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Variably stressed -ion-words

It is well-known that the suffix -ion “invariably throw[s] the stress on to the syllable preceding [it]” (Kingdon 1949, 148); e.g., attribution, compensation, evolution, etc. A lesser known fact is that in addition to being stressed evolution (Oxford Dictionaries, henceforth OD), with primary stress regularly occurring upon the syllable preceding -ion, evolution is also pronounced /ˈɛvəˈl(j)uːʃn/ (OD), with the secondary stress of evolution being promoted to primary stress. The same applies to compensation, for which the second edition of Upton and Kretzschmar’s The Routledge Dictionary of Pronunciation for Current English (henceforth RDPCE) gives only the regular stress pattern compensation (2017, 256). But in YouTube videos containing the spoken occurrences of this word, there is also the stress pattern ˈcompenˌsation, with stronger stress occurring initially rather than penultimately.1

Apart from variably stressed -ion-words such as compensation and evolution, which involve an interchange of primary and secondary stress, there are also variably stressed -ion-words such as humiliation, in which secondary stress interchangeably occurs upon different syllables. That is, /hjʊˌmɪlɪˈeɪʃn/ or /ˌhjuːmɪlɪˈeɪʃn/ (RDPCE 2017, 627), with secondary stress being either pen-initial or initial.

To the best of my knowledge, students of English stress have thus far not paid any attention to these empirical facts; that is, there does not seem to exist a single study that is specifically concerned with variably stressed -ion-words such as compensation, evolution, humiliation, etc. What follows below is thus an attempt to fill in the research gap.

1. Primary Penultimate Stress

The focus of this article is on the question of why, e.g., evolution is sometimes stressed /ˈɛvəˈl(j)uːʃn/, with its secondary stress being promoted to primary stress. To begin with, however, we first consider the question of why evolution is stressed /ˌɛvəˈl(j)uːʃn/ (RDPCE 2017, 454), with its primary stress regularly occurring upon the syllable preceding -ion. According to Vassilyev,

[jit was the use in English speech of short words, many of which are unstressed form words, that has created the […] rhythm consisting of alternating a stressed syllable with an unstressed one. This rhythmic tendency of English speech must have caused the appearance in borrowed polysyllabic words of a secondary stress on the syllable separated from the word-final principal stress by one unstressed syllable. These words began to be pronounced, in isolation, on the model of short phrases in which a stressed syllable alternates with an unstressed one. Thus, a word like radical, borrowed from French, was originally stressed on the last syllable. Later, while this stress was still retained, this word received the recessive stress on the initial syllable, the result of which was the characteristically English alternation of a stressed syllable with an unstressed one.

1 Excerpts from YouTube videos illustrating particular claims can be downloaded from https://tinyurl.com/ycwym8oo [02.10.2018].
For some period of time this and other words had two stresses (radical). But gradually the stress on the last syllable began to weaken because it was contrary to the strong native English tendency to recessive word-stress. [...] The accentuation of words ending in the suffix -ion with its variants -sion, -tion, -ation is also rhythmical in its origin and has developed in the same way as the accentuation of the words like radical, family. Originally, the suffix -ion consisted of two syllables of which the last one bore the accent of the word and was preceded by the unstressed /ə/. Later, as in radical, the syllable preceding this /ə/ received rhythmical stress. Then, also as in radical, the last stressed syllable gradually lost its stress, with the result that only the rhythmical stress remained.

At the same time the unstressed /ə/ was changed to /j/. In those words in which this /ə/ was preceded by /s/ or /z/ it merged with the latter so that the sounds /ʃ/ and /ʒ/ appeared in their place. This explains the modern pronunciation, as well as the accentual pattern, of such words as nation /ˈneɪʃən, ˈneɪʒən/, occasion /ˈə.kʃən/, opinion əˈpɪnjən/. (Vassilyev 1970, 273-274)

Vassilyev's explanation is quite obviously a diachronic explanation, which takes into account the etymological history of English words; that is, for instance, the fact that the English word evolution is etymologically due to the Latin word évolutiónem (Oxford English Dictionary, henceforth OED), in which stress occurs upon the heavy penult /ə/. (i.e., the Latin Stress Rule states that in a word of three and more syllables, stress is penultimate when the penult is heavy – which means that it contains a long vowel or is closed – or antepenultimate when the penult is light). But what about contemporary English speakers, who often do not have any command of the Latin (or any other foreign) language. How do they arrive at the stress pattern evolu{tion}?

As argued by Halle and Keyser, because "[i]n the three hundred years that intervened between the Norman Conquest and Chaucer, the [English] language was inundated by Romance words," (1971, 97) the stress rule of Present-day English is "all but identical with the stress rule of Classical Latin" (1971, 3). That is, for example, the English word evolution should receive penultimate stress because its penultimate syllable /l(j)uː/ contains a long vowel in the nucleus position and counts therefore as a heavy syllable.

An obvious problem with this approach is that -ion-words in contemporary English are not only words such as evolution, whose segmental structures are in accordance with the Latin Stress Rule, but also words such as, for instance, condition – /kənˈdɪʃ(ə)n/ (RDPC 2017, 262) – in which stress irregularly occurs upon the light penult /d/. Note that according to Crystal's The Oxford Dictionary of Original Shakespearean Pronunciation, Early Modern English speakers used the tetrasyllabic pronunciation /kənˈdiʃən/, in which the stressed antepenult /d/ is preceded (moving from right to left) by the unstressed penult /s/, which ends in a short vowel and counts therefore as a light syllable (2016, 113). The segmental structure of condition thus used to be in accordance with the Latin Stress Rule.

As explained by Vassilyev, the Present-day English pronunciation /kənˈdɪʃ(ə)n/ is the result of two phonetic processes: 1) hiatus resolution (i.e., /kənˈdiːʃən/ → /kənˈdiʃən/, with the preceding vowel of the hiatus /e/ being replaced through the phonetically similar glide /ʃ/); and 2) yod coalescence (i.e., /ʃʒ/ → /ʃ/ in words such as condition and /ʒ/ → /ʒ/ in words such as decision) (1970, 274). In summary, the change /kənˈdiʃən/ → /kənˈdɪʃ(ə)n/ has given rise to a segmental structure that does not respect the Latin Stress Rule. This change has not, however, given rise to a new stress pattern.
in condition; that is, the word is still stressed con’diction rather than *condi’tion, which would abide by the Latin Stress Rule. According to Chomsky and Halle,

[the] best way to deal with exceptions is to modify their representations in some ad hoc way so as to enable them to fall under the regular rules, which can then remain unaltered in their simplest and most general form. Thus the fact that -ion always places primary stress on the syllable immediately preceding it is easily accounted for if we give -ion the underlying representation /ɪn(h)/hɪˈbɪt/; /N/ standing for the archi-segment “lax vowel.” (Chomsky and Halle 1968, 87)

Note, however, that in the Longman Dictionary of Contemporary English (henceforth LDOCE), there are 934 polysyllabic -ion-words for which a hyphenation is given, in which boundaries between syllables are marked by means of the boundary symbol (∙). For example, cham·pi·on, condi·tion. Of these, 913 (~97.75%) are hyphenations such as con·di·tion, in which the orthographic sequence io belongs to the same (final) syllable, and only 21 (~2.25%) are hyphenations such as cham·pi·on, in which this sequence is regarded as a hiatus. Words such as champion are, however, not always pronounced with a hiatus. For 10 (~47.62%) words such as champion, the MRC Psycholinguistic Database (Wilson 1988) gives a hiatus-resolving pronunciation, such as /ˈtʃamˌpiˌon/; the -ion of words such as champion (accordion, medallion, scorpion, etc.) can thus be said to vacillate between the phonetic realizations /ˈtʃamˌpiˌon/ and /ˈtʃamˌpiˌon/. By contrast, the -ion of the 913 words such as condition is in Present-day English never phonetically realized as /ˈtʃamˌpiˌon/; the hiatus i,o is always resolved in these words. It seems, then, that if condition were underlyingly con·di·tion rather than con·di·tion, a hiatus-involving pronunciation such as the Early Modern English /ˈkənˌdiˌʃ(ə)n/ would still be used by English speakers as an alternative to the hiatus-free /ˈkənˌdiˌʃ(ə)n/. The claim that -ion is underlyingly -i.on not only in words such as champion but also in words such as condition thus does not seem to be convincing.

In a more recent study, the stress pattern /ˈkənˌdi·ʃ(ə)n/ is attributed to the prefixation analysis con- + -dition (cf. tradition) (Tokar 2017, 107). That is, “[s]tress tends to be placed near edges of constituents (phrases, words, stems, etc.). This is the demarcative property, which has been argued to facilitate the processing of grammatical units in perception” (Kager 2004, 144; italics in original). Indeed, because, as observed above, a prototypical contemporary English speaker does not have any command of the source language Latin, the irregular penultimate stress of the English word inhibit – /ˈhɪˌbɪt/ (RDPCE 2017, 675), where the penult /ˈhɪ/ is light – cannot be attributed to the regular antepenultimate stress of the Latin etymon word inhibitus (Dictionary.com), in which the penult /bi/ ends in a short vowel and counts therefore as a light syllable. To account for the stress pattern /ˈhɪˌbɪt/ in the target language English, we can assume that for a contemporary English speaker, inhibit is morphologically in- + -hibit (cf. exhibit, prohibit), of which the latter is more like a (bound) root whereas the former is more like a prefix. The location of the stress in the Present-day English word /ˈhɪˌbɪt/ is thus, as argued by Tokar, the root – prefix boundary location (2017, 7).

A problem with this approach, however, is that if the stress pattern /ˈhɪˌbɪt/ is to be attributed to the prefixation analysis in- + -hibit, then also the stress pattern /ˈm(ə)ˈbɪn/ (RDPCE 2017, 675) should be attributable to the prefixation analysis inh-i- + -bition. The morphological structure of inhibition is, however, quite obviously inhibit + -ion, not inh-i- + -bition. Similarly, in contrast to words such as condition and tradition, in
the case of the suffixed derivative edition (edit + -tion), the segmentation into the prefix e- and the bound root -dition would be extremely counterintuitive.

The most plausible answer to the question of why condition is (by Present-day English speakers) stressed /kənˈdɪʃ(ə)n/ is that the stress pattern of this word is simply stored in English speakers’ mental lexica; that is, English speakers simply learn the word condition together with its stress pattern /kənˈdɪʃ(ə)n/, which therefore does not need to be in accordance with either the Latin Stress Rule or the morphological segmentation into the prefix con- and the bound root -dition. As for suffixed derivatives such as edition, inhibition, etc., we can also speak of a highly productive affix stress rule (Kettemann 1988, 121-122), which places stress upon the syllable preceding -ion (cf. 1988, 329, concluding that "[d]ie Wortbetonung von Ableitungen ist entweder im Lexikoneintrag suppletiv gespeichert oder wird über eine affixspezifische Betonungsvorschrift in die Ableitung eingeführt, oder beide Möglichkeiten werden parallel genutzt," i.e., the stress of a derived word is either stored in a corresponding lexicon entry or arrived at via an affix-specific stress rule, or these possibilities are both made use of).

The same approach can also be used to account for segmental alternations such as decide/decilization, which Chomsky and Halle attribute to the trisyllabic laxing rule (1968, 182). That is, assuming that the suffix -ion is underlingly polysyllabic (i.e., -i.on rather than -ion), the stress of the derivative decision is not penultimate but antepenultimate: deˈci.si.ɔn. Of the 9,200 stressed antepenults in the above mentioned MRC Psycholinguistic Database (Wilson 1988), 6,581 (~71.53%) have a short vowel in the nucleus position. The tense/long vowel /aɪ/, which receives stress in the base decide, changes then into the lax/short vowel /ɪ/ in the derivative decision.

Note, however, that /desɪˈzɪʃn/ (PONS) is the pronunciation of decision in the source language French, from which it was directly imported into English (OED). That is, decision did not come into existence in English via suffixation from decide. It was therefore not English speakers who did the shortening/laxing of /aɪ/ to /ɪ/. An alternative explanation for the segmental structure deci/lization is thus that it is simply stored in an English speaker’s mental lexicon, together with the stress pattern deˈci.sɪ.ɔn, which is the promoted secondary stress of the etymological pronunciation deˌɛˈsiːi.ɔn. (Note also that, as reported by Kettemann (1988, 129), in the case of the nonsense words veris/verision, the alternation /aɪ/ → /ɪ/ was carried out in 47.5% of the answers obtained from 40 native American English speakers, whereas in 45% of the answers, the stressed vowel of both verise and verision was the diphthong /aɪ/. Alternations such as dec/ai/de vs. dec/lization thus hardly have a rule status in contemporary English.)

2. Promoted Secondary Stress

It is an often-mentioned fact that in English, "[n]o word can begin with two unstressed syllables" (Fournier 2007, 222). Additionally, (not only in English, but also cross-linguistically) "adjacent stressed syllables make speech sound jerky" (Kingdon 1949, 149). In accordance with these two principles, a tetrasyllabic -ion-word such as evolution usually receives secondary stress upon its first syllable – evo lution – whereas a pentasyllabic -ion-word such as dynamization can receive either initial or pen-initial secondary stress: dynamiz ation vs. dynami zation (RDPCE 2017, 399).

Many -ion-words whose syllabic length is five or more have, however, only one secondary stress pattern; e.g., organi zation, so lici tation (RDPCE 2017, 936, 1265).
In the following, we first address the issue of why the secondary stress of an -ion-word is sometimes promoted to primary stress (i.e., why in addition to *evolution*, there is also the stress pattern *evolution*) and then discuss cases of multiple secondary stress patterns such as *dynamization* vs. *dy nam i zation* (i.e., if *dynamization* is secondary-stressed on either its first or second syllable, why is the same not true of *organization* and *solicitation*, which have only one secondary stress pattern?).

### 2.1 Eurhythmy

According to Cruttenden,

> [w]hen a word (simple or compound) pattern consists in isolation of a primary accent preceded by a secondary accent, the primary accent may be lost completely, if, in connected speech, another primary accent follows closely in the next word.[\(^\text{(Cruttenden 2014, 307)}\)]

For example, for *Japanese*, the LDOCE gives the phonetic transcription /ˌdʒæpəˈniːz◄/, which contains the stress shift symbol (◄). The actual stress pattern of *Japanese* is thus on some occasions the initially stressed /dʒɑ̆pəniːz/, with the secondary stress of /ˌdʒæpəˈniːz/ being promoted to primary stress. To begin with, observe that the suffix -ese of *Japanese* is of Italian origin (Dictionary.com). The etymological reason for the final primary stress in the English word *Japanese* is thus the penultimate stress of Italian words such as *giapponese* /dʒap.po.ˈne:.se/ (PONS). Because, however, the adjective *Japanese* often modifies an initially stressed head (*Japanese government*, *Japanese companies*, *Japanese people*, *Japanese market*, *Japanese cars*, etc.), the pronunciation /ˈdʒæpəniːz/ is from the point of view of rhythm better than the etymological pronunciation /ˌdʒæpəˈniːz/.

Note, however, that stress shifts such as /ˌdʒæpəˈniːz◄/ also occur in English in words such as /ˌpɪəriˈɒdɪk◄/ and /ˌæbəˈrɪdʒɪnəl◄/ (LDOCE), in which the primary-stressed syllable is separated from the right word boundary by at least one unstressed syllable. Pronunciations such as *periodic table* and *aboriginal people* would therefore not involve stress clashes. To account for stress shifts such as /ˌpɪəriˈɒdɪk◄/ and /ˌæbəˈrɪdʒɪnəl◄/, Hayes observes that "adjacent stresses are strongly avoided; stresses that are close but not adjacent are less strictly avoided; and at a certain distance (perhaps four syllables) the spacing becomes fully acceptable" [1995, 372].

The problem with this claim, however, is that it is entirely based upon Hayes’ introspection rather than upon an experimental or corpus study; that is, it is not known – as of today – whether the *Japanese* of the combination *Japanese government* is indeed more likely to receive initial primary stress than the *periodic* of *periodic table* and the *aboriginal* of *aboriginal people*. (In YouTube videos containing the spoken occurrences of *aboriginal people*, the stress shift /ˌæbəˈrɪdʒɪnəl◄/ seems to be no less categorical than the stress shift /ˌdʒæpəˈniːz◄/ in the combination *Japanese government*. That is, in the combination *aboriginal people*, the modifier is almost exclusively stressed /ˌæbərɪdʒɪnəl/.)

Consider also the word *lemonade*, for which the LDOCE gives the phonetic transcription /ˌleməˈneɪd◄/, the actual stress pattern of *lemonade* is thus on some occasions the initially stressed /ˈleməneɪd/. As reported by Tokar, "16 occurrences of *lemonade* in environments such as *lemonade bottle* constitute only ~7.51% of the 213 total occurrences of *lemonade* in the BNC“[2017, 116] (i.e., British National Corpus).
An even more obvious case is *evolution*, which has 2,500 total occurrences in the BNC. Of these, only 26 (~1.04%) are occurrences in the modifier position (e.g., *evolution theory*), with *evolution* being followed by a noun. Likewise, if all *-ion*-forms in the BNC are taken into consideration, the corresponding proportion is (23,535/773,450 =) ~3.04%. This means that *-ion*-nouns in contemporary English are in general relatively rarely followed by other nouns. The role of rhythm in triggering stress shifts such as

\[ \text{evo}lution \rightarrow \text{evolution} \]

is thus at best marginal.

### 2.2 Emphasis

A much more intuitive explanation for why the secondary stress of an *-ion*-noun is promoted to primary stress is emphasis, which has also often been identified in the literature as a trigger of stress shifts that involve an interchange of primary and secondary stress (see, e.g., Kenyon & Knott 1953, xxv; Friederich 1967, 62; Berg 2008, 165). Indeed, because *evolution* contrasts semantically with *revolution*, the stress patterns *evolution* and *revolution* are better than *evo*ˈlution and *revo*ˈlution; that is, the stress of *evolution* and *revolution* should fall upon the strings *e*- and re-, which make these two semantically opposite words formally different from each other. The same applies to such pairs as *immigration–emigration*, *inhala*ˈtion–exhalation*, *introversion–extroversion*, etc.

Noteworthy are also the following numbers. Of the 526 secondary-stressed *-ion*-words in the LDOCE in which secondary stress precedes primary stress (i.e., words such as *evo*ˈlution), 502 (~95.44%) are words such as *evolution*, whose righthand strings such as /ˈluːʃən/ (i.e., strings that follow the primary stress symbol) occur in at least one other *-ion*-word. For example, apart from the word *evolution*, there are also the words *absolution*, *convolution*, *devolution*, *dissolution*, *resolution*, and *revolution*, which all end in /ˈluːʃən/. The median number of words (in the LDOCE) with which an *-ion*-word shares its righthand string such as /ˈluːʃən/ is 32. (The maximum number is 55 – the strings /ˈreʃən/ and /ˈteʃən/ of, e.g., *admiration* and *imitation* – and the minimum number is one. E.g., *contemplation* is the only secondary-stressed *-ion*-word that ends in /ˈpleʃən/.)

The importance of this finding stems from the fact that according to Becker, there is a law that prohibits words in close context from receiving stress upon identical syllables (2012, 76). In accordance with this principle, in combinations such as *evolution and revolution*, *immigration and emigration*, *inhala*ˈtion and exhalation*, *introversion and extroversion*, etc., the primary stress of an *-ion*-noun should occur initially rather than penultimately; that is, *evolution and revolution* rather than *evo*ˈlution and *revo*ˈlution, where the primary stresses would occur upon the segmentally identical syllables /ˈluː/.

Similarly, as I report elsewhere in the combination *acceleration and deceleration*, we hear either the stress pattern *ac*ˈceleration and *de*ˈceleration or *ac*ˈceleration and *de*ˈceleration, with only one of these words receiving initial stress (Tokar 2018, 174). In accordance with Becker’s law, this combination may not be stressed either *ac*ˈcel*ration and de*ˈcel*ration, where the stresses fall upon the segmentally identical syllables /ˈseɪ/ and /ˈreɪ/, or *ac*ˈceleration and *de*ˈceleration, where the stresses fall upon the segmentally identical syllables /ˈseɪ/ (2012, 76). For *acceleration and deceleration* to be stressed upon segmentally non-identical syllables, at least one of these -celeration-words must receive initial primary stress.
A superficially similar case is the words \textit{coordination} and \textit{subordination}, which share the string \textit{ordination}, but in the combination \textit{co ordination} and \textit{su bordination}, these words receive pen-initial stress. Observe that because the \textit{b} of \textit{subordination} is the onset of the second syllable /ˈbɒː/ rather than the coda of the first syllable /səb/ – i.e., \textit{subordination} is phonetically /səˈbɔːdi neɪʃən/ (OD) – the stress pattern \textit{co ordination} and \textit{su bordination} does not violate the principle of not placing stress upon segmentally identical syllables. The pair \textit{coordination–subordination} is thus different from the pair \textit{acceleration–deceleration}.

Consider, however, 55 /ˈteɪʃn/-words such as \textit{imitation}, for which the LDOCE gives the phonetic transcription /ˈɪmɪˈteɪʃn/. The actual stress pattern of \textit{imitation} is thus at least on some occasions /ˈɪmɪ(ˈ)teɪʃn/, with stronger stress occurring initially rather than penultimately. In the BNC, there are only seven types of \textit{-tation} combinations (consisting of only five \textit{-tation}-words), which occur only 12 times: \textit{consultation} and \textit{representation}, \textit{documentation} and \textit{interpretation}, \textit{exploitation} and \textit{expectation}, \textit{imitation} and \textit{interpretation}, \textit{interpretation} and \textit{adaptation}, \textit{presentation} and \textit{interpretation}. Similarly, in the corpus there are only 231 lines on which one \textit{-tation}-word occurs after another \textit{-tation}-word. For example, \textit{precipitation} and \textit{temperature} is also greatly affected by the balance of \textit{thermal energy at the land surface, itself affected by the vegetation}. The median number of spaces occurring between two different \textit{-tation}-words (on the same line in the BNC) is 14. Thus, we can say that even when two different \textit{-tation}-words occur on the same line, they do not occur in the immediate vicinity.

Note also that in WordNet, a lexical database for English, only the \textit{-tation}-word \textit{gravitation} is said to be the antonym of the \textit{-tation}-word \textit{levitation}, and only 14 \textit{-tation}-words are said to be co-hyponyms of other \textit{-tation}-words (Miller 1995). For instance, \textit{agitation} and \textit{irritation} are both psychological states; \textit{disputation} and \textit{recitation} are both instances of public speaking; \textit{exportation} and \textit{importation} are both commercial activities; etc. Co-hyponyms/heteronyms can also often be seen as semantically opposite terms (see e.g., Löbner 2002, 91-92). For example, \textit{exportation} is the directional opposite of \textit{importation}, and \textit{delection} contrasts semantically with \textit{lamentation} (i.e., in WordNet, \textit{enjoyment}, \textit{delection} and \textit{lamentation}, \textit{mourning} are said to be co-hyponyms of the hypernym \textit{activity}).

To conclude: The explanation that is invoked in this section to account for the stress shift \textit{evo lution} → \textit{evolution} cannot be invoked to account for the stress shift \textit{im'i tation} → \textit{imitation}; that is, \textit{-tation}-words such as \textit{imitation} are rarely used in the immediate vicinity of other \textit{-tation}-words, and also from a semantic point of view, only few \textit{-tation}-words express opposite meanings.

Finally, even if we assume that the stress shift \textit{im'i tation} → \textit{imitation} is due to the meaning of the word \textit{imitation}, which an English speaker wishes to emphasize via stress (i.e., according to Hogg and McCully "[t]he primary task of emphatic stress is to draw attention to events, objects, beliefs, etc. which the speaker feels are especially worthy of note. As such, anything can receive emphatic stress") (1987, 3), there still remains the question of why the emphatic stress pattern of \textit{imitation} should necessarily be \textit{imitation} rather than \textit{im'i tation}. Indeed, as observed by Price,

\[\text{[i]} \text{t frequently occurs in English, and in other languages that have the normal stress on a fixed syllable, that that syllable is given an even greater degree of prominence, i.e. is pronounced with even more energy than normally, as one way of expressing some kind}\]

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of emotion or reaction, e.g. surprise, indignation, anger, pleasure, terror, relief, disgust, admiration, or for some other expressive purpose such as uttering a request or a warning. This can be illustrated by such sentences as the following, in which the stressed syllable is printed in bold type:

What a wonderful view!

He’s gone and bought a harpsichord!

Stupid!

I’ve seen him!

He’s fantastically clever!

Please don’t forget!

Take that disgusting thing away!

We shall refer to this particular type of stress as **emphatic stress**. (Price 2005, 46-47; emphasis in original)

In other words, when an English speaker wishes to emphasize that the thing referred to is an imitation rather than the original, he or she can merely pronounce the primary-stressed syllable of imitation with a greater degree of prominence (i.e., e.g., louder) than usual. An interchange of primary and secondary stress is then not the only means of emphasizing the word imitation (which, as established above, does not contrast semantically with/occur in the immediate vicinity of other English -tion-nouns).

### 2.3 General (i.e., Recessive) Tendency

As explained in section 1, radical is no longer stressed \( \text{ˌra} \text{ˈdɪcəl} \) – with primary stress occurring upon the same syllable as in the Latin etymon \( \text{rādīˈcālis} \) (OED) and secondary stress falling on the alternate syllable to the left – because the stress pattern \( \text{ˌra} \text{ˈdɪcəl} \) "was contrary to the strong native English tendency to recessive word-stress" (Vassilyev 1970, 273). That is, the stress pattern \( \text{ˌra} \text{ˈdɪcəl} \) was reinterpreted by English speakers as \( \text{ˈrɒdɪkəl} \), with 1) what was originally supposed to be secondary stress being promoted to primary stress; and 2) what was originally supposed to be primary stress being completely destressed. That is, /ˈrɒdɪkəl/ (OED), with the formerly stressed \( \text{ult} \) containing a schwa in the nucleus position and thus not bearing any degree of stress: "a syllable of English is completely stressless if its vowel is schwa" (Hayes 1995, 12). A very similar example is calendar, which is etymologically due to the antepenult-stressed Latin word calendārium (OED). The English word calendar was therefore originally stressed \( \text{ˌcaləndər} \), with primary stress occurring upon the same syllable as in the Latin etymon word \( \text{calen} \ˈdərium} \) and secondary stress falling on the alternate syllable to the left. In Present-day English, however, calendar is stressed /ˈkæləndər/ (OED), with its original secondary stress having been promoted to primary stress. (Note that if contemporary English did indeed place primary stress in accordance with the Latin Stress Rule [i.e., penultimate stress if the penult contains a long vowel or is closed], calendar would, in accordance with this principle, be stressed upon its closed penult /\( \text{jən} \). Likewise, the word comparable would not be pronounced /ˈkɒmpərəbəl\) [OED], with the stress being pre-antepenultimate, for which the Latin Stress Rule does not have a provision. That is, stress can only be penultimate when the penult is heavy.
or antepenultimate when the penult is light. The reason why *comparable* is stressed /ˈkɒmpərəb(ə)l/ is that it etymologically goes back to the French *compa*rable*, which, in turn, is however, due to the Latin *compa*rābilis [OED], in which the stress is on the antepenultimate syllable *rā*, because the penultimate syllable *bi* contains a short vowel and is not closed. The stress pattern ‘*comparable*’ is thus the promoted secondary stress of the etymological pronunciation *compa*rable*, in which 1) the primary stress occurred upon the same syllable as in the French *compa*rable*/Latin *compa*rābilis; and 2) the secondary stress fell upon the alternate syllable to the left. The etymological history of the stress pattern ‘*comparable*’ is thus very similar to that of ‘*calendar*’.

Notice now that what Vassilyev refers to as the recessive tendency is essentially the Old English Stress Rule, which placed stress “on the initial syllable of nouns, adjectives and verbs derived from them and on the root syllable of words which belonged to other parts of speech and had a prefix” (1970, 271). Assuming that this rule/tendency is still alive in contemporary English, we can argue that the primary stress of *imitation* is sometimes initial rather than penultimate because the primary stress pattern *imitation* (which is the promoted secondary stress of *imi* *tati* *on*, which preserves the penultimate stress of the Latin *imitati*ō *nem*) is not in accordance with this rule. That is, the primary stress of *imitation* is post-pen-initial (i.e., falls upon the third syllable counting from the beginning of the word), but the Old English Stress Rule only has provisions for initial and pen-initial stress.

Indeed, if only the most frequently used English words are taken into account, their stress patterns “may very well be interpreted exclusively in terms of a Germanic type of logic” (Fournier 2007, 236). That is, “[t]he higher-frequency words, i.e., the ones most often heard in real speech, are shorter and more likely to have just a single stressed syllable that is either the word-initial syllable (*garbage*, *borrow*, *numbers*) or the only syllable (*trash*, *take*, *math*)” (Cutler 2015, 110). Stress shifts such as *ˌi* *mi* *tati* *on* → *ˌi* *mi* *tati* *on* can thus be said to increase the number of English words in which there is only one stressed syllable that is the word-initial syllable.

This claim is strongly supported by the following numbers. The OD dictionary has 95,781 solidly spelled entries that contain 122,025 primary-stressed transcriptions; that is, transcriptions that contain the primary stress symbol (ˈ). Of these transcriptions, only 55,231 (~45.26%) are transcriptions such as /ˈɛvəluːʃ(ə)n/, in which the primary stress symbol occurs immediately after the transcription opening symbol (/). If all polysyllabic English words are taken into consideration, initial primary stress is then not the majority pattern. At the same time, however, of the 30,428 secondary-stressed transcriptions that occur in 24,187 solidly spelled entries in the same dictionary, 25,151 (~82.66%) are transcriptions such as /ˌiːvəluːʃ(ə)n/, in which the secondary stress symbol (ˌ) occurs immediately after the transcription opening symbol (/). Assuming that a phonetic transcription such as /ˌiːvəluːʃ(ə)n/ can correspond to a pronunciation such as /iːvəluːʃ(ə)n/, with the secondary stress of the former being promoted to primary stress in the latter, the percentage of initially stressed transcriptions in OD rises to (80,382/122,025 =) ~65.87%. Somewhat surprisingly, however, Vassilyev claims that

the recessive and rhythmic tendencies ceased to be operative in determining the position of stress in English words which were borrowed from French after the beginning of the 15th century. In these words the accent has remained on the final syllable, as in French […]. The tendency arose to keep the accentual pattern, and the pronunciation in general,
of newly borrowed words the same, or as nearly the same as possible, as they were in the language from which the words were borrowed. The reason for this lay, apparently, in the new channels through which borrowings began to be made – not by the people itself from the actual speakers of the strange language in the process of everyday contacts with them, as the case was during the Norman Conquest, but second-hand, so to speak, through the educated members of the nation who knew foreign languages, or through reading which was more widely spread then, due to the greater spread of literacy among the broad masses of the population. (Vassilyev 1970, 277-278)

A case in point seems to be -ic-words, whose present-day stress patterns crucially depend upon whether they were borrowed into English from French vs. Latin. For example, if the English word catholic retained the final stress of the French etymon word catholique (OED), the former would be stressed /ˈkæθəˌlɪk/ with the first syllable receiving alternating secondary stress. The stress pattern of the English word catholic is, however, /ˈkæθəˌlɪk/ (OED), with its original secondary stress having been promoted to primary stress. The same is true of the stress patterns ‘Arabic and a rithmetic, which are due to the etymological pronunciations Ara’ bic and a rithme’ tic.

The penult-stressed -ic-word ironic is, by contrast, etymologically due to the Latin word ɪrónicus (OED), in which the antepenultimate syllable rō, receives stress because the penultimate syllable ni. ends in a short vowel and counts therefore as a light syllable. The English /aiˈrɒnɪk/ (OED) thus merely preserves this stress pattern of the source language Latin.

Recall in this connection that in accordance with the Old English Stress Rule, a word can receive pen-initial stress only if its first syllable counts morphologically as a prefix. The morphological segmentation of ironic into irony and the suffix -ic makes, however, much more sense than the prefixation analysis i- + -ronic. The stress pattern /aiˈrɒnɪk/ is thus hardly attributable to the Old English Stress Rule. A very similar case is the stress pattern America, which is the preserved antepenultimate stress of “Americus, Latin form of Amerigo; after Amerigo Vespucci” (Dictionary.com). To account for this stress pattern by means of the Old English Stress Rule, we must assume that America is morphologically a prefixed derivative: A- + -merica. This analysis is, however, extremely counterintuitive.

Consider, however, violin, which, according to the OED, is pronounced not only /vɑɪˈlɪn/, retaining the penultimate stress of the Italian violin – /vi.o.ˈli:n/ (PONS) – but also /vaɪˈlɪn/, with the secondary stress of the etymological pronunciation vio lin being promoted to primary stress. (Note that when the hiatus sequence /ai.ə/ is pronounced as the triphthong /aiə/ – i.e., /vɑɪˈlɪn/ rather than /vɑɪˈlɪn/ – the stress pattern vio lin, with the first syllable not receiving secondary stress, is from the point of view of rhythm better than ? vio lin, which involves a sequence of two stressed syllables. When, however, the sequence /aiə/ is analyzed as the hiatus /ai.ə/, the antepenult of the ult-stressed trisyllable vi. o lin is supposed to receive secondary stress in accordance with the above mentioned principle of not beginning a word with two unstressed syllables.) What is interesting about the case of violin is that, according to the OED, this word has existed in English since 1579. (Similarly, according to the OED, the above mentioned catholic, which promoted the secondary stress of .cathoˈlic to primary stress, has been used by English speakers since 1551.) An even more recent example is the end-stressed last name of the Russian ice-hockey player Ilya Kovalčuk,
which is "mispronounced" by English speakers as 'Kovalchuk, with what is supposed to be secondary stress – i.e., Koval’ chuk–being promoted to primary stress.

In disagreement with Vassilyev, this article argues, then, that the recessive and rhythmic tendencies did not cease to be operative in the English language after the beginning of the 15th century. What in Present-day English is, however, far less operative than it used to be in earlier periods is the recessive tendency that does not accompany the rhythmic tendency. That is, the LDOCE has 4,551 solidly spelled entries whose transcriptions contain the secondary stress symbol (ˌ). Of these entries, 1,107 (~24.32%) are secondary-stressed entries such as imitation, whose transcriptions contain the stress shift symbol (ˈ). By contrast, of the 21,769 solidly spelled entries whose transcriptions contain only the primary stress symbol (ˈ) but not the secondary stress symbol (ˌ), only 375 (~1.72%) are entries such as abdomen, for which the LDOCE gives more than one stress pattern (i.e., initial and pen-initial stress). For example, abdomen is stressed both /æbˈdəmən/ and /æbˈdəmən/ (LDOCE), with the latter being the etymological penultimate stress of the Latin abdōmen (OED), which has a long vowel in the stressed penult .dō. A similar case is (in Present-day English, predominantly initially stressed) acumen, which, however, was originally pronounced /ˈa.kju.ə.men/ (OED), retaining the penultimate stress of the Latin acūmen; according to the OED, "[p]ronunciation with stress on the first syllable was first noted in the mid 20th cent." A chi-squared test indicates that the difference of 1,107/4,551 vs. 375/21,769 is statistically hugely significant – \( \chi^2 (1) = 3.619, p < 0.000001 \)–which allows us to say that stress shifts such as \( \text{imitation} \rightarrow \text{ imitation} \), which involve an interchange of primary and secondary stress, are in contemporary English much more probable than stress shifts such as \( \text{ab domen} \rightarrow \text{ abdomen} \) and \( \text{a cumen} \rightarrow \text{ acumen} \), which involve only primary stress.

The etymological pen-initial stress of an English word, such as \( \text{ab} \text{ domen} \) and \( \text{a} \text{ cumen} \), is thus a fairly stable stress pattern. (The fact that in addition to the etymological stress patterns \( \text{ab} \text{ domen} \) and \( \text{a} \text{ cumen} \), there are also the stress patterns \( \text{abdomen} \) and \( \text{acumen} \) suggests, however, that the recessive tendency has not completely disappeared from the English language.) The etymological post-pen-initial stress, such as \( \text{vi} \text{.ol in} \), or any other primary stress that is not initial or pen-initial is, by contrast, an extremely unstable stress pattern. E.g., of the 630 finally stressed trisyllables in the LDOCE, 230 (~36.51%) have a stress doublet; barricade is stressed either /ˈbærəkɛid/ or /ˈbærəˈkɛɪd/. As for the other words, it also seems that many (if not all) of them are not exclusively end-stressed. Thus, for instance, if barricade is both /ˈbærəkɛid/ and /ˈbærəˈkɛɪd/, then also the -ade-words cannonade, colonnade, fusillade, marinade, masquerade, orangeade, palisade, serenade, for which the LDOCE gives only final stress, should have an antepenult-stressed alternative. (And, indeed, for marinade, the RDPE gives the American English transcription /ˈˌmərəˈnɛd/; and /ˌmərəˈnɛd/ (LDOCE), then antepenultimate stress is most likely also characteristic of the words bandolier, chandelier, fusilier, gondolier and Frigidaire, legionnaire, millionaire, questionnaire, solitaire. (And, indeed, for, e.g., solitaire, the RDPE gives the British English transcription /ˈˌsɒlɪtə(r)/ and the American English /ˈˌsɑləˌtɛ(r)/, where the etymological final stress is demoted to secondary stress) (2017, 1266). An -ee-trisyllable such as appelée often has three different stress patterns. In addition to the etymological stress, appel lee, there are also

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the stress patterns ‘appellee, with the secondary stress of ‘appele’ being promoted to primary stress, and ap ‘pellee, which is the preserved stress of (what, from a synchronic point of view, can be regarded as) the base verb appeal.

To conclude: Final stress is rarely (if ever) the only stress pattern of a trisyllabic English word (because its initial secondary stress is usually promoted to primary stress), but final stress is very often the only stress pattern of a disyllabic English word. For example, the noun alarm is still stressed only /ˈlaːrm/ (OED), retaining the penultimate stress of the Italian phrase all’arme, “to (the) arms” (Dictionary.com). The reason for this is that because from the point of view of rhythm, a ‘larm is better than ‘a larm, with secondary stress occurring immediately before primary stress, an ult-stressed disyllable such as alarm does not as a rule receive secondary stress upon its penult. Accordingly, because stress shifts in English typically involve an interchange of primary and secondary stress, an ult-stressed disyllable such as alarm can as a rule retain its etymological final stress (but note that adult is, according to the OED, interchangeably stressed /ˈdʌlt/ and /əˈdʌlt/, with the former, which is the preferred stress pattern in American English, being the etymological penultimate stress of the Latin a’dultus. A similar example is the oft-mentioned police, which especially by South Midland and Midland U.S. speakers as well as by Scottish and Irish English speakers is stressed ‘police rather than po ‘lice. As observed above, stress shifts such as a ‘dult ➔ ‘adult and po ‘lice ➔ ‘police strongly suggest that the recessive tendency that does not accompany the rhythmic tendency did not cease to be operative in the English language).

3. More Than One Secondary Stress Pattern

Another tendency that has played an important role in shaping the Present-day English stress system is the retentive tendency, which means that the derived form preserves the stress of its base form. The retentive tendency is sometimes at odds with the recessive/rhythmic tendencies, which is why, e.g., comparable is in Present-day English stressed not only ‘comparable (from the etymological compa ‘rable) but also com ‘parable (Cruttenden 2014, 253), preserving the stress of what from a synchronic point of view can be regarded as its base verb com’pare. A slightly different case is acceptable, which is only /əˈskɛptəbəl/ in the LDOCE vs. both /əskɛptəbəl/ and /əˈskɛptəbəl/ in the OED. According to the latter, “[o]rig. pronounced, according to the analogy of words in -ble from Fr. and L., ‘acceptable, and so in all poets to the present day, but from the tendency to treat it as a direct derivative from the vb. ac ‘cept […] the pronunciation ‘ac ‘ceptable is now more prevalent” (OED).

Notice further that “[a]lthough the retentive tendency manifests itself also in the retention of the primary accent of the parent word, cf. pérson – pérsonal, much more commonly its manifestation consists in retaining the accent of the parent word in the form of secondary stress” (Vassilyev 1970, 278; italics in original); e.g., o ‘rigi nal, whose pen-initial secondary stress is the preserved stress of o ’riginal (☞ o ’rigi nal, from Latin origi nālis [OED]. The primary stress of o rigi nal is, by contrast, the promoted secondary stress of origi nali ty, from French originalité). The problem here is, however, that in the case of one and the same derived form, more than one word can sometimes be regarded as the ‘parent word.’

Thus, for instance, because the verb dynamize, which from a synchronic point of view can be seen as the base of dynamization, can be paraphrased as “make (more)
dynamic,” the stress pattern dy nami zation, which preserves the stress of dy namic, is no less intuitive than the stress pattern dynamize. By contrast, because organic is mainly associated with chemistry (organic compounds) and biology (organic growth), the verb organize, which from a synchronic point of view can be seen as the base of organization, cannot be paraphrased as “make (more) organic.” Hence, the theoretically possible stress pattern for gani zation would be fairly counterintuitive. The only stress pattern of organization is therefore the initially stressed prioritization, which preserves the stress of organize.2 A slightly different case is the above mentioned licitation. In contrast to dynamization, which is related to both dynamize and dy namic, solicitation is related only to the pen-initially stressed words licit, licitor, licitous, licitously, licitousness. Hence, an English speaker has no morphological reasons to use the initially stressed pronunciation licitation.

On other occasions, the secondary stress variation of an -ion-derivative is simply the inherited primary stress variation of (what can synchronically be regarded as) its parent word. For example, the base verb prioritize is interchangeably stressed /praɪərɪtaiəz/ (RDPCE 2017, 1058), preserving the stress of priority (which is the promoted secondary stress of pri ority, from French priorité), and /prəˈɪrɪtaiəz/ (RDPCE 2017, 1058), which is the preserved stress of prior (Latin prior). The derived noun prioritization inherits this primary stress variation in the form of the secondary stress variation /praɪərɪti zeɪʃn/ vs. /prəɪəritaiə zɪʃn/ (RDPCE 2017, 1058). Similarly, because the base verb equilibrate is stressed both /iːkwɪlɪbreɪt/ and /iːˈkwɪlɪbreɪt/ (RDPCE 2017, 440), the derived noun equilibration is stressed both /iːˈkwɪlɪbreɪʃn/ and /iːkwɪlɪˈbreɪʃn/ (RDPCE 2017, 440). The stress pattern equilibrate respects the morphological segmentation of equilibrate into the combining form equi- and the base librate (cf. distant), whereas equilibrate is the promoted secondary stress of the etymological pronunciation e quli brate, from the penult-stressed Latin etymon ae quilibrātus (Dictionary.com).

Note also that of the 88 pentyssyllabic -ion-words in the LDOCE in which secondary stress occurs non-initially, 15 (~17.05%) are words such as anticipation, whose tetrasyllabic righthand strings, such as -icipation, also occur in at least one other pentyssyllabic -ion-word (participation). Words such as anticipation and participation have a potential of being stressed upon their initial monosyllabic strings, such as an- and par-, which make these words formally different from each other. It is clear, however, that initial stress is more likely to occur in words such as acceleration and deceleration, which express related (ideally, opposite) meanings. The connection between the meanings "anticipation" and "participation" is less obvious than it is between the antonyms "acceleration" and "deceleration," so that the fact that in addition to being stressed /ˈpærˌtɪsɪˈpeɪʃn/, participation also has the stress pattern /ˈpærˌtɪsɪˈpeɪʃn/ (RDPCE 2017, 972) is better attributed to the formally and semantically related monosyllable part, which, just like participate, can also be regarded as a parent word of participation. That is, participation means "being part of something."

Note also that for gesticulation, the RDPCE gives only the pen-initially stressed pronunciation /dʒɛˌstɪkjʊˈleɪʃn/, which preserves the stress of /dʒɛˌstɪkjʊˈleɪt/ (2017, 972). Similarly, because of the initially stressed pronunciation /ˌprʌɪərɪtʌɪˈzeɪʃn/, which preserves the stress of prioritize, prioritize is interchangeably stressed /prəˈɪrɪtaiəz/ and /prəˈɪrɪtaiəz/ (RDPCE 2017, 1058), whereas prioritization is related to the pen-initially stressed words licit, licitor, licitous, licitously, licitousness. Hence, an English speaker has no morphological reasons to use the initially stressed pronunciation prioritization.

On other occasions, the secondary stress variation of an -ion-derivative is simply the inherited primary stress variation of (what can synchronically be regarded as) its parent word. For example, the base verb prioritize is interchangeably stressed /praɪərɪtaiəz/ (RDPCE 2017, 1058), preserving the stress of priority (which is the promoted secondary stress of pri ority, from French priorité), and /prəˈɪrɪtaiəz/ (RDPCE 2017, 1058), which is the preserved stress of prior (Latin prior). The derived noun prioritization inherits this primary stress variation in the form of the secondary stress variation /praɪərɪti zeɪʃn/ vs. /prəɪəritaiə zɪʃn/ (RDPCE 2017, 1058). Similarly, because the base verb equilibrate is stressed both /iːkwɪlɪbreɪt/ and /iːˈkwɪlɪbreɪt/ (RDPCE 2017, 440), the derived noun equilibration is stressed both /iːˈkwɪlɪbreɪʃn/ and /iːkwɪlɪˈbreɪʃn/ (RDPCE 2017, 440). The stress pattern equilibrate respects the morphological segmentation of equilibrate into the combining form equi- and the base librate (cf. distant), whereas equilibrate is the promoted secondary stress of the etymological pronunciation e quli brate, from the penult-stressed Latin etymon ae quilibrātus (Dictionary.com).

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2 By contrast, in formations such as organochloride, organogenesis, organophosphate, etc., we usually hear the pen-initially stressed pronunciation or gano-. For details, see Tokar (2018).
543), but in YouTube videos containing the spoken occurrences of this -ion-noun, we also hear the initially stressed pronunciation /dʒestɪkjuˈlɛʃən/ (OED). On the one hand, initial secondary stress in gesticulation can be attributed to the disyllable gesture, which is initially stressed as /ˈdʒestʃə/ (RDPCE 2017, 543). Another possible explanation, however, is the existence of the word articulation, which, just like gesticulation, also denotes a communicative activity and which, according to Kenyon and Knott (1953, 28), is also stressed articulation alongside articulation.

A different case is humification and humiliation. The former, which is related to the initially stressed humify/humus/humic, is supposed to be stressed humification, whereas the latter is supposed to be stressed hu mili tion, preserving the stress of hu miliate. Since the alternative stress patterns hu mifi cation and hu mili tion (RDPCE 2017, 627) cannot be accounted for in the same way as, e.g., the stress variation dynamisation vs. dy nami zation (i.e., the secondary stress of the alternative pronunciations hu mifi cation and hu mili tion cannot be analyzed as the preserved stress of morphologically related words), this article conjectures that these stress patterns are due to the mutual influence of the formally similar words humification and humiliation. That is, because apart from the humi-word humification, there is also the humi-word humiliation, the former is stressed not only humifi cation but also hu mifi cation, while the latter likewise has an alternative stress pattern humili tion. (Note that in contrast to the RDPCE, the OED has the words hu miserous and hu mi lific, whose stress patterns could in theory be invoked to account for the alternative secondary stress patterns hu mifi cation and hu mili tion. The words humiferous and humilific are, however, referred to in the OED as now rare or obsolete. The synchronic derivation of the secondary stress patterns hu mifi- and hu mili- from hu miserous and hu mi lific thus does not seem to be a likely scenario.)

Finally, observe that many interchangeably stressed -ion-words are prefixed formations such as, e.g., reaffirmation. The simple point here is that its tetrasyllabic base affirmation can only be stressed /əfəˈmeɪʃən/ (RDPCE 2017, 22), with secondary stress being regularly initial because primary stress is post-pen-initial. Because, however, the semantically transparent prefix re- modifies the base affirmation in an important way, the derived form reaffirmation is supposed to be stressed re affirma tion, with one secondary-stressed syllable occurring immediately after another secondary-stressed syllable. The actual stress pattern of reaffirmation is, however, either /rɪˈafərˈmeɪʃən/ or /rɪˈafərˈmeɪʃən/ (RDPCE 2017, 1106), with secondary stress falling upon either the prefix re- or the first syllable of the base affirmation. (The RDPCE also gives the American English transcription /ˈrɪəfərˈmeɪʃən/ which means that the level of stress borne by the prefix re- is sometimes primary rather than secondary. Indeed, as, e.g., Poldauf points out, "[w]hen there is contrast or when the idea expressed by the prefix is given special prominence, the prefix bears the primary stress and the base a secondary stress" (1984, 24)). Of the 208 variably stressed -ion-words in the RDPCE, 121 (~58.17%) are de-words such as deactivation, dis-words such as disinformation, pre-words such as premeditation, and re-words such as reaffirmation, whose righthand strings such as activation, information, meditation, and affirmation occur in the RDPCE as separate entries. Prefixed derivatives such as deactivation, disinformation, premeditation, and reaffirmation thus account for the majority of the variably stressed -ion-words in the RDPCE.
4. Concluding Remarks

This article has argued that in addition to being attributable to rhythm- and/or emphasis-related causes, stress shifts such as *imitation* → *imitation* should also be seen as manifestations of a general (English language) tendency to promote pre-tonic secondary stress to primary stress. This tendency, which has played an extremely important role in shaping the Present-day English stress system (e.g., *cade*my, from French *académie*/*Latin* *acadēmia* → *a*cademy; *di*versi*ty*, from French *diversité* → *di*versi*ty*; *in*dustri*al*, from French *industriel* → *in*dustri*al*; *mo*lec*ular*, from French *moléculaire* → *mo*lec*ular*; *terri*tory, from Latin *terrītorium* → *terri*tory; etc.), is still highly productive in contemporary English (which is a reason the secondary stress of a word such as *imitation* is sometimes promoted to primary stress). As for variably stressed words such as *dynamization* vs. *dy*namic*zation*, the article has shown that cases similar to this usually have morphological causes; that is, more than one word (e.g., *dynamize* and *dy*namic) can synchronically be analyzed as the base of one and the same derived form (e.g., *dynamization*).

What, however, is still not entirely clear in connection with English stress is why the recessive tendency without the rhythmic tendency is in Present-day English far less productive than the recessive tendency that accompanies the rhythmic tendency. Section 2.3 has argued that the etymological stress pattern *a* larm is a stable stress pattern because the first syllable of *alarm* does not receive secondary stress, which an English speaker could promote to primary stress; that is, *a* larm (which would involve two adjacent stressed syllables) → *al* arm. Stress shifts such as the hypothetical *a* larm → *al* arm did, however, occur in the recent history of the English language. For example, the now only initially stressed disyllable *colleague*, which is etymologically due to the French *collègue* (which, in turn, is, however, due to the penult-stressed Latin *collēga*), was "[i]n 17th c. still commonly accented on the second syllable" (OED). Likewise, *orchestra*, which is in Present-day English stressed only */ˈɑːkrəstra/, was, according to the OED, "[f]ormerly stressed *or*’che*stra*, e.g. by Byron" (which is the etymological penultimate stress of the Latin *orchēstra*). Recall also variably stressed words such as *ab* domen vs. *abdomen*, *ā*cumen vs. *acumen*, *ā*dult vs. *adult*, *po*lice vs. *police*, etc. Is there an explanation for the fact that the etymological stress pattern *a* larm has turned out to be a more stable stress pattern than the etymological stress patterns *ab* domen, *ā*cumen, *ā*dult, *colleague, or*’che*stra, *po*lice, etc.?

Another important issue, which, as far as I know, has thus far escaped a thorough investigation, is reduction vs. non-reduction of the formerly stressed syllable. That is, for example, *decision* is pronounced */dɪˈsɛʒən/ (OED), with the nucleus of the formerly stressed ult .on being a schwa. The same is true of the above mentioned *radical* and *calendar*. The word *colleague* is, by contrast, pronounced */ˈkɒliːɡ/ (OED), with its formerly stressed ult .league still containing a non-reduced (long) vowel. Similar examples include */ˈædəl/ , which does not reduce the (short) stressed vowel */s/ of */ˈædəl/ , and */ˈɛvləˈʃ(ə)n/ , which does not reduce the (long) primary-stressed vowel */lu/ of */ˌvəˈljuːˈʃ(ə)n/. Is there a reason why the formerly stressed vowel is reduced in words such as *calendar, decision, radical* vs. retained in words such as *adult, colleague, evolution*? At the present moment, I do not know the answers to these questions and leave them therefore with the observation that they require further study.
Works Cited


