1 Introduction

This monograph is about English words with stress doublets, i.e., words in which stress is interchangeably placed upon more than one syllable without changing the meaning. For example, in the YouTube video whose unique identifier is -AnsohxXnQU (17. 09. 2016; to retrieve the video the identifier should be preceded by https://www.youtube.com/watch?v=), an American English speaker can be heard stressing *applicable* initially in *This name change will be more functionally* ˈ*applicable* (00:01:25.899 --> 00:01:33.979), but in *we've made the name change to make it more applicable* (00:03:01.980 --> 00:03:04.880), the very same American English speaker can be heard using the stress pattern *ap*ˈ*plicable*. (According to Longman Dictionary of Contemporary English (henceforth LDOCE), the variation /əˈplɪkəbəl/ vs. /ˈæplɪkəbəl/ occurs in both British and American English, but observe that in YouTube videos featuring the voices of British English speakers, the author heard only the stress pattern /əˈplɪ-/.) A very similar case is *adult*, which in British and American English is interchangeably stressed /ˈædʌlt/ and /əˈdʌlt/ (LDOCE) (with, however, initial stress being the preferred stress pattern in British and Australian English vs. final stress being more frequently used (than initial stress) in American English); a YouTube video in which a British English speaker can be heard vacillating between /ˈædʌlt/ and /əˈdʌlt/ is S5hXrgfwK8o (10. 04. 2017).

1.1 Scope of the study

In addition to the obvious questions raised by variably-stressed words such as *applicable* and *adult*—1) What are the causes of stress variation exhibited by these and other English words with stress doublets? 2) Why do only some English words have stress doublets? 3) Do words with stress doublets prefer particular stress patterns and if so, why?—the present monograph will attempt to give a more precise answer to the general question of why English words (either with or without stress doublets) are stressed the way they are stressed. According to a popular view, Present-day English is a Latin-like language as far as its stress system is concerned (Hayes 1995: 181). Thus, since "[i]n the three hundred years that intervened between the Norman Conquest and Chaucer, the [English] language was inundated by Romance words" (Halle & Keyser 1971: 97), the stress rule of contemporary English is essentially the stress rule of Clas-

sical Latin: "Stress falls on the penultimate syllable if it contains a long vowel or is closed. […] Else stress is antepenultimate" (van der Hulst 2010a: 459). An illustration is the word *paprika*, which in British English, according to LDOCE, is interchangeably stressed /ˈpæprɪkə/ and /pəˈpriːkə/. As one can notice, when stress in *paprika* is penultimate, the vowel in the penultimate syllable /ˈpriː/, which bears stress, is long. When, by contrast, *paprika* is pronounced /ˈpæprɪkə/, the vowel in the unstressed penult /prɪ/ is short. The stress patterns /ˈpæprɪkə/ and /pəˈpriːkə/ can thus both be said to be in accordance with the Latin Stress Rule.

At the same time, however, in the case of the stress variation /ˈɛkskwɪzɪt/ vs. /ɪkˈskwɪzɪt/ (Oxford English Dictionary, henceforth OED), the vowel in the penultimate syllable remains short irrespective of whether stress in *exquisite* is penultimate or antepenultimate. Similarly, it does not matter whether *stalactite* and *stalagmite* are stressed pen- or antepenultimately. In both /ˈstælæktaɪt/ vs. /stəˈlæktaɪt/ (OED) and /ˈstælægmaɪt/ vs. /stəˈlægmaɪt/ (OED), there is a short vowel in the penult that is followed by a coda consonant, i.e., /læk/ and /læg/; stress in the trisyllables *stalactite* and *stalagmite* is thus supposed to be penultimate in accordance with the Latin Stress Rule. A fairly similar case is *necropsy*, for which the OED gives segmentally identical British English transcriptions /ˈnɛkrɒpsi/ and /nɛˈkrɒpsi/: As one can notice, these transcriptions differ from each other only with regard to the location of the stress symbol (ˈ).

Similar examples can be found among disyllabic English words, which are not covered by the Latin Stress Rule, stating that "[i]n words with 2 or fewer syllables, primary stress occurs on the initial syllable" (StressTyp2 database), i.e., in contrast to a disyllabic English word, in which stress is either initial or final (e.g., /ˈædʌlt/ vs. /əˈdʌlt/ of *adult*), in a disyllabic Latin word, stress can only be initial, i.e.,

> Words with a heavy penultimate syllable receive penultimate stress, words with a light penult receive antepenultimate stress, and in all other cases where a word is too short to obey these laws, stress falls as far as possible to the left. (Hayes 1995: 50)

According to van der Hulst (2010a: 445), in the English language "[p]rimary stress falls on the final syllable in nouns if the vowel is long, in verbs if the vowel is long or there are two closing consonants." The diachronic basis of this assertion is the view, expressed in Halle & Keyser (1971: 99–101), that the stress system of contemporary English was shaped not only by Latin but also by (Old) French:

> The nonnative vocabulary of Chaucer consisted of two types of words, namely learned words largely of Latin origin and everyday words borrowed from Old French or Anglo-Norman. These two classes had different stress patterns. (Halle & Keyser 1971: 99)

A convincing critique of this view can be found in Fournier (2007: 232), who argues that:

> French stress is *not* a central component of English stress, an analysis confirmed by history: most words of all lengths stressed on the final are relatively late borrowings, from the 17th century onwards. (Fournier 2007: 232; author's italics)

From a purely synchronic perspective, the view that final stress in English crucially depends upon the length of the vowel in the final syllable / the number of closing consonants when the vowel is short cannot be accepted because especially words with stress doublets provide too many counterexamples. For instance, for the verb *migrate* the OED gives segmentally identical British English transcriptions /mʌɪˈgreɪt/ vs. /ˈmʌɪgreɪt/ and the American English transcription /ˈmaɪˌgreɪt/, i.e., *migrate* is always pronounced with a diphthong in the ult (which counts as a long vowel), but stress in *migrate* is not always final in Present-day English. A similar case is the adjective *overt*, for which LDOCE gives segmentally identical British English transcriptions /ˈəʊvɜːt/ vs. /əʊˈvɜːt/ and American English transcriptions /ˈoʊvɜːrt/ vs. /oʊˈvɜːrt/. The adjective under consideration is thus also always pronounced with a long vowel in the ult, even when stress in *overt* is non-final. The noun *decade* is interchangeably stressed /ˈdekeɪd/ and /deˈkeɪd/ (LDOCE), with both the stressed ult /ˈkeɪd/ of the latter and the unstressed ult /keɪd/ of the former containing a diphthong.

Of the 268 variably-stressed disyllables in LDOCE (including words such as *caffeine*, which, according to the dictionary, is stressed only /ˈkæfiːn/ in British English vs. only /kæˈfiːn/ in American English), 173 (~64.55 %) are disyllables such as *caffeine*, in which stress differences are not accompanied by segmental differences involving the quality of the vowel in the ult. Thus, if the ult bearing stress contains a long vowel or diphthong, then also the unstressed ult of an initially-stressed alternative pronunciation likewise contains a long vowel or diphthong (e.g., /kæˈfiːn/ vs. /ˈkæfiːn/ of *caffeine*). Similarly, if the ult bearing stress contains a short vowel, then (a qualitatively unreduced) short vowel also occurs in the ult of an initially-stressed alternative pronunciation. E.g., *address* is, according to LDOCE, only /əˈdres/ in British English, but it is /əˈdres/ vs. /ˈædres/ in American English. The ult /res/, which contains a short vowel (being followed by only one coda consonant), thus occurs in both the finally-stressed pronunciation /əˈdres/ and the initially-stressed alternative /ˈædres/. (Notice, however, that in YouTube videos featuring the spoken occurrences of *address*, initial stress was heard by the author only in environments such as *IP address* or *street address*, whereas in contexts such as *State of the Union Address*, *Gettysburg Address*, *inaugural address*, *commencement address*, etc., where *address* expresses the meaning "public speech," stress in *address* was exclusively final. The varia-

tion /əˈdres/ vs. /ˈædres/ is thus, at least in part, a matter of semantics.) Anyway, the fact that disyllables such as *caffeine* and *address* constitute the majority of variably-stressed disyllables in English strongly suggests that the quality of the vowel in the ult plays a relatively insignificant role in the assignment of stress in disyllabic English words.

Another important number is that in Oxford Dictionaries (henceforth OD), there are 48,428 solidly-spelled polysyllables whose only stress pattern (given in the dictionary) is non-initial stress. E.g., *inhibit* is stressed only /ɪnˈhɪbɪt/ (OD), with stress in the word not falling upon its first syllable /ɪn/. Of the 48,428 polysyllabic words in the OD such as *inhibit*, 28,944 (~59.77 %) have righthand strings such as, e.g., /-ˈhɪbɪt/ of /ɪnˈhɪbɪt/, which occur in at least one other English word. E.g., apart from occurring in the transcription /ɪnˈhɪbɪt/ of *inhibit*, the righthand string /-ˈhɪbɪt/, which begins with the primary stress symbol (ˈ), also occurs in the transcription /prə(ʊ)ˈhɪbɪt/ of *prohibit* (OD). (The percentage of such cases rises to ~66.55 % if, apart from counting only exact matches such as /-ˈhɪbɪt/ of /ɪnˈhɪbɪt/ and /prə(ʊ)ˈhɪbɪt/, we ignore the onset of the primary-stressed syllable. E.g., /kəˈlɒtəmi/ of *colotomy* is the only transcription in the OD that contains the righthand string /-ˈlɒtəmi/. At the same time, however, apart from /kəˈlɒtəmi/ of *colotomy*, the dictionary also has the transcription /ləˈbɒtəmi/ of *lobotomy*, which shares with /kəˈlɒtəmi/ the righthand string /-ˈ-ɒtəmi/.)

Notice further that of the 48,428 polysyllabic words such as *inhibit*, 35,525 (~73.36 %) have transcriptions such as /ɪnˈhɪbɪt/, in which the righthand string that begins with the primary stress symbol (ˈ) is segmentally longer (i.e., contains more phonetic segments, with the duration symbol (ː) not counting as one of them) than the remaining lefthand string preceding it. Thus, for instance, the righthand string /-hɪbɪt/ of /ɪnˈhɪbɪt/ consists of four phonetic segments while the immediately preceding lefthand string /ɪn/ has only two. (If also the duration symbol (ː) is taken into consideration (e.g., in /ʃɪˈkɑːgəʊ/ of *Chicago* (OD), the righthand string /-kɑːgəʊ/ consists of six rather than five phonetic segments), 36,017 (~74.37 %) non-initially-stressed words in the OD dictionary can be said to have segmentally longer righthand strings such as /-kɑːgəʊ/ of /ʃɪˈkɑːgəʊ/.)

The connection between these numbers is the Old English Stress Rule: "Primary stress falls on the first syllable (of the root / stem)" (van der Hulst 2010a: 446). Assuming that this rule is still alive in contemporary English, we can argue that *inhibit* is stressed /ɪnˈhɪbɪt/ because the righthand string *-hibit* counts morphologically as the root of the word. Thus, because apart from occurring in *inhibit* this righthand string also occurs in, e.g., *prohibit*, both *inhibit* and *prohibit* count for an English speaker as morphologically complex words consisting of the components *in-*/*pro-* and *-hibit*. These components do not have meanings of their own, but as many authors suggest, components of which morphologically

complex English words are made up are not necessarily traditional morphemes (i.e., meaning-bearing units). As, e.g., Aronoff (1976: 12) aptly observes in this connection: "What even vague sense does *prefer* share with *confer* and *transfer*? or *commit* with *remit* and *submit*? or *receive* with *conceive* and *perceive*? or *consume* with *presume* and *assume*? or *reduce* with *induce* and *deduce*? None."

The (purely formal) segmentation *in-*/*pro-* + *-hibit* raises, however, the question of which of these components should count morphologically as the root of *inhibit* and *prohibit*, for the root is the only obligatory element in a word (e.g., Mel'čuk 2001: 69), i.e., a word may be affixless, but it may not be rootless: Any word contains at least one root. As Mel'čuk (2001: 69–79) explains, roots are different from affixes both semantically and formally. With regard to the former, roots are associated with more concrete meanings than those usually expressed by affixes. With regard to the latter, however, roots usually contain more segments than affixes (Mel'čuk 2001: 69). Needless to say, since the components *in-*/*pro-* and *-hibit* are not associated with discernible meanings of their own, it is only the formal length-criterion that can be relied upon to answer the question of which of these two components counts in *inhibit* and *prohibit* as the root. Since the righthand component *-hibit* contains more segments than the lefthand components *in-*/*pro-*, the former is clearly more like a root whereas the latter are more like prefixes. *Inhibit* and *prohibit* are, therefore, both stressed /-ˈhɪbɪt/, with the location of stress in these words being the root–prefix boundary location (and precisely because of this fact, it does not matter that the penult /ˈhɪ/, which receives stress, ends in a short vowel and is thus not supposed to be stressed in accordance with the Latin Stress Rule). Likewise, given the numbers presented above, it can be conjectured that similar analyses apply to the majority of non-initially-stressed English words. E.g., *colotomy* is stressed /kəˈlɒtəmi/ not (or at least, not only) because the penult /tə/ ends in a short vowel—stress in /kəˈlɒtəmi/ should thus be antepenultimate in accordance with the Latin Stress Rule—but (also) because the segmentally longer righthand string *-otomy*, which *colotomy* shares with *lobotomy*, counts morphologically as the root.

Consider also the stress variation /ˈɒksɪdʒɪneɪt/ vs. /ɒkˈsɪdʒəneɪt/ of *oxygenate* (OED; only British English). To begin with, observe that in the view of many authors, suffixes in English have intrinsic properties with regard to stress; e.g., Kettemann (1988: 290) speaks of a diacritic feature that is contained in the lexicon entry dedicated to a particular English suffix. This diacritic feature is what triggers, in a particular suffixed derivative, a particular stress-related behavior. Thus, for instance,

> it can be stated that Anglo-Saxon suffixes never affect the stress of the words to which they are added […]. Of the others, some, like *-esce*, take a stress themselves in addition

> to the stress on the root-word […]; others, like *-ion*, invariably throw the stress on to the syllable preceding them […]; while others again throw it on to the second syllable before them. (Kingdon 1949: 148)

A challenge to views similar to this is, however, posed by "mixed suffixes," which "have two or more distinct modes of operation" (Fudge 1984: 45). E.g., the suffix *-ate* of /ˈɒksɪdʒɪneɪt/ is a stress-neutral suffix: Stress in the derived verb *oxygenate* falls upon the same syllable as in the base noun *oxygen*: /ˈɒksɪdʒ(ə)n/ (OD). Similarly, *vaccinate* is stressed /ˈvaksɪneɪt/ (OD) because *vaccine* is stressed /ˈvaksiːn/ (OD) whereas *adsorbate* is /adˈsɔːbeɪt/ or /adˈzɔːbeɪt/ (OD) because *adsorb* is /ədˈzɔːb/ or /ədˈsɔːb/ (OD); the suffix *-ate* thus again acts as a stress-neutral suffix. In /ɒkˈsɪdʒəneɪt/, by contrast, the very same suffix *-ate* acts as a stress-shifting suffix, causing the derived verb *oxygenate* to have a different stress pattern than the base noun *oxygen*. What is interesting about the case of *oxygenate* is that the preferred stress pattern of this verb is not the preferred stress pattern of a similar variably-stressed *-ate*-derivative *hydrogenate*, which is /ˈhaɪdrəʊdʒəneɪt/ vs. /haɪˈdrɒdʒəneɪt/ according to the OED. Of 69 native English speakers who were found to have pronounced *oxygenate* in YouTube videos, everybody (100 %) used initial stress in this verb, i.e., /ˈɒk-/, but of 14 native English speakers who were found to have pronounced the verb *hydrogenate*, 10 (~71.43 %) used the antepenultimately-stressed version /haɪˈdrɒ-/. In agreement with these findings, the OD gives for *oxygenate* only the initially-stressed transcription /ˈɒksɪdʒəneɪt/, whereas in the case of *hydrogenate* the transcription /haɪˈdrɒdʒəneɪt/ is placed before the transcription /ˈhʌɪdrədʒəneɪt/. This stress difference can only be accounted for if we assume that (for the majority of contemporary English speakers) *hydrogenate* is not a suffixed but prefixed derivative, with the segmentally longer righthand string *-rogenate*, which *hydrogenate* shares with *nitrogenate* (vacillating, according to the OD, between the stress patterns /ˈnʌɪtrədʒɪneɪt/ and /nʌɪˈtrɒdʒɪneɪt/), counting morphologically as the root and hence receiving stress on its first syllable. *Oxygenate* is, by contrast, the only *-ygenate*-word in the OD dictionary; English speakers have therefore no reasons to morphologically segment *oxygenate* into the prefix *ox-* and the root *-ygenate* (or into the prefix *o-* and the root *-xygenate*). The morphological structure of *oxygenate* is thus *oxygen* + *-ate*, i.e., the verb is a genuine *-ate*-derivative and therefore, like other genuine *-ate*-derivatives, preserves the stress of its base *oxygen*.

Another English suffix that has more than one distinct mode of operation with respect to stress is *-al*. Thus, for instance, while both the trisyllabic derivative *personal* and the disyllabic base *person* are stressed initially, /ˈpəːs(ə)n(ə)l/ and /ˈpəːs(ə)n/ (OD), in the derivative–base pair *parental* vs. *parent* only the latter is

stressed on the first syllable: /pəˈrɛnt(ə)l/ vs. /ˈpɛːr(ə)nt/ (OD). It is tempting to say that the stress patterns of *personal* and *parental* are both in accordance with the Latin Stress Rule: In /ˈpəːs(ə)n(ə)l/, stress is antepenultimate because the penult /sə/ ends in a short vowel, whereas in /pəˈrɛnt(ə)l/, stress is penultimate because the penult /ˈrɛn/ is closed. Note, however, that also in the trisyllabic derivatives *parentage* and *parenthood*, the penultimate syllable is closed, but they are nonetheless stressed /ˈpɛːr(ə)ntɪdʒ/ and /ˈpɛːr(ə)nthʊd/ (OD), preserving the initial stress of the disyllabic base *parent*.

An alternative explanation is that the morphological structure of *parental* is not the "correct" (i.e., semantics-based) *parent* + *-al* but *pa-* + *rental*, i.e., the disyllabic righthand string *rental*, which occurs in English as a separate word, counts morphologically as the root and therefore attracts stress on to its first syllable. (Cf. /satɪsˈfakt(ə)ri/ of *satisfactory* and /ɒˈkʌlt/ of *occult*, whose righthand strings /-ˈfakt(ə)ri/ and /-ˈkʌlt/ also occur in the OD as the transcription of the initially-stressed trisyllable *factory*/the monosyllable *cult*. Cases such as *satisfactory–factory* or *occult–cult* constitute ~29.82 % of the 48,428 non-initially-stressed polysyllabic words in the OD dictionary, i.e., in 14,440 non-initially-stressed English words, the righthand string that begins with the primary-stressed syllable also occurs in the OD as the transcription of either an initially-stressed polysyllable or a monosyllable.) Likewise, simply because there is the word *oral*, *mayoral* is in American English stressed not only /ˈmeɪər(ə)l/ (OED), preserving the stress of *mayor*, but also /meɪˈɔr(ə)l/ (OED); *pastoral* is (also in American English) stressed not only /ˈpæstər(ə)l/, preserving the stress of *pastor*, but also /pæsˈtɔr(ə)l/ (OED); *electoral* is, according to Merriam-Webster Online, not only *e'lectoral*, preserving the stress of *elect(or)*, but also *elec'toral*. In the YouTube video 1oTFB9wdGl4 (14. 06. 2016), the stress pattern *cli'toral* is used by an American English speaker whereas in InJCUD0K2co (14. 06. 2016) a British English speaker can be heard saying *cli'toral*; a YouTube video in which *clitoral* is interchangeably stressed *'clitoral* and *cli'toral* by one and the same English speaker is _U_wKwVj8i8 (14. 06. 2016). These stress patterns strongly suggest that some Present-day English speakers analyze the (*t*)*oral* of these words as the root, i.e., these *-al*-derivatives are for them not suffixed but prefixed derivatives. Another similar case is the variation /ˈkant(ə)n(ə)l/ vs. /kanˈtɒn(ə)l/ of *cantonal* (OD). In addition to regarding it as the inherited variation /ˈkantɒn/ vs. /kanˈtɒn/ of *canton* (OD), the stress pattern /kanˈtɒn(ə)l/ can also be seen as the preserved initial stress of the disyllabic *tonal*, which occurs in English as a separate word and may therefore (from a purely formal point of view) be perceived as the root of the trisyllabic *cantonal*.

To reiterate, words with stress doublets challenge the popular assumption that stress in a polysyllabic English word should fall upon a particular syllable

when it exhibits a particular segmental makeup (e.g., a long vowel in the penult). Additionally, cases of stress variation among suffixed derivatives raise the question of why in the case of some English suffixes, there is apparently more than one diacritic feature triggering a particular stress-related behavior. It is thus the author's hope that a systematic account of the phenomenon of stress variation, which will be presented in the following chapters of this monograph, will contribute to a better understanding of the general stress assignment principles by which contemporary English speakers abide when deciding where to place stress in a polysyllabic English word.

1.2 Previous studies

With the exception of Berg's (1999) study of stress differences between British and American English, none of the previous publications (on English stress) can be referred to as a systematic analysis of English words with stress doublets; the phenomenon of stress variation is only briefly touched upon in these publications as a side aspect of the more general issues pertaining to English stress.

For example, Chomsky & Halle (1968: 73) observe that in the word *umbilicus*, which is interchangeably pronounced /ʌmbɪˈlaɪkəs/ and /ʌmˈbɪlɪkəs/ (OED), "we have penultimate stress if the penultimate vowel is taken to be tense in the underlying representation, and antepenultimate stress if the penultimate vowel is taken to be lax." (Note that Chomsky & Halle (1968: 73) do not speak of long vs. short vowels because "[i]n few cases in American English as a whole is time length, or duration, of vowels significant—that is, used to distinguish from each other words otherwise alike" (Kenyon & Knott 1953[1944]: xxvi). E.g., the phonetic contrast between the "long" /iː/ of *meal* and the "short" /ɪ/ of *mill* is in American English by and large a matter of vowel quality rather than of duration.) A problem with this explanation is, however, the above mentioned fact that apart from cases such as /ʌmbɪˈlaɪkəs/ vs. /ʌmˈbɪlɪkəs/, with stress being penultimate when the penult /ˈlaɪ/ is heavy vs. antepenultimate when the penult /lɪ/ is light (the Latin Stress Rule is thus in both cases abided by), there are also cases such as /ˈɛkskwɪzɪt/ vs. /ɪkˈskwɪzɪt/, where stress differences do not correlate with segmental differences, i.e., stress in *exquisite* can be penultimate even when the vowel in the penult is phonetically realized as the short /ɪ/.

Another highly problematic explanation for the phenomenon of stress variation in English is Cruttenden's (2008: 245) notion of rhythmic pressure. (Cruttenden (2008) is, however, the seventh edition of *Gimson's Pronunciation of English*. An earlier edition of the same book (Gimson 1970: 232) also mentions rhythmic pressures as one of the causes of stress variation in contemporary

English.) What is meant by this is that "[i]n some words containing more than two syllables there appears to be a tendency to avoid a succession of weak syllables, especially if these have /ə/ or /ɪ/" (Cruttenden 2008: 245). For example, *deficit* is /ˈdɛfɪsɪt/ vs. /diˈfɪsɪt/ (Cruttenden 2008: 246), with the latter pronunciation representing in the view of the author a more rhythmic alternative to the former, i.e., the initially-stressed /ˈdɛfɪsɪt/ contains a sequence of two unstressed syllables both of which have the qualitatively reduced vowel /ɪ/. Notice, however, that the OD dictionary has 3,466 initially-stressed words in which the first syllable, bearing stress, is followed by two unstressed syllables that have /ə/ or /ɪ/ in the nucleus position. E.g., in both /ˈaldʒɪbrə/ (OD) and /ˈanɪm(ə)l/ (OD), the stressed antepenults /ˈal/ and /ˈa/ are followed by the unstressed penult–ult sequences /dʒɪbrə/ and /nɪm(ə)l/, which contain the vowels /ɪ/ and /ə/. Of the 3,466 antepenultimately-stressed trisyllables such as *algebra* and *animal*, only 58 (~1.67 %) are, according to the OD, also pronounced by contemporary English speakers with penultimate stress. E.g., in addition to the above mentioned /ˈpaprɪkə/ vs. /pəˈpriːkə/ of *paprika* (OD), also the adjective *integral* is interchangeably stressed /ˈɪntɪgr(ə)l/ and /ɪnˈtɛgr(ə)l/ (OD).

Observe now that apart from initially-stressed trisyllables such as *algebra* and *animal*, the OD also has 234 initially-stressed trisyllables such as, e.g., /ˈɔːtɑːki/ (OD). The unstressed penult–ult string in trisyllables such as *autarky* contains any long or short vowel with the exception of /ə/ or /ɪ/. Of the 234 initially-stressed trisyllables such as *autarky*, five (~2.14 %) are, according to the OD, also pronounced by contemporary English speakers with penultimate stress. E.g., in addition to the above mentioned /ˈnɛkrɒpsi/ vs. /nɛˈkrɒpsi/ of *necropsy* (OD), also *autopsy* is stressed both /ˈɔːtɒpsi/ and /ɔːˈtɒpsi/ (OD), *conversely* is interchangeably /ˈkɒnvəːsli/ and /kənˈvəːsli/ (OD), *covertly* is both /ˈkəʊvəːtli/ and /kəʊˈvəːtli/ (OD), and *patchouli* is /ˈpatʃʊli/ and /pəˈtʃuːli/ (OD). Since the difference of 58 / 3,466 vs. five / 234 does not count as statistically significant—χ^2 (1) = 0.281, p = 0.5959—we can claim that trisyllables such as *algebra* and *animal* are in contemporary English not more frequently interchangeably pronounced with antepenultimate and penultimate stress than trisyllables such as *autarky*.

Notice also that among the examples provided by Cruttenden (2008: 246) to substantiate his claim that "[h]esitancy and variation of accentual pattern occurring at the present time are the result of rhythmic […] pressures […]" (Cruttenden 2008: 245) is also the word *acumen*, which, according to LDOCE, is /ˈækjəmən/ vs. /əˈkjuːmən/ (cf. the OED, where *acumen* is only /ˈakjʊmən/ as far as the British variety is concerned). As one can see, when stress in *acumen* is antepenultimate, the unstressed vowels in the ult and the penult may undergo qualitative reduction, yielding thereby the rhythmically unfortunate pronunciation /ˈækjəmən/: This pronunciation contains a sequence of two weak

syllables, both of which have schwas. Note, however, that according to the OED, "[p]ronunciation with stress on the first syllable was first noted in the mid 20th cent."; the original pronunciation of *acumen* was the penultimately-stressed /əˈkjuːmɪn/, which etymologically is due to the Latin *acūmen*, in which stress is penultimate because the vowel in the penultimate syllable is long. Proceeding from Cruttenden's (2008: 245) notion of rhythmic pressure, the pronunciation /əˈkjuːmɪn/ should be seen as a more fortunate pronunciation of *acumen* with respect to rhythm (compared to pronunciations in which the stress is antepenultimate), but it has nonetheless been abandoned in British English in favor of the presumably less rhythmic antepenultimately-stressed pronunciation /ˈakjʊmən/. Likewise, of 84 General American English speakers whose voices could be heard in YouTube videos containing the spoken occurrences of *acumen*, only four (~4.76 %) pronounced the word with a penultimate stress. Thus, we can say that not only in British but also in American English, the stress in *acumen* is close to becoming exclusively antepenultimate. It is fairly obvious, then, that if the variation between penultimate and antepenultimate stress in *acumen* did indeed have anything to do with rhythm in the sense of Cruttenden (2008: 245), we would now be observing a different tendency: More rhythmic pronunciations with stress on the middle syllable would be supplanting less rhythmic pronunciations with stress on the first syllable.

Interestingly, in stark contrast to Cruttenden (2008: 245), Friederich (1967: 25) notes that "[i]n dreisilbigen Wörtern die Mittelsilbe zu betonen, ist ein Rhythmus, der dem Engländer nicht sonderlich liegt," i.e., placing stress upon the middle syllable in a trisyllabic word is a rhythm that an English speaker does not particularly like. To substantiate this claim, Friederich (1967: 25) refers to stress shifts such as /kəmˈpɛnseɪt/ → /ˈkɒmpənseɪt/ (OED), which were undergone by many *-ate*-trisyllables. E.g., apart from *compensate*, also *concentrate*, *confiscate*, *contemplate*, *demonstrate*, *illustrate*, *infiltrate*, *inundate*, etc. were originally pronounced with penultimate stress but have over the course of time abandoned this stress pattern in favor of antepenultimate stress (OED). At the same time, however, some *-ate*-trisyllables still prefer penultimate to antepenultimate stress. E.g., for *demarcate*, *elongate*, and *impregnate*, LDOCE gives only penultimately-stressed American English transcriptions /dɪˈmɑːrkeɪt/, /ɪˈlɔːŋgeɪt/, and /ɪmˈpregneɪt/ (whereas in British English, these verbs are stressed /ˈdiː-/, /ˈiː-/, and /ˈɪm-/). More generally, Present-day English would have relatively few penultimately-stressed trisyllables if this stress pattern were indeed dispreferred by English speakers (in trisyllabic words). LDOCE has, however, (no less than) 2,479 penultimately-stressed trisyllables (vs. 4,979 antepenultimately-stressed ones). Penultimate stress in a trisyllabic English word is thus without a doubt not a marginal stress pattern.

Another aspect pertaining to rhythm is the English Rhythm Rule. Because "adjacent stressed syllables make speech sound jerky" (Kingdon 1949: 149) and because some English words vacillate between final and non-final stress, English is believed to have "a rule that shifts a stress leftward when a stronger stress follows," resulting in alternations such as *thirˈteen* ~ *ˈthirteen men* (Hayes 1995: 18). It is acknowledged, though, that "the Rhythm Rule is optional, at least in certain contexts" (Hayes 1995: 18). For example, Langendoen (1975: 207), who is a native speaker of English, reports that for him, final stress in *Detroit* in the combination *Detroit Lions* is as acceptable as initial stress; similarly, in the combination *Marlene Deetz*, final stress in the modifier *Marlene* is interchangeable with initial stress.

Halle & Vergnaud (1987: 271, f. 29) also mention that

> the word-internal application of the Rhythm Rule […] is restricted to lexical compounds. This explains why retraction is (almost) obligatory in *Marcel Proust*, but almost impossible in *Marcel left*: the former is a lexical compound, whereas the latter is formed in the syntax. The optionality of stress retraction in *Marcel's book* would then be attributed to the ambiguous nature of the construction: it can be analyzed either as a lexical compound or as a syntactic construction. In the former case retraction is obligatory; in the latter it is impossible. The difference is brought out more clearly by such examples as *We know about Marcel's book, but not yet about Mary's*. In this sentence *Marcel's book* must be pronounced without retraction because the pronominal relation that holds between *book* and the empty noun following *Mary's* forces the syntactic analysis of the collocation. (Halle & Vergnaud 1987: 271, f. 29)

Sometimes it is also added that the English Rhythm Rule "tends to apply in frequent words, e.g., *ántìque bóok*, and not in rare ones, e.g., *àrcáne sort*" (Kraska-Szlenk & Żygis 2012: 327). Thus, of the finally-stressed modifiers *antique* and *arcane*, the former, which is more frequent than the latter, is likely to be initially-stressed as /ˈæntɪk/ (OED) rather than finally-stressed as /ænˈtiːk/ (OED) when the immediately following head word is either a monosyllable or an initially-stressed polysyllable; by contrast, in the less frequent *arcane*, stress is likely to stay final in a similar environment.

Unfortunately, statements such as these, which describe when the English Rhythm Rule should apply and when it should not, are as a rule based not upon extensive corpus or experimental studies but upon authors' own introspective judgments of how particular English words in which stress is normally final are supposed to be stressed when in an immediately following head word stress is initial. A fortunate exception is Mompéan (2014), who has recently studied the stress variation exhibited by the English cardinal numerals ending in *-teen* and the corresponding ordinal numerals ending in *-teenth*. For this purpose the