEE	NF	ALIGN-L	ALIGN-R
a. (kó).ra:.ʒe			*!			**
☞ b. ko.(rá:).ʒe					*	*
c. ko.ra:.(ʒé)			*	*!	**	
d. ko.ra:ʒe	*!					

However, (14) does not seem to provide an answer for the following phenomena:

1) Why does the stress shift from the penultimate to the antepenultimate (leftmost) syllable?
2) Why is stress shifting (from *korá:ʒe* to *kóra:ʒe*) also accompanied by instability in spelling, to the extent of getting *cou-* or *corr-* as possible alternatives?
3) What is the relationship between stress shifting and final *e* dropping, which was taking place throughout the ME period?

4. The Middle English Constraint Hierarchy

Our proposal is based on the assumption that the ME constraint hierarchy is practically the same as that of OE, with a minor modification. Given that loans from French contradict the strictly leftmost pattern, we propose that the ME grammar incorporated non-ranking between ALIGN-L and ALIGN-R. In spite of that, the surface of the language would be hardly altered, because ROOTING, NONFINALITY and TROCHEE do practically all the job of stress placing without the help of a explicit ALIGN-L constraint (15).

(15)   ROOTING, IDENT O-O_{STRESS} » TROCHEE, NONFINALITY »
            ALIGN-L, ALIGN-R

In (16) and (17) we show how the hierarchy in (15) predicts the actual outputs with penultimate stress for the loans *corage* and *presence*.

(18)

/kora:ʒe/	ROOTING	IDENT O-O_{STRESS}	TROCHEE	NF	ALIGN-L	ALIGN-R
a. (kó).ra:.ʒe			*!			**
☞ b. ko.(rá:).ʒe					*	*
c. ko.ra:.(ʒé)			*	*!	**	
d. ko.ra:ʒe	*!					

(19)

/presense/	ROOTING	IDENT O-O_{STRESS}	TROCHEE	NF	ALIGN-L	ALIGN-R
a. (pré).sen.se			*!			**
☞ b. pre.(sén).se					*	*
c. pre.sen.(sé)			*	*!	**	
d. pre.sen.se	*!					

This proposed grammar relates to the final *e* dropping process in a very interesting way. Let us assume that, by the time the hierarchy

we have just sketched was established, *e* dropping starts to operate. As a result of it, inputs such as /kora:ʒe/ and /presense/ are transformed into /kora:ʒ/ and /presens/. This apparently minimal change would trigger stress variability, as we show in (20) and (21).

(20)

/kora:ʒ/	ROOTING	IDENT O-O$_{STRESS}$	TROCHEE	NF	ALIGN-L	ALIGN-R
☞a. (kó).ra:.ʒ			*			*
☞ b. ko.(rá:ʒ)				*	*	
c. (ko.ra:ʒ)			*	*!		
d. ko.ra:ʒe	*!					

(21)

/presens/	ROOTING	IDENT O-O$_{STRESS}$	TROCHEE	NF	ALIGN-L	ALIGN-R
☞ a. (pré).sens			*			*
☞ b. pre.(séns)				*	*	
c. (pre.sens)			*	*!		
d. pre.sens	*!					

The fact that two candidates (*a* and *b*) are selected by the grammar implies that each one of them occurs 50% of the time, i.e. they result in variable outputs. It is obvious that a smooth pattern of 50-50 variability is quite unlikely, but this can be solved by resort to more sophisticated ways of analysing and expressing variability in Optimality Theory. The interesting question is: how is this indeterminacy resolved?

One of the possibilities is altering the input form of words such as *courage* to obtain a well-formed trochee (22). Alternations in ME spelling (*cou-, corr*) would suggest that this is one of the solutions that were adopted.

(22)

/koura:ʒ/	ROOTING	IDENT O-O$_{STRESS}$	TROCHEE	NF	ALIGN-L	ALIGN-R
☞ a. (kóu).ra:.ʒ						*
b. kou.(rá:ʒ)				*!	*	
c. (kóu.ra:ʒ)			*	*!		
d. kou.ra:ʒe	*!					

The other logical option is modifying the grammar. Actually, input modification and grammar modification are not mutually exclusive: both processes could take place simultaneously. There are two main possibilities within the grammar modification approach: either the grammar gets back to the OE state, that is to say, ALIGN-L dominates ALIGN-R again or, alternatively, the ranking between TROCHEE and NONFINALITY is finally established. Now that we have linguistic evidence that the indetermination of the ranking of TROCHEE and NONFINALITY causes instability in the system, the ranking of the two constraints is justified. The resulting constraint hierarchy is shown in (23).

(23)   ROOTING, IDENT O-O$_{STRESS}$ » NONFINALITY » TROCHEE » ALIGN-L, ALIGN-R

This new constraint hierarchy selects the correct, regularised candidate and represents a minimal change from the OE patterns (24 and 25).

(24)

/presens/	ROOTING	IDENT O-O$_{STRESS}$	NF	TROCHEE	ALIGN-L	ALIGN-R
☞ a. (pré).sens				*		*
b. pre.(séns)			*!		*	
c. (pre.sens)			*!	*!		
d. pre.sens	*!					

(25)

/koura:ʒ/	Rooting	Ident O-O_{stress}	NF	Trochee	Align-L	Align-R
☞ a. (kóu).ra:.ʒ						*
b. kou.(rá:ʒ)			*!		*	
c. (kóu.ra:ʒ)			*!	*		
d. kou.ra:ʒe	*!					

The interesting fact about the hierarchy in (24) and (25) is that it does not make an explicit statement in favour of rightmost stress – which is supposed to have arisen in later stages of the history of the language– and enables the language to cope with new latin-based loans while keeping the basic surface pattern of leftmost stress.

5. Conclusion

One of the striking properties of English stress assignment is that it changed drastically from a leftmost OE system to a rightmost NE one. However, in spite of this change bisyllabic words of a Saxon origin are not affected. In this paper, we show that the actual grammar of English does not make strong, explicit statements about stress alignment (i.e. leftmost or rightmost). Rather, surface patterns derive from the prevailing influence of NONFINALITY effects that can be tracked from OE to our days –which connects with the concept of *pertinacity* in Dresher & Lahiri (2005). The same grammar produces different surface patterns depending on whether the inputs (i.e. the vocabulary) are mainly bisyllabic or more complex. In later stages of the language, ALIGN-R will have to dominate ALIGN-L, but this will take place in a relatively low hierarchical level.

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