

The influence of loanwords on Norwegian and English stress

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Abstract

Rice (2006) presents a unified analysis of Norwegian word stress that applies equally to native words and to loanwords. In this analysis, stress is oriented to the right edge of the word, which suggests that the loanwords were responsible for changing what was originally a left-oriented grammar of stress. In this paper I consider a similar reorientation that took place in the history of English, also under the influence of Romance loanwords. Closer examination shows that the two cases appear to be different. Many loanwords of the sort that caused a change in Norwegian entered Middle English without causing any significant change in English stress. It was only in the Early Modern English period that the loanwords were able to impose a right-oriented stress pattern on English. Rice (2006) observes that the loanwords were able to change the Norwegian stress pattern without overtly contradicting the native words; that is, the loanwords could make a change only in aspects of the grammar where the native words were ambiguous. I argue that this principle also accounts for the English case.

1. Introduction

Rice (2006) presents a unified analysis of Norwegian word stress that applies equally to native words and to loanwords.* He observes that native words are typically limited to monosyllables, and to disyllables with a first syllable that is stressed and heavy and a second syllable consisting of a short vowel. This limited repertoire of stress patterns is compatible with a number of different analyses. However, Norwegian also has many loanwords which have been in the language a long time and may be considered to be thoroughly nativized. These words exhibit a wider variety of patterns, and when they are included, they constrain the number of possible analyses. Whereas the native words are compatible either with left-side oriented stress (stress the first syllable) or right-side oriented stress (stress the penult if there is one), the loanwords unambiguously require stress to be oriented to the right side.

Rice's analysis has interesting implications when we view Norwegian stress in a diachronic perspective. We know that early Germanic stress was oriented to the left side (Halle 1997; Lahiri, Riad & Jacobs 1999: 336; Harbert 2007: 79), which would lead us to suppose that this was the original orientation of the native words. That modern Norwegian stress is oriented to the right implies that the grammar of stress underwent a change at some point, from orientation to the left to orientation to the right. Moreover, Rice's discussion suggests that this reorientation was caused by the importation of loanwords.

Norwegian is typical of the entire Germanic family in this respect. Lahiri, Riad & Jacobs (1999: 376–7) observe that Romance loans had a significant effect on the Nordic as well as the West Germanic languages: “from a predominantly initial stress pattern, all the Germanic languages (other than Faroese and Icelandic) developed a metrical pattern where the parsing began from the right edge.” Though the general effects of loanwords may be similar across the Germanic family, the specific ways in which the loanwords were incorporated and influenced the native stress patterns differ from language to language. It is instructive to compare the Norwegian case as presented by Rice (2006) with a similar reorientation that

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occurred in English (Dresher & Lahiri 2005). English, however, also gives us examples where loan words did not cause a change in the grammar of stress. It is interesting, therefore, to compare these cases, to see if we can arrive at a general statement of the conditions under which loan words can cause a change in the native grammar of stress. I will expand on Rice's observation that the Norwegian loanwords changed the grammar precisely where the native words were ambiguous and the loan words were unambiguous.

In §2, I briefly recap Rice's (2006) discussion of native and loanword stress patterns in Norwegian. In §3, I review what appears to be a contrasting case, when a large influx of words from Norman and French failed to cause any fundamental change in Middle English stress. In §4, I consider a later period when a large number of Romance loanwords did cause a change in the grammar of Early Modern English stress. In §5 I draw some conclusions from comparing the Norwegian and English cases.

2. Norwegian native and loanword stress patterns

According to Rice (2006: 1172), Norwegian native words present a very limited set of stress patterns and syllable types. There are three types of monosyllables: open syllables with a long vowel (1a); syllables with a long vowel followed by a short consonant (1b); and syllables with a short vowel followed by a long consonant or a consonant cluster (1c).¹ Following Rice's practice, the examples are in Norwegian orthography, which does not indicate vowel length; however, I have added stress marks, which are not in the orthography.

(1) *Native monosyllables*

a. V: $\bar{\text{C}}$	b. V: $\bar{\text{C}}$	c. VCC
<i>fé</i> 'fairy'	<i>hát</i> 'hatred'	<i>hát</i> 'hat'
<i>lé</i> 'shelter'	<i>vís</i> 'manner'	<i>víss</i> 'certain'
<i>bí</i> 'bee'	<i>sték</i> 'steak'	<i>stékk</i> 'to clip wings, imp.'
<i>hí</i> 'lair'	<i>púr</i> 'pure'	<i>púrr</i> 'to remind, imp.'

Native disyllables have a stressed first syllable followed by an unstressed open syllable with a schwa. Rice (2006: 1173) observes that, as in the monosyllables in (1b) and (1c), there is complementary distribution between vowel and consonant length in examples like (2); the first syllable either has a long vowel (2a), or a short vowel followed by a geminate consonant (2b).²

(2) *Native disyllables*

a. V: $\bar{\text{C}}\text{ə}$	b. VCCə
<i>tápe</i> 'to lose'	<i>táppe</i> 'to tap'
<i>strípe</i> 'stripe'	<i>stríppe</i> 'to strip'
<i>báne</i> 'field, lane'	<i>bánne</i> 'to swear'
<i>kúbe</i> 'cube'	<i>kúbbe</i> 'log'

As Rice points out, these stress patterns can be analyzed in a number of ways. Assuming that non-final coda consonants are moraic, monosyllables must have two moras, as do the stressed syllables of disyllables; in other words, they must be heavy syllables (H). The unstressed final syllable of a disyllable has only one mora; that is, it is a light syllable (L). Apart from the two-mora requirement, the monosyllables are uninformative as to the grammar of stress. The disyllables, too, are consistent with a variety of different analyses: stress can be oriented to the left side (stress on the initial syllable), or to the right side (stress on the penult); they can be moraic trochees or iambs with an unparsed final light syllable, (H) L, or uneven trochees (H' L). As in all early Germanic languages, early Norwegian stress

¹ Rice's examples in the (1c) category are limited to geminates to show the complementary distribution of vowel and consonant length; native words ending in a consonant cluster also exist.

² As with the monosyllables, there are native words of type (2b) with non-geminate consonant clusters.

was computed from the left, and the native words in (1) and (2) are consistent with such an analysis. If we look only at native words, it appears that this aspect of the grammar of Norwegian stress has not changed.

Rice (2006) argues that this analysis would be incorrect, however, because modern Norwegian has absorbed numerous loanwords with more diverse patterns that are not all consistent with stress oriented to the left. Loanwords can have final stress when the final syllable has a long vowel (3a–b), or is closed by a geminate or by a consonant cluster (3c); or antepenultimate stress (3d) when the final two syllables are /*(C)V.CV(C)*/ (Rice 1999: 547–8); or penultimate stress (3e) when the conditions for (3a–d) are not met (note that some consonant clusters count as only a single consonant, like the final cluster in *appéndiks*). Following the two-mora rule, stressed vowels in (3d–e) are long if in an open syllable, and short if in a syllable closed by a consonant. The examples in (3) are taken from Rice (1999) and Rice (2006).

- (3) *Loanwords: types of stress*
- | | |
|---------------------------|--|
| a. Final stress with V: | <i>akribí, debút, depót, obó, orkidé</i> |
| b. Final stress with V:C | <i>alfabét, elektrón, natúr, pirát, tomát</i> |
| c. Final stress with VCC | <i>agúrk</i> ‘cucumber’, <i>fagótt</i> ‘bassoon’, <i>hospíts</i> ‘hospice’, <i>trafíkk</i> |
| d. Antepenultimate stress | <i>Amérika, álgebra, Pánama, léksikon, Jerúsalem</i> |
| e. Penult stress | <i>álbum, bíson, éddik</i> ‘vinegar’, <i>appéndiks, bikíni, makaróni</i> |

It is evident that many of these loanwords are not compatible with stress being oriented to the left. For example, *akribí* and *orkidé* have an initial heavy syllable that would attract stress if stress were assigned from the left. Similarly, a left-oriented trochaic stress system would assign stress to the initial syllables of words like *appéndiks* and *makaróni*. Also, the conditions for antepenultimate stress depend on the syllable structures of the final two syllables, which again suggests an orientation to the end of the word, not the beginning. Therefore, the loan words together suggest a Romance-type stress system oriented to the right side of the word.

Since the native words in (1) and (2) are equally consistent with either orientation, a unified grammar of modern Norwegian stress is possible, as Rice (2006) proposes, with some key properties, such as directional orientation, decided by the loanwords.³ Moreover, given that Norwegian once had stress oriented to the left (Lahiri, Riad & Jacobs 1999), it must have been the loanwords that provoked a reanalysis of the orientation of Norwegian stress.

3. Romance loanwords in Middle English

The reader may have noticed that a number of the loanwords in (3) that have final stress in Norwegian have also been borrowed into English. In English, however, they have not retained the original stress of the donor language, but occur with initial stress. That is, the stress of the Romance words in (4) was changed to conform to the native English system.

- (4) *Some loanwords in (3) with initial stress in English*
- | <i>Loanword</i> | <i>First attested</i> | <i>Source</i> |
|-------------------|-----------------------|---|
| a. <i>nature</i> | c1275 | Anglo-Norman and Old French, Middle French |
| b. <i>faggot</i> | a1300 | French, ‘bundle of sticks’, in ME spelled <i>fagett</i> , <i>faggott</i> , etc. |
| c. <i>traffic</i> | 1505 | Various Romance languages around the Mediterranean |
| d. <i>oboe</i> | 1726 | Italian version of French <i>hautbois</i> (cf. <i>háutboy/hóboy</i> 1575) |
| e. <i>depot</i> | 1794 | French, originally borrowed with final stress, cf. <i>depôt</i> |
| f. <i>hospice</i> | 1818 | French |
| g. <i>orchid</i> | 1843 | Scientific Latin <i>orchideae</i> (cf. <i>orchídeous</i> 1818) |

³ Somewhat different analyses of Norwegian stress are presented in Rice (1999) and Rice (2005). The two analyses take different approaches to the status of vowel length, and how the grammar meets the requirement that stressed syllables all have two moras. What is important here is that both analyses require stress to be oriented to the right end of the word.

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3.1 The native Old English stress system

Apart from unstressed prefixes, main stress in Old English was on the initial syllable (5). Following Dresher & Lahiri (1991), Lahiri, Riad & Jacobs (1999), Dresher & Lahiri (2005), and Fikkert, Dresher & Lahiri (2006), I assume that the Old English metrical system can be characterized as in (6).⁴ The Germanic Foot is an expanded moraic trochee which allows feet of the type (H L), (L L), and (H), where H is a heavy syllable (having a long vowel or closed by a consonant) and L is a light syllable (a short vowel in an open syllable). Old English, like some other languages, requires a stress to be supported by at least two moras; what is a bit unusual is that when the initial syllable is light, this requirement is satisfied not by lengthening the vowel of the initial syllable, but by recruiting the second syllable to contribute the second mora. This process, called resolution, is supported by Old English high vowel deletion and by metrical evidence (Dresher & Lahiri 1991). Resolution adds feet of the form ([L L] L) and ([L H] L) to the repertoire of the Germanic Foot. Some sample parsings are given in (7).

- (5) *Old English main stress*
- a. Main stress falls on the initial syllable of a word.
 - b. Certain prefixes do not receive a stress.
- (6) *Old English stress: metrical analysis*
- a. Germanic Foot: From left to right, construct a resolved and expanded moraic trochee of the form ([head] dependent), where the head must consist of at least two moras and the dependent may have at most one mora.
 - b. Main stress is on the leftmost foot.
 - c. Defoot a foot that does not carry the main stress, is final in the word, and has no dependent.
- (7) *Old English stress: sample parsings*
- | | | |
|--|---|---|
| <p>a. <i>wórda</i> ‘head, GEN. PL.’</p> <p style="text-align: center;">x
(x .)
([μμ] μ)
H L
wór da</p> | <p>b. <i>wéruda</i> ‘troop, GEN. PL.’</p> <p style="text-align: center;">x
(x .)
([μ μ] μ)
L L L
wé ru da</p> | <p>c. <i>cýninga</i> ‘king, DAT. SG.’</p> <p style="text-align: center;">x
(x .)
([μ μμ] μ)
L H L
cý nin ga</p> |
| <p>d. <i>lófu</i> ‘dwelling, NOM. PL.’</p> <p style="text-align: center;">x
(x)
([μ μ])
L L
ló fu</p> | <p>e. <i>ōþer</i> ‘other, NOM. SG.’</p> <p style="text-align: center;">x
(x) (✱)
([μμ]) ([μμ])
H H
ō þer</p> | <p>f. <i>ōþerne</i> ‘other, ACC. SG.’</p> <p style="text-align: center;">x
(x) (x .)
([μμ]) ([μμ] μ)
H H L
ō þer ne</p> |

In (7a), the initial heavy syllable has two moras and occupies the head of the foot; the second syllable is light (one mora), and occupies the dependent branch. In (7b), the initial syllable is light, and so the second light syllable joins it to make up the head position of the foot. The third syllable occupies the dependent position. Example (7c) is similar, except resolution is with a heavy syllable; in such cases, the heavy syllable does not receive a secondary stress. Example (7d) is like (7b), but without a dependent. In (7e), the second heavy syllable can form the head of a foot, but because it is word final and has no dependent, its foot mark is removed (indicated by ✱), and it receives no secondary stress (Campbell 1959: 34–5;

⁴ The analysis does not account for unstressed prefixes; I assume these are lexically marked in some way. See Minkova (2006) for a different analysis.

Dresher and Lahiri 1991: 259–61; Hogg 1992: 49–50).⁵ In (7f), the addition of a light syllable allows the second foot to receive a secondary stress.

3.2 *Stress patterns of Romance loanwords in Middle English*

After the Norman conquest of 1066 many Romance words, mainly Anglo-Norman and Old French, were borrowed into English. These words were stressed according to the rule in (8) (Halle & Keyser 1971: 100–1); a metrical analysis is given in (9).⁶

- (8) *Romance main stress*
 a. Stress the final vowel unless it is a schwa: *abbót, chanóun, degré, honóur, vertú*.
 b. Otherwise, stress the penultimate vowel: *divíne, Egípte, exiled, govérne, servíce*.
- (9) *Romance stress: metrical analysis*
 a. Construct iambs from right to left.
 b. A final light syllable is extrametrical.
 c. Main stress is on the rightmost foot.

There is evidence that Romance words could retain their original final or penultimate stress when they were first borrowed, at least in verse. Hence, we find many stress doublets in Chaucer, words of Romance origin that could be stressed according to either the French or native English (initial stress) pattern, as required by the meter. A small sample of these is given in (10).

- (10) *Stress doublets in Chaucer*
citée ~ cíte; comfórt ~ cómfort; divérs ~ díverse; fortúne ~ fórtune; geáunt ~ géant; licóur ~ lícour; Plató ~ Pláto; presént ~ préésent; serváunt ~ sérvant.

Based partly on the evidence of doublets like in (10), some writers (Halle & Keyser 1971; Lass 1992) have proposed that the Romance right-edge oriented stress rule gained a foothold in English in this period, though it did not become the main stress rule of English until some time later. I take the view of those who argue that this wave of loanwords did not have any lasting impact on English stress (Jordan 1974: 199; Minkova 1997; 2006; Redford 2003; Dresher & Lahiri 2005). Thus, the descendants of most of the doublets in (10) have initial stress in Present Day English (PDE), as shown in (11a).⁷

- (11) *PDE reflexes of doublets in (10)*
 a. *Initial stress*
city, comfort, fortune, giant, liquor, Plato, present (NOUN), servant.
 b. *Final stress*
diverse, present (VERB).

Some words in (10) retain final stress in PDE (11b). Such words would not have been entirely anomalous with respect to Old English stress patterns. Old English had many unstressed prefixes, more commonly on verbs than on nouns; hence, there are pairs like *án-gīn* ‘beginning’ ~ *an-gínnan* ‘to begin’, *bī-gēnga* ‘inhabitant’ ~ *be-gān* ‘to occupy’, *ín-stæpe* ‘entrance’ ~ *in-stæppan* ‘to enter’, etc. (Hogg 1992: 48–9).

⁵ In some cases a final heavy syllable retains a secondary stress; see Russom (2001) for detailed statistics, and Minkova (2006) for discussion.

⁶ There are other ways to characterize this pattern in metrical terms, but the key point, for our purposes, is that the stress has to be oriented to the right edge of the word. See Lahiri, Riad & Jacobs (1999) and Roca (1999) for diachronic and synchronic overviews of Romance stress.

⁷ Minkova (2006: 113–14) argues that the degree to which Romance words could fluctuate between native and Romance stress has been overstated; she finds that “the combined evidence of the use of underived nouns and adjectives in alliterative and syllable-counting verse indicates an overwhelming pattern of initial stress”.

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Therefore, Romance words—particularly verbs, but also adjectives and nouns—with initial unstressed syllables that look like prefixes could fit into this native English pattern (Minkova 2006: 114).

Further, the vast majority of Romance words borrowed in this period survive in PDE with initial stress (Lahiri & Fikkert 1999; Svensson & Hering 2005). This is shown by a sampling of disyllabic Romance loans borrowed before the fifteenth century, shown in (12).

- (12) *Disyllabic Romance loanwords borrowed before 1500*
- a. *Initial stress (stem vowel is short in PDE)*
talent (893), *baron* (1200), *senate* (1205), *jealous* (1250), *palace* (1290), *channel* (1300), *gallon* (1300), *panel* (1300), *coral* (1305), *profit* (1325), *metal* (1340), *satin* (1366), *moral* (1380), *volume* (1380), *second* (1391), *Latin* (1391).
 - b. *Initial stress (stem vowel is long in PDE)*
basin (1220), *moment* (1240), *vacant* (1290), *odour* (1300), *process* (1330), *paper* (1374), *raisin* (1382), *patent* (1387), *famous* (1400).
 - c. *Final stress*
diverse (1297), *reward* (1340), *divine* (1374), *degree* (1380).

The question is why the Anglo-Norman loanwords did not have the same effect on English as similar Romance loanwords had on Norwegian. One key may be Rice's observation that loanwords in Norwegian did not contradict the native words, but rather introduced new patterns of word stress that were unambiguously right oriented, whereas the edge orientation of native words was ambiguous. Like Norwegian, Middle English words tended to be metrically short, but their patterns were not as restricted as in Norwegian. Therefore, many loanwords with non-initial stress would have conflicted with the native patterns. For example, the stress in loanwords in (13a), with original stress on either the final or penult, would have conflicted with the pattern of native words in (13b) (Minkova 2006).

- (13) *Trisyllabic words with medial heavy syllables*
- a. *Romance loanwords with final or penultimate stress*
harbinger (1175), *character* (1315), *interval* (1300), *manacle* (1350), *galaxy* (1384).
 - b. *Native words*⁸
mártyrdom, *máidenhod*, *tónneful*, *stédefast(e)*.

Similarly, Romance disyllables with final stress like those in (12) would have run up against many native disyllables with initial stress, such as *water*, *herring*, *thousand*, etc.⁹ Therefore, the situation in early Middle English was not similar to that described by Rice (2006) for Norwegian. Despite the influx of a substantial number of Romance loanwords, the grammar of English stress was not altered by them; rather, the loanwords were assimilated to the native pattern.

4. Romance loanwords in Early Modern English

Since PDE has right-oriented stress, it is clear that the native system was eventually affected by the flood of Romance loanwords. PDE has many words of Romance origin that have retained final stress, as shown in (14). As can be seen from the dates of their earliest attestations, these words tend to have been borrowed later than the words in (12).

⁸ These words may have had secondary stresses on the third syllable, especially when it was not word final, as in Old English; hence, *stédefast* ~ *stédefaste*.

⁹ Many of the Romance words in (12) would have had a long final vowel when stressed as in Anglo-Norman (Lass 1992). This pattern did not exist in native Middle English words, and all the words in (12) had their final vowel shortened. Even if the vowel had remained long, these words would have conflicted with English words with syllable patterns L H or H H which were all stressed on the initial syllable, whether it was light or heavy.

- (14) *Disyllabic Romance loanwords with final stress in PDE*
cement (1300) (but ME *síment* had initial stress until the 19th c.), *canal* (1449), *bourgeois* (1564), *gazelle* (1582/1700), *moustache* (1585), *gazette* (1605), *hotel* (1644), *champagne* (1664), *ballet* (1667), *salon* (1715), *bouquet* (1716), *brochure* (1765), *beret* (1850).

Between the Middle English period discussed above and Early Modern English, something tipped the balance in favour of the loanwords. Borrowing from Latin began on a large scale in late Middle English and increased in Early Modern English (Kastovsky 2006: 167). Latin words were stressed by the rule in (15) (Roca 1999), and a metrical analysis is given in (16).¹⁰

- (15) *Latin main stress*
- a. Stress the penultimate syllable if it is heavy: *amícus* ‘friend’, *omítto* ‘I lose’, *reféctus* ‘restored’.
 - b. Otherwise, stress the antepenultimate syllable, if there is one: *dóminus* ‘master’, *fěmina* ‘woman’, *refíciunt* ‘they...restore’.
 - c. Otherwise, stress the first syllable: *vénīs* ‘you-SG. come’, *cónsul* ‘consul’, *méns* ‘mind’.
- (16) *Latin stress: metrical analysis*
- a. Build quantity-sensitive trochees from the right edge of the word.
 - b. A final syllable is extrametrical.
 - c. Main stress falls on the rightmost foot in the word.

Like the earlier wave of French loanwords, the stress pattern of the Latin words was different from the native one in various respects. However, the Latin words were more diverse than the earlier French words, and when added to Romance borrowings which continued to come in from French, they were able to influence the grammar of stress in areas where evidence from the native words was less robust.

Dresher & Lahiri (2005) propose that the grammar of stress did not change all at once from ‘Germanic’ to ‘Latin’; rather, the transition to right-oriented stress came in two stages, as set out in (17).

- (17) *Approximate dates of changes in English metrical structure*
- Foot = Resolved moraic trochee throughout.
- a. –1530 Foot direction *left*, main stress *left* (as in Old English).
 - b. 1530 Foot direction *right*, main stress *left*.
 - c. 1660 Foot direction *right*, main stress *right*.

4.1 *Shift in directionality (edge orientation)*

The first significant change was a shift in directionality (edge orientation), from left to right, which happened around 1530. Danielsson (1948) and Poldauf (1981) associate this change with the accumulation of words with Latin and French suffixes such as *-abl-ible*, *-ation*, *-ator*, *-ic(al)*, *-ity*, etc. In such forms, stress is computed from the right side: for example, *medícinal* and *philosóphical* can be assigned stress by a unified rule computing from the right edge (both have stress on the antepenult), but not from the left edge.

Latin words had been borrowed into English in the earlier periods as well. Minkova & Stockwell (1996) and Lahiri & Fikkert (1999) argue, however, that Latin words were originally borrowed as morphologically simplex. Thus, *réverence* was not initially derived from *revére*, nor *ábstinence* from *abstáin*. Often, the ‘derived’ word was borrowed earlier, as can be seen from the word pairs in (18).

¹⁰ Latin feet can be analyzed either as uneven trochees or as moraic trochees; see Hayes (1995: 91–2) and Lahiri, Riad & Jacobs (1999: 378–88) for discussion.

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- (18) *'Derived' words borrowed earlier than 'underived' words*
abstáin (1380) ~ *ábstinence* (1300); *confíde* (1455) ~ *cónfidence* (1430); *reside* (1460) ~ *résident* (ADJ.) (1382); *finite* (1493/1597) ~ *ínfinite* (1385); *potent* (1500) ~ *ímpotent* (1390); *preside* (1611) ~ *président* (1375); *revere* (1661) ~ *réverence* (1290).

Notice that the 'derived' words all have initial stress consistent with the native English pattern. These word pairs are problematic for a synchronic analysis that tries to relate them (for further discussion see Lahiri & Fikkert 1999; Drescher & Lahiri 2005).

What appears to have made the difference is that in this later period Romance borrowings were so common that their morphological composition could be recognized by English speakers. At that point English speakers could identify recurring morphemes, such as derivational suffixes.¹¹ The rightward directionality of stress in words with these suffixes could then become apparent. Consider in this regard the words in (19).

- (19) *Alternations with suffix -al that point to right-edge orientation of stress*
accidéntal (c1400) ~ *áccident* (c1400); *instruméntal* (1398) ~ *ínstrument* (c1290); *matrimónial* (1449) ~ *mátrimony* (1357); *medícinal* (1384) ~ *médicine* (?c1225); *original* (a1325) ~ *óorigin* (c1450); *philosóphical* (a1425) ~ *philósophy* (c1325); *poétical* (c1450) ~ *póet* (a1382); *sacraméntal* (c1400) ~ *sácrament* (c1175); *satírical* (a1529) ~ *sátire* (1509); *univérsal* (a1393) ~ *úniverse* (a1425).

Once native speakers could decompose these words into their constituent morphemes (at least into stems and suffixes), then a learner could arrive at right-edge computation of stress along various paths. Thus, a comparison of a derived word with its base would show stress being moved to the right under the influence of the suffix: for example, *áccident* ~ *accidéntal*, *úniverse* ~ *univérsal*, etc. Alternatively, a comparison of words with the same suffix would show the same thing: for example, *accidéntal*, *univérsal*, with stress on a penultimate heavy syllable, contrast with *medícinal*, *satírical*, which have light penults and stress on the antepenultimate syllable.

Unlike earlier periods, the English native words did not provide robust conflicting evidence with respect to this aspect of stress.¹² Monomorphemic words were metrically short, and were ambiguous with respect to directionality. Words with native suffixes, as in (13b), operated differently from the Romance suffixes, and it is presumably from this period that the bifurcation into stress-affecting and stress-neutral suffixes originated. If native suffixes are treated as stress-neutral, they do not contradict computation of stress from the right edge.

4.2 Shift in main stress from left to right

Though the directionality of stress shifted from left to right, the position of main stress remained on the left for some time after. Danielsson (1948) attributes to Walker (1791) the observation that classical words were pronounced, in the English pronunciation, with alternating secondary stresses two before the tonic (main stress). For example, English speakers pronounced Latin 'academy' as *àcadémia*, and the French version as *acàdemie*. When pronounced as English words, the tonic and countertonic (secondary

¹¹ Kastovsky (2006: 168) cites a corpus-based study by Dalton-Puffer (1996) as establishing that "the real productivity of Romance and Latin derivational patterns would seem to have started during the Early Modern English period, when a certain critical mass of borrowings and analogical formations had accumulated to get the derivational processes going". See also Nevalainen (1999).

¹² Poldauf (1981: 339) observes that English 'occasionally denied the character of a cluster to *nd*, *mb*, *ld*, and *st*', as in *lávender*, *cáalendar*, *ágrandize* (besides *aggrándize*), *cólumbine*, *Géraldine*, *minister*, *tápestry*, etc. See Fournier (2007) for more complete lists of such exceptions. Fournier argues that the weight of the penultimate syllable is relevant only in limited word classes, part of his larger argument that the PDE stress system is the result of a merger of Germanic and Romance principles.

stress) changed places to conform to English ‘speech habits’ (e.g., *academy* from Latin or *academy* from French). In terms of a metrical analysis, this switch, which Danielsson (1948) dubs the Counter-tonic Principle, amounts to putting the main stress on the leftmost foot (which does not necessarily include the leftmost syllable when the direction of computation is from the right). Thus, the directionality of stress assignment has changed from left-to-right to right-to-left, but main stress is still assigned to the leftmost foot, as in earlier English.

Dresher & Lahiri (2005) note that the addition of words stressed according to the Counter-tonic Principle would have *increased* the evidence for main stress left. Thus, a word with two stresses like *academy* has two feet, of which the left has the main stress. In this case, the same words that provoked a change of directionality to right reinforced the evidence for main stress left.

It is not clear what exactly ultimately caused main stress to shift from left to right. The sheer accumulation of Romance loanwords may have had something to do with it, as did their prestigious status.¹³ At some point, the Counter-tonic Principle was given up, and main stress shifted to the right side: earlier *academy* began to be pronounced *academy*.¹⁴ According to Danielsson (1948: 29), the year 1660 was the ‘turning point’ when French words kept final accent in English, as with the suffixes in (20).¹⁵

- (20) *Suffixes retaining main stress*
- a. *Suffixes: -ade, -ee, -eer, -esque, -ette, -oon.*
 - b. *Words with final stressed suffixes in PDE*
parade (1656), payee (1758), cannoneer (1562), grenadier (1676), arabesque (1611),
musette (1811), bassoon (1727).

Though some words like those in (20b) may have entered the language before 1660, they may not have systematically retained final stress until around that date. It is plausible to suppose that final stress in words with these suffixes became more systematic after the change of main stress to the right edge.

5. Conclusion

Though most Germanic languages have changed from a left-oriented to a right-oriented stress pattern, the conditions under which these changes occurred are not all the same. As we have seen, the types of loanwords that provoked the change in Norwegian did not have the same effect in Middle English. I have argued above that this is because Middle English displayed a wider variety of native word patterns than did Norwegian as described by Rice (2006). In particular, English had words that contradicted the stress patterns of the majority of Romance loanwords. My hypothesis is that in such a direct conflict between native words and loanwords, the native words will win.

Later, however, the Romance loanwords became so numerous and morphologically complex that Romance suffixes could be recognized as such in English. The contradiction in stress behaviour between native and Romance suffixes could be resolved by creating two morphological strata: native suffixes were assigned to the word level and became stress neutral, and an additional stratum of stress-affecting

¹³ See Adamson (1999: 571–6) for an account of the enthusiasm for Latin or Latin-sounding words in this period. Barber (1997: 222) writes that the number of Latin loanwords rose steadily throughout the sixteenth century, was very high after 1590, and peaked in the decade 1651–1660.

¹⁴ English retains many words with main stress to the left of a secondary stress, particularly with certain suffixes as in *sedentary*, *testimony*, *anticipatory*, *hominoid*, etc. In a synchronic grammar of PDE, Halle & Keyser (1971) analyze such words as being subject to rules of stress retraction. See also Lass (1999: 128–33) for discussion of the history of such forms.

¹⁵ In 1660 the Restoration began with the return of King Charles II from exile. According to Blake (1996: 238): “The antipathy towards anything foreign, particularly if it had a papist tinge, shown by the Puritans was replaced by the wish to emulate all that was sophisticated and modern in France in particular. Latin loanwords became less frequent as French loans proliferated.”

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(Romance) suffixes was created, with stress oriented to the right edge. As there was no compelling native data providing contradictory evidence, the Romance loanwords prevailed with respect to directionality. Even then, main stress remained on the leftmost foot for some time after.

I conclude that the principle in (21), suggested independently by Dresher & Lahiri (2005) and by Rice (2006), is upheld by these data:

(21) *Conditions under which loanwords can affect the native grammar*

Hypothesis: Loanwords can change the grammar in those areas where the native words do not provide unambiguous conflicting evidence.

Because the Norwegian native word patterns were very restricted, they were compatible with a relatively simple set of new loanword patterns, which were able to change the grammar. The English native word patterns were also relatively restricted, but not as much as the Norwegian. Therefore, the influx of Romance loans in Middle English met with resistance from the native words, and the stress system did not change. The more complex and numerous loanwords in the Early Modern English period, however, were able to provide evidence for rightward orientation that the native words could not contradict.

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