Study on Korean EFL Learners'
Stress Shift Realizations in Three Suffix Patterns:
stress-moving, stress-carrying and neutral suffixes

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Byun, Junghee. 2014. Study on Korean EFL Learners' Stress Shift Realizations in Three Suffix Patterns: stress-moving, stress-carrying and neutral suffixes. *SNU Working Papers in English Linguistics and Language 12, 1-16.* The study intends to emprically investigate Korean EFL learners' realizations of stress shift where three patterns of suffix - stress-moving (e.g. *-ity, -ic, -ion, -ian)*, stress-carrying(e.g. *-een, -ese, -ee, -eer)* and neutral suffixes (e.g. *-al, -ment, -able, -hood)* – are added to a word base. In order of difficulty, stress placement with stress-carrying suffixes poses greatest challenge upon Korean EFL learners, followed by stress-moving and lastly stress-neutral suffixes as the least challenging stress pattern among the three. Despite unfamiliarity with the words of the suffix-carrying pattern, the analysis of the three stress patterns uniquely reveals that stress error of a derived form might be led by stress error in the word base. To address this problem, explicit teaching of word stress patterns should be further reinforeced as an integral part of the ESL/EFL instruction particularly by clarifying the systematic patterns of stress placement in English words. **(Seoul National University)**

Keywords: English stress, word stress shift through suffixes, stress-carying suffix, stress-moving suffix, neutral suffix

1. Introduction

The greatest challenge that Korean English language learners encounter in mastering pronunciation of speaking skills is generally attributed to the fact that the English language is a stress-timed language, whereas the Korean language is a syllable-timed language. Such different phonological features of English from that of Korean entails the significance of having a command of suprasegmentals when speakers engage in spoken communication in English. Stress in English words makes rhythms and pitch contours in larger units of utterance such as

phrase and sentence, which is also called intonation. Thus, recognizing and producing correct word stress is a fundamental that Korean English learners should learn to empower their speaking skill. To accomplish this, it is worthwhile that we study how much Korean EFL learners are aware of English word stress and its major rules and how they realize stress shift in actuality.

2. Literature review
2.1 Significance of word stress in the English language

As a rule, stressed syllables are defined as those syllables in utterance that are longer, louder and higher in pitch. And such features of English word stress constitute a crucial element in getting across meanings in communication. Take xamples of the following words, which are nouns

Noun	Verb
INcrease	inCREASE
CONtest	conTEST
REcord	reCORD

when stress is placed on the initial syllable, change their part of speech into verbs when the stress shifts into the second syllable. It indicates the function of English stress that can discriminate syntactic features of words. Meanwhile, English stress also causes a major change in vowel quality and quantity; for example, unstressed vowels become [ɪ] or [ə], lax vowels. This phenomenon occurs particularly when affixes are attached to word base.

The significane of stress in the English language is also supported by the well-known view that stress is what mainly builds English to be a stress-timed language. In a stress-timed language, stressed syllables appear in the same duration, accompanied with trochaic foot (Strong-

Weak) that reside in prosodic units such as word, phrase and sentence. It is stressed syllables recurrent in the same intervals that create rhythms in utterance. These stress and rhythm are often considered as a key to distinguishing information which is important from which is not in spoken communication (Baek, 2009).

For this reason, they can be recognized as one of the most important aspects in acquiring L2 speaking fluency. Korean language, however, a syllable-timed language, basically does not have a stress-rhythm system like English, which causes Korean L2 learners to have tremendous problem mastering English. In lack of practice and awareness of Korean English learners in English stressed syllables and rhythm, we are highly skeptical about how much they recognize stress shift and its causes.

2. 2 English stress and word structure

Stress placement in English words is for the many parts predictable as a rule-governed phenomenon. Dauer (1993) says that 90% of bisyllabic nouns are stressed on word initial position while 60% of bisyllabic verbs have primary stress on the second syllable. (as cited in Kim, 2012) Kang's study (2004) on stress position of bisyllabic verbs and nouns in Table 1 reveals that among the basic 2,067 English vocabulary for the high school English curriculum, 85.6% are mono or bisyllabic. Recognizing this tendency can facilitate identifying stress position of a large number of words in major parts of speech; nouns and verbs.

Table 1. Stress position and parts of speech of frequently-used bisyllabic words (Kang, 2004)

Stress position	Noun		Verb	
	Strong-Weak	Weak-Strong	Strong-Weak	Weak-Strong
Number of	367	23	35	166

words				
Percentage	94%	6%	17%	83%

2.2.1 English Word Stress with affixes

Stress has an influence upon both quantity and quality of vowels and the difference between stressed and unstressed syllables is greater in English than in most other languages – with the possible exception of German. The change of English stress is never simple and may be brought about by various causes. One factor that influences stress placement is the historical origin of a word. (Celce-Murcia et al, 1996)

2.2.2 Prefixes

According to Celce-Murcia et al. (1996), at large, words containing prefixes tend to be strongly stressed on the first syllable of the base or root element, with the prefix either unstressed or lightly stressed. In English, there are two categories of prefixes: prefixes of Germanic origin and prefixes of Latinate origin. The Germanic category includes *a-*(in *award*) *be-(*in *believe), for-(*in *forgive), mis-(*in *mistake),* and *un/under- (*in *understand).* The second category is prefixes of Latinate origin. These include *a/ad-*(in *agree/adorn*), *com-*(in *command*)*, de-(*in *decide), dis-(*in *discuss), ex-(*in *exist), en-(*in *encourage), ob-(obtain), pre-(*in *predict), pro-(*in *produce), re-(*in *reply)* and *sub-(*in *subside)*.

2.2.3 Suffixes

Suffixes in English are divided into two: inflectional and derivational suffixes. (Lee, 2002) Inflectional suffixes such as –s/es (plural), -ed (past tense) and –ing (present participle or gerund) do not affect stress. Similarly, there are a group of derivational suffixes which does not affect word stress, either, which are called 'weak suffixes' or 'stress-

neutral suffixes'. They may have no effect on the stress pattern of the root word like the suffix '–*ful*' in 'beauty-beautiful', *-able, -al,* -ence, -*hood* and *-ment* etc. although exceptions to this exist as in *admirable* and *ignorance*.

On the other hand, there are so-called 'strong suffixes' which bear stress themselves. They may receive strong stress themselves like the suffix '*-ee'* in 'interview-interviewee'. We call them 'stress-carrying' suffixes, for example, *-ade, -aire, -ee, - esque* and *–eer* and etc. However, the following words have the same stress as those stress-bearing suffixes though they are not made from derivation; *veneer, jamboree* and *brigade*.

The other group of suffixes is what can move stress of the word base (stem) to a different position: *-ic, -cian*, *-tion*, *-y*, *–ity*, and etc. They may cause the stress pattern in the stem to shift from one syllable to another like '*–ic*' in 'atom-atomic'. So to speak, they are 'stress-moving suffixes'. In these, suffix attachment brings about a change in vowel quality as well as shift in stress (Celce-Murcia et al, 1996) ; for example, a stressed vowel [o] in the word 'PHOtograph' becomes [ə] due to neutralization as the suffix –'y' causes shift in stress like 'phoTOGraphy' when attached to the word base.

2.3. EFL Learners' awareness of stress suffixes

Ghorbany (2011) conducted a study on students' awareness of stress patterns (stress-moving and neutral suffixes) to examine the significant difference in placing the two types of stress in terms of level of difficulty. This study got subjects to read stress of a list of words and the same words with suffixes attached. The Matched T-test result showed that stress-moving suffixes are more difficult to learn than neutral-suffixes, leading to making a suggestion that stress pattern in the English language should be explicitly taught and practiced in the

classroom by discovering more effective pedagogical tools or means for the learners to promote their pronunciation.

Motivated by Ghorbany's study (2011) to Iranian college students in EFL context, similar to English learning context in Korea, the present study seeks an extended version of experiment of Ghorbany to investigate learners' degree of awareness on the three stress patterns suffixes can create. And it further attempts to explore the level of difficulty for Korean EFL learners in placing stress when three different types of suffixes are added to word stems; stress-neutral, stress-moving and stress-carrying suffixes. The ultimate goal of this study will be to cast insight into significance of teaching stress and provide pedagogical implications on teaching English word stress and pronunciation.

Given that, this study is designed and conducted to answer the following research questions.

RQ 1: What is the order of difficulty in pronouncing English words as three suffix patterns are added to them?

RQ2: What is the stress rule on suffix attachment that Korean EFL learners need to learn most?

RQ3: What are pedagogical implications made from this study?

3. Method
3.1 Participants

They are randomly chosen 31 female students of the 1st grade of a high school in Changwon, Kyungsangnamdo.

3.2. Procedure

The list of words including main words as the first row and the same words with suffixes as the second row is prepared. Word samples were

collected mostly from the vocabulary domain of middle school English textbooks. There are 6 pairs of words for each suffix pattern. Stress-neutral suffixes under examination include '-al' '-ment' '-able' '-hood' '-ant' and '-al'.   Stress-moving suffixes under examination are '-ity' '-ic'(used for two words) '-ion' '-ian' and '-y'. Stress-carrying suffixes for the experiment are '-een' '-ese' '-ee' '-eer' '-aire' and '-esque'. Then, the subjects are asked to speak words by giving stress to a vowel position they believe to have stress. After that, their pronunciation is recorded and scored in correct or incorrect. Acoustic analysis was conducted. The test sheet is attached to the Appendix on the last page.

4. Results & Discussion

The result initially came out as expected. The order of difficulty in stress pronunciation is as follows: stress-carrying 49%, stress-moving 62% and stress-neutral 66% (from the right to the left, most difficult to least difficult). Thus, in average, words with stress-carrying suffixes are

Figure 1. Top 5 words of highest difficulty
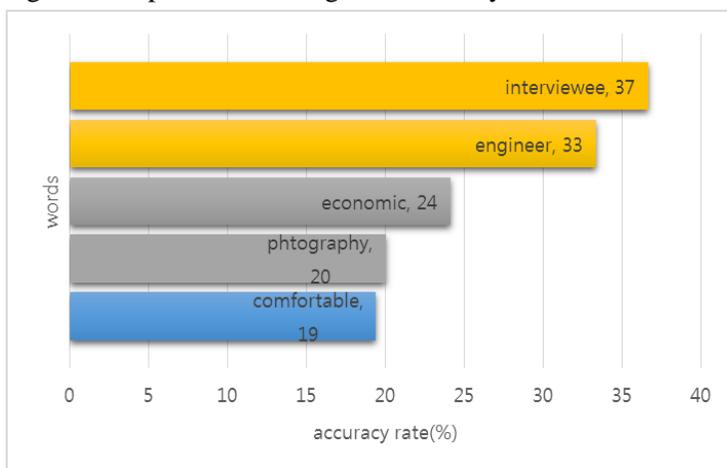
assumed to be the most difficult one to realize stress shift from the word base, the form prior to suffix attachment. However, as shown in Figure 1, it was quite unexpected that the word that had the lowest success rate in shifting stress was *comfortable*, which has a stress-neutral suffix *–able* at the end. Out of thirty one participants, only six correctly put stress on the first syllable and the rest did on the second or third syllable.

Figure 2. Accuracy of stress placement in neutral suffixes
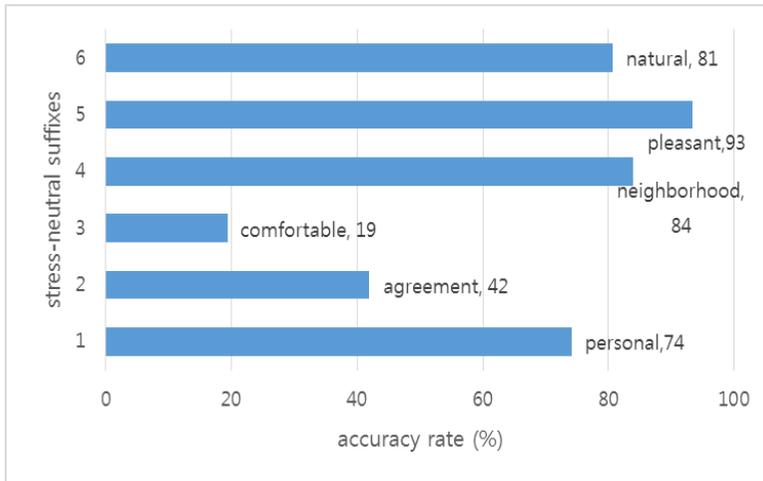
In particular, there were 18 people who put stress on the second syllable when the suffix *–able* was added to the word base *comfort*. The number was twice as many as those who put stress on the third syllable. Figure 1 also indicates that the word with a second lowest success rate to realize is *photography*, a word of the stress-moving pattern. This word did not show any significant tendency; out of thirty, twenty four people almost gave stress evenly in different syllable positions. It may have been affected by its word length. The third most difficult word to put stress on is *economic*, a word with the stress- moving pattern. Out of twenty nines, twenty two subjects did not succeed in stress shift with

sixteen who did not change stress position. It may also have been affected by lack of its phonological rule pertaining to stress shift . The fourth most difficult word to put stress on is a word of stress-carrying suffix pattern, *engineer*. Out of thirty, twenty people gave stress to the second syllable. Lastly, the fifth word of difficulty is *interviewee* that nineteen participants could not put stress on the suffix. To sum up, these top five words came from all the three different suffix patterns.

Close examination made it possible to witness a huge discrepency in the success rate of stress assignment among invidual words particularly, those with stress-neutral and stress-moving suffixes. Except for *agreement* and *comfortable*, which out of thirty one participants, less than half succeeded in finding correct stress position, a majority of them succeeded in giving stress to the rest words.

Regarding the failure rate to finding stress of *agreement* , the incorrect stress assignment of the word base *agree* created the original problem. Out of thirty one, twenty one, which are more than half, pronounced *agree* with stress on the first syllable. Among them, fourteen put stress on the same position when pronouncing *agreement*. And, adding the nine subjects who correctly put stress on the second syllable in prouncing both the word stem and its derived form, there are a total of twenty three who did not attempt stress shift among thirty one. Thus, what can be assumed from the data here is that many participants are aware of the stress pattern '*-ment*', which does not move stress, and that it is too premature to conclude that the error was derived from their ignorance on the shift causing suffix itself. Rather, this result implies the necessity to teach explicitly and practice putting stress on the word base, *agree.* To do so, it is worthy of speculating the cause of such stress error as giving word-initial stress to *agree*.

On the other hand, out of thrity one, half of them put stress of *comfort* on the second syllable. Among them, ten participants correctly pronounced *comfortable* with stress on the second syllable. There are only four of them who could correctly pronounce both *comfort* and

comfortable. It suggests the explicit teaching and practice of the word base form *comfort* , similar to what needs to be done for the pair of *agree* and *agreement.* Additionally, further examination needs to be made on the tendency of stress on the second syllable of *comfort* and *comfortable*.

Some speculations can be made in accouting for the stress errors. First, it is possible that the cause is traced back to the dialect in their native language. Kim (2012) in his study on the stress realization of Kyungsang dialect speakers states that if the word final is a light syllable, stress is accompanied with high tone in the penultimate; for example, [akási] for 'lady' and [mikuráči] for 'mudfish'. It may have affected the stress error that many subjects commiteed in pronouncing *comfort*, which they could take as a three-syllable word [컴포트] in syllabic structure of the Korean language. Another explanation to this error may be that the heavy syllable of –*fort* could attract stress more than *com-*.

Moreover, it is salient that not a small number of participants (seven out of thirty one) divided the word *comfortable* into the following syllabic structure, *com-for-table*, pronoucing the last syllable [teɪbl] as in '*table*'. This recalls another easily noticeable error among EFL learners pronoucing –*mine* to be [maɪn] in '*determine*'. It can be considered as a strategy to make up a gap in pronoucing a confusing word with the word they already know. One clear thing is that they tend to identify the content word *able* with the suffix –*able* and such confusion in pronunciation seems to be mainly due to the same spelling of the two words.

All in all, in the stress-neutral pattern, except the suffix –*able*, the participants generally can put stress on the right position of the words with the suffixes -*al, -ant, -ment* and –*hood* .

Meanwhile, as shown in Figure 3, pronunciation of the words with stress-moving suffixes are mostly scored high except *photography* and *economic*. More specifically, the word base *economy* was pronounced

correctly by most of the participants but, there were only seven who correctly made stress shift. Similarly, there were merely four subjects who were able to move stress to the second syllable when the word base *photograph* was followed by the suffix –*y*.

It was quite mindboggling that the result of stress realization of the two

Figure 3. Accuracy in stress placement of words with stress-
moving suffixes
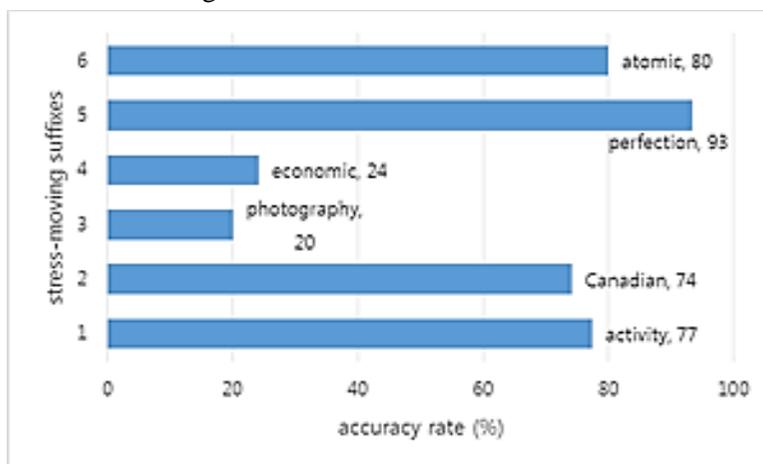
words with the same suffix –*ic* in *atomic* and *economic* was drastically different with 80% to 17% in ratio. This data can support that word length, in other words, the number of syllables in a word, is a strong factor to find the stress position of a word. That is, when a word is longer than another with the same suffix attached to them, one can experience more difficulty in finding stress position in a longer word. In summary, it was found that the suffixes -*ity*, -*ian* and -*tion*   impose relatively less challenge on participants in stress assignment of derived words while the suffixes -*y* in *photography* and -*ic* in *economic* need to be paid more attention to.

Among individual words with the stress-carrying suffixes in Table 4, discrepency in the degree of difficulty of stress placement was not as

great as the other two suffix patterns although overall, participants found stress placement more challenging than in pronouncing words with the other two suffix patterns. As most of the stress-carrying suffixes used for this study such as *-teen, -ese, -aire,* and *–esque* are in need of additional practice, learning the more frequently-used suffixes like *–ee* in *interviewee* and *-eer* in *engineer* needs to be prioritized. It was apparent that they did not know those suffixes bear stress

Figure 4. Accuracy in stress placement of words with stree-carrying suffixes
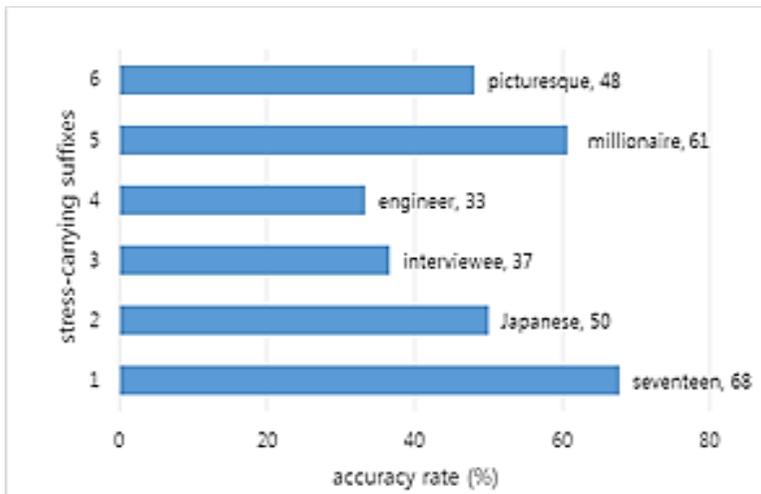
themselves demonstrating stress shift from a stressed (word-initial) vowel of the word base to its adjacent vowel instead of placing stress on the suffixes.

So far, we have looked into whether Korean high school students are aware of the suffixes that affect stress assignment as well as vowel quantity and quality in pronouncing words with stress. The foremost findings about them in this study are first the lack of awareness on English as a stress-timed language, second, the lack of knowledge on the relation between suffixes and stress shift, third, the lack of

knowledge on the effects that stress shift can produce. Lastly, there is a high demand on practice to pronounce syllables both stressed and unstressed, a source of creating rhythms.

Having said that, I would like to propose some approaches to address pronunciation problems related to stress shift. Study on word origin might help understanding of its complexity. As mentioned in literature review, affixes of Latin and Germanic origin maintain particular stress positions of their own. For example, in case of *comfort* and *agree*, their background on origin can be borrowed to disentangle stress irregularities that many participants in this study may have felt.

The words, *comfort* and *agree* take Latinate roots which avoid stress if you look up an etymology dictionary source (http://www. etymonline.com/index.php) though *a-* and *com-* are now subsumed into the word stem so that they are hardly recognized as separate affixes. Use of word origin can facilitate meaningful learning on English stress rules so as to reinforce memory duration.

Also, more fundamentally, the background on the syllabic structure of English word and comparison with that of Korean language needs to be highlighted in speaking class. Knowledge on syllable initial/final consonant clusters of English and light/heavy syllable are necessary to present in teaching pronunciation. In particular, syllable final consonant clusters do not exist in the Korean language (Kim, 1993) and syllable initial consonant clusters are possible only if a glide is followed. Thus, syllable initial consonant clusters like CCV or CCCV in English do not exist in Korean. The notion of heavy and light syllables is something to mention in relation with English stress.

As Korean language does not have the stress system like English which stressed syllables and the rhythm occur repeatedly in regular intervals, presenting some basic concepts or rules on English stress might also be a great support for learners to recognize the regularity of English stress, taking its unpredictability into account at the same time; long vowels and diphthongs attract stress even though there are exceptions to this.

By associating stress with spelling, we can address the simple but substantial stress errors of *agree* and *engineer* that a large number of subjects gave stress on the first syllable in this study by explaining that a long vowel identified as the spelling '*-ee*' attracts stress, whereas '*a-*'in *agree* is a light syllable, being reduced to a lax vowel [ə] without being stressed. In short, it should be an integral part of teaching pronunciation that Korean EFL learners raise awareness on the prosodic features of English and the differences in the syllabic structure between the two languages.

5. Conclusion

The study aims at looking into the degree of awareness of the suffixes that affect English stress. It was found that words with the stress-carrying suffix pattern gives Korean EFL learners in this study hardest task in stress placement and second the stress-moving suffix and lastly, the stress-neutral suffix pattern. It may be due to unfamiliarity with the words of the suffix-carrying pattern. However, it was commonly found from the data of the three patterns that the stress error of the derived forms led to the stress error in the word stem. To address this problem, teachers can ultimately minimize students' frustration by comparisons of prosodic features between the two languages and to encourage them to raise consciousness continuously by clarifying the systematic patterns of stress placement in English words. Also, teachers should develop strategies on how to present word stress to students with careful presentations, various practices from controlled to communicative, and consistent reinforcement. Explicit teaching of word stress patterns should be a part of the ESL/EFL pronunciation curriculum.

References

Baek, S. J. (2009). An analysis of english stress shift realizations by Korean learners of english (Master's thesis). Retrieved from http://www.riss.kr/search/detail/DetailView.do?p_mat_type=be54d9b8bc7cdb09&control_no=b0b1a648acb53abbffe0bdc3ef48d419&outLink=N#redirect

Celce-Murcia, M., Briton, D. M. & Goodwin, J. M. (1996). *Teaching pronunciation: A reference for teachers of English to speakers of other languages*. NY: Cambridge University Press.

Ghorbany. Z. (2011). EFL learners' awareness of stress-moving .vs. neutral suffixes. *English Language Teaching*. doi: 10.5539/elt.v4n4p146

Harper, D. (2013). Online etymology dictionary. http://www.etymonline.com/index.php.

Kang, Y. S. (2004). *Yeng-e kangsey-uy ihay* [Understanding English stress]. Korea, Seoul: Kyengjin Munhwasa.

Kim, H. W. (2012). The effect of Kyungsang dialect on the English word stress acquisition (Master's thesis). Retrieved from http://www.riss.kr/search/ detail/ Detail View. do?p_mat_type= be54d9b8bc7cdb09& control_no =413b7ff7 7582 a4 c3ffe0bdc3ef48d419#redirect

Kim, S. H. (1993). A contrastive analysis of the syllable structures (Master's thesis). Retrieved from http://www.riss.kr /search /detail/ Detail View.do?p _mat_type= be54d9 b8bc7 cdb09 & control_no =53cdcf37 b147a292 #redirect

Lee, Y. G. (2002). *Yeng-e kangseylon* [English stress theory]. Korea, Chonman: Chonnam University Press.

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Appendix

주어진 번호 가운데 <u>가장 강하게 읽을 곳</u>을 하나 골라 동그라미 하세요.

1 2   1 2 3
seven – seventeen

1 2   1 2 3
Japan – Japanese

1 2   1 2 3 4
active – activity

1   2   1 2 3
person – personal

1 2 3   1 2 3   4
interview – interviewee

1 2   1 2 3
agree – agreement

1 2 3   1 2 3
Canada – Canadian

1   2   1   2 3
comfort – comfortable

1 2 3   1 2 3 4
photograph– photography

1   2   1   2 3
neighbor – neighborhood

1   1 2
please – pleasant

1 2 3   1 2 3 4
economy – economic

1 2   1 2 3
engine – engineer

1 2   1 2 3
perfect –   perfection

1 2   1 2 3
million – millionaire

1 2   1 2 3
nature – natural

1 2   1 2 3
picture – picturesque

1 2   1 2 3
atom – atomic   끝.