

<https://helda.helsinki.fi>

Intensifier-Verb Collocations in Academic English by Chinese Learners Compared to Native-Speaker Students

Wu , Junyu

2021-12

Wu , J & Tissari , H 2021 , ' Intensifier-Verb Collocations in Academic English by Chinese Learners Compared to Native-Speaker Students ' , Chinese Journal of Applied Linguistics , vol. 44 , no. 4 , pp. 470-487 . <https://doi.org/10.1515/CJAL-2021-0030>

<http://hdl.handle.net/10138/352409>

<https://doi.org/10.1515/CJAL-2021-0030>

unspecified

acceptedVersion

Downloaded from Helda, University of Helsinki institutional repository.

This is an electronic reprint of the original article.

This reprint may differ from the original in pagination and typographic detail.

Please cite the original version.

A comparative study of Intensifier-verb collocations in academic English by Chinese learners and native-speaker students

Abstract.

It is difficult for L2 learners of English in general and especially Chinese learners of English, to form idiomatic collocations. This article presents a comparison of the use of intensifier-verb collocations in English by native English speaking students and Chinese students, paying particular attention to verbs which collocate with intensifiers. The data consisted of written production from three corpora: two of these are native English corpora: the *British Academic Written English (BAWE) Corpus* and *Michigan Corpus of Upper-Level Student Papers (MICUSP)*. The third corpus is a recently created Chinese Learner English corpus, *Ten-thousand English Compositions of Chinese Learners (TECCL)*. The findings suggest that Chinese learners of English produce significantly more intensifier-verb collocations than native English speaking students, but that their English attests a smaller variety of intensifier-verb collocations compared with the native speakers. Moreover, Chinese learners of English use the intensifier-verb collocation types *just-verb*, *only-verb* and *really-verb* very frequently compared with native speaker students. As regards to verb collocates, the intensifiers *hardly*, *clearly*, *well*, *strongly* and *deeply* collocate with semantically different verbs in native English and Chinese learner English. Compared with the patterns in Chinese learner English, the intensifiers in native speaker English collocate with a more stable and restricted set of verb collocates.

Keywords: Chinese learner English, (intensifier-verb) collocation, corpus linguistics, L2 English, learner corpora

1. Introduction

It is important to study collocations in L2 English because it is difficult for L2 learners of English to form idiomatic collocations. One challenge is that some collocations, such as *throw a party* and *pay attention*, do not allow variation, while free collocations, such as *open the gate* and *a nice car* allow some variation (Laufer & Waldman, 2011, p. 649; Wang & Shaw, 2008, p. 204). According to Laufer and Waldman, who provide a long list of references (2011, p. 647), the “importance of multiword units and the learning problems associated with them were realized long ago and have been discussed ever since”. After presenting findings on how well native speakers of Hebrew learn English collocations, Laufer and Waldman call for research in “additional learner populations” (2011, p. 666–667).

It may be particularly difficult for Chinese learners of English to use idiomatic English collocations. Previous literature suggests that it is challenging for them to produce native-like collocations, because collocations are often unpredictable and hard to recall (Wang & Shaw, 2008; Xia, 2013; Huo, 2014). More specifically, the teaching of English collocations has been largely neglected in China (Huo, 2014). Chinese-English dictionaries only provide types of verb-noun and noun-verb collocations, but very much ignore other types of collocations (Xia, 2015). These include adjective-noun, verb-adverb and adverb-adjective collocations (Xia, 2015). Moreover, many adverbs in English do not have direct equivalents in Chinese. This means that Chinese learners of English may not have a frame of reference for some English adverbs.

While there is already some research on collocations in Chinese learner English (hereafter: CL English), such as Wang’s (2013) dissertation on verb-noun collocations, research focusing on adverb collocations in Chinese learner English still remains a somewhat neglected area. The current study attempts to partly fill this gap. We focus on academic English which presents challenges to Chinese overseas students studying, for example, in the United Kingdom (Leedham, 2015). The study draws on corpus linguistics and deals with data from three corpora. Two of these are native English corpora: the *British Academic*

Written English (BAWE) *Corpus* and *Michigan Corpus of Upper-Level Student Papers* (MICUSP). The third one which yields the primary data is a recently created CL English corpus, *Ten-thousand English Compositions of Chinese Learners* (TECCL). We compare CL English with native speaker English (hereafter: NS English) in order to prepare way for teaching Chinese students how they could improve their academic English.

2. Theoretical Background

2.1 What is collocation?

2.1.1 Defining the term *collocation*

The term *collocation* was first introduced by Firth (1957). According to Firth, the collocations of a given word are “statements of the habitual or customary places of that word” (Firth, 1968, pp. 181–182). In the field of corpus linguistics, Sinclair (1991, p. 170) defined collocations as “items that occur physically together or have stronger chances of being mentioned together”. According to Sinclair, there is no specific rule or regulation that explains these occurrences (Sinclair, 1991). Halliday and Hasan (1976, p. 371) later explained that a collocation is “a cover term for cohesion that results from the co-occurrence of lexical items that are in some way or other typically associated with one another, because they tend to occur in similar environments”. For example, the word *post* tends to occur together with such words as *office*, *man*, and *card*, and the word *night* is closely associated with *darkness*.

McEnery, Xiao and Tono (2006, p. 48) define the term collocation as a “characteristic co-occurrence patterns of words”. Furthermore, a collocation could be defined as a sequence of words or terms that co-occur more often in corpus data than would be expected by

chance (McEnery, Xiao & Tono, 2006). This definition will be adopted here. There are many statistical measures that can be used to test the relation between two items in a collocation, such as the MI (Mutual Information) and T-test (McEnery, Xiao & Tono, 2006). According to Hunston (2002, p. 71), an MI score of 3 or above can be taken as evidence that two items are collocates.

According to McEnery, Xiao and Tono (2006), a collocation can be either lexical or grammatical. Lexical collocations are possible combinations of open class words, such as verbs, nouns, adjectives and adverbs, and grammatical collocations are combinations of open class words with a preposition or a grammatical structure, such as *to turn on the light* (Baker, 1992; Bahns & Eldaw, 1993; Benson, 1985).

Furthermore, collocations can be free collocations, “consisting of items used in their literal senses and freely substitutable, such as *open the gate, a nice car*” (Wang & Shaw, 2008, p. 204). This category includes all possible semantically natural combinations. (Wang & Shaw, 2008). Such collocations are predictable (Nimb 1996). However, some collocations are restricted collocations which “have one item used in a non-literal sense, a specialized or figurative sense, and the other used in its normal meaning such as *run a company*” (Wang & Shaw, 2008, p. 205). Such collocations are impossible for non-native speakers to predict, because the noun selects the verb for unexplainable syntactic reasons (Nimb, 1996).

Collocations can be further discussed in terms of semantic prosody and semantic preference (e.g. Xiao, 2016). Semantic preference can be defined as “the relation between a word form and set of semantically related words” (Begagić, 2013, p. 403). According to Stubbs (2002, p. 449), “semantic preference is a lexical set of frequently occurring collocates sharing some semantic feature”. Begagić (2013) showed that the adjective *large* co-occurs with a specific group of objects such as *numbers, scales, parts, amounts* and *quantities* which are united by a common semantic feature described as ‘the relative extent of something’. Semantic prosody is excluded in this study because it is difficult to set up general criteria to determine whether certain lexical items have a positive or negative meaning. Cheng (2006) who studied SARS spoken discourse in Hong Kong also noted this

problem. Stubbs (2001, p. 66, 105–106) discusses it in terms of discourse prosody: he points out that people read different connotations into words and that a concordance line may not give enough evidence to justify a decision.

2.2 Intensifier-Verb Collocations

2.2.1 Intensifiers in English

The term *intensifier* is used to designate certain adverbs which can be positioned before the verb (Greenbaum, 1970). According to Quirk et al. (1985), intensifiers are used to modify predicates in full or in part. Quirk and Greenbaum (1973, p. 215) define intensifiers as adverbs which “indicate a point on the intensity scale which may be high or low”. Quirk et al. (1985, p. 589–590) classify intensifiers as follows:

Amplifiers: Maximizers (e.g. *completely*)

Boosters (e.g. *very much*)

Downtoners: Approximators (e.g. *almost*)

Compromisers (e.g. *more or less*)

Diminishers (e.g. *partly*)

Minimizers (e.g. *hardly*)

Amplifiers scale upwards: maximizers “denote the upper extreme of the scale” and boosters “denote a high degree, a high point on the scale” (Quirk et al., 1985, p. 590). It nevertheless seems difficult to make a clear distinction between maximizers and boosters. Quirk et al. (1985, p. 591) explain, for example, that when maximizers are in the middle position (before the verb), they often express a very high degree, whereas when they occur at the end of the clause, they convey “their absolute meaning of extreme degree”. However, the distinction can also depend on contexts and speakers’ judgments.

On the other hand, downtoners, according to Quirk et al. (1985, p. 597), have a “generally lowering effect on the force of the verb or predication and many of them apply a scale to gradable verbs”. Downtoners are divided into four subgroups (Quirk et al., 1985, p. 597):

- (a) Approximators serve to express an approximation to the force of the verb, while indicating that the verb concerned expresses more than is relevant.
- (b) Compromisers have only a slight lowering effect and tend, as with (a), to call in question the appropriateness of the verb concerned.
- (c) Diminishers scale downwards and roughly mean ‘to a small extent’.
- (d) Minimizers are negative maximizers, ‘(not) to any extent’.

Approximators include such adverbs as *almost*, *nearly*, *virtually*, and *practically*, while compromisers include *kind of*, *sort of*, *quite*, and *rather* (Quirk et al., 1985). Diminishers are more complex to describe and define. They may be divided into “expression diminishers which seek to express only part of the potential force of the item concerned” and “attitude diminishers which seek to imply that the force of the item concerned is limited” (Quirk et al. 1985, p. 598). Expression diminishers include, for example, *mildly*, *partly*, *slightly*, and *somewhat*, and attitude diminishers include, for example, *only*, *just*, *merely*, and *simply*. Finally, minimizers can be negatives, such as *barely*, *hardly*, *little* and *scarcely*, and nonassertives, such as *in the least* and *at all* (Quirk et al. 1985).

2.2.2 Intensifier-verb collocations in English

We can distinguish between two main types of intensifier-verb collocations: amplifier-verb collocations and downtoner-verb collocations. Amplifiers often co-occur with verbs having a favorable or unfavorable implication, as in *greatly admire*, *entirely agree*, and *completely forget* (Quirk et al., 1985).

Most amplifiers can occur in the middle and end positions in a clause. The middle position is preferred by both maximizers and boosters when they express a scaling upwards, and the middle position is preferred even more by maximizers when they express the absolute upper extreme of the scale (Quirk et al., 1985). As mentioned earlier, downtoners often co-occur with gradable verbs denoting a lowering effect on the force of the verbs. According to Quirk et al. (1985), most downtoners favor an end-medial position in the clause.

It is interesting to note that some amplifiers can be both amplifiers and manner adverbs, as can be seen in example (1) (Greenbaum, 1970, p. 26):

- (1) He *badly* needs the money.
He treats his servant *badly*.

There, *badly* is an amplifier denoting some extent of the verb *need* in the first clause, but it is used as a manner adverb in the second clause. However, it is impossible to distinguish between amplifiers and manner adverbs through a syntactic approach, because all amplifiers are not identical in their syntactic features (Greenbaum, 1970). Consider a second example (Greenbaum, 1970, p. 25):

- (2) He needs the money *badly*.
He treats his servant *badly*.

The amplifier *badly* can be positioned at the end of the clause like a manner adverb. According to Greenbaum (1970), intensifiers may nevertheless be distinguished from manner adverbs by several criteria. Here, we only look at two most important criteria. Firstly, “intensifiers are always fully acceptable before the verb in a declarative affirmative sentence whereas manner adjuncts often are not acceptable in that position” (Greenbaum, 1970, p. 26). Secondly, intensifiers contrast with *to some extent* (Greenbaum, 1970; Quirk et al., 1985). For instance, we can say that *he needs the money to some extent*, but we cannot say that *he treats his servant to some extent**. The current study focuses on intensifier-verb collocations rather than both intensifier-verb and verb-intensifier collocations, because intensifiers co-occur more often before verbs in a sentence, and because most of the intensifiers coming after verbs are manner adverbs rather than intensifiers.

2.2.3 Adverbs in Chinese Mandarin

It appears that no such clear definition of intensifiers can be given for Chinese as it can be for English. One reason is that there are not many adverbs in Chinese. This can be

illustrated through translation: for example, the English adverbs *excessively*, *extremely*, and *exceedingly* are all translated as only one single Chinese adverb *tai*. It is true that some adverbs in English do not have direct and transparent equivalents in Chinese.

In Chinese, adverbs are used to modify adjectives and verbs in the sense of degree, scope, time and frequency, and sometimes adverbs can be used to modify nouns as well (Chen, 1982; Huang and Liao, 1991; Feng, 2012). Chinese adverbs can also be divided into the following five categories: temporal adverbs, degree adverbs, scope adverbs indicating the scope within which the predicate applies, negation adverbs and stance adverbs showing the speaker's stance towards what he or she is saying (Biq, 2014). Moreover, in some particular contexts, Chinese adverbs can function as adjectives (Biq, 2014). This makes them very different from English adverbs with respect to their functions and collocations. Their definition also varies between scholars.

2.2.4 Intensifier-verb collocations in Chinese Mandarin

It is important to understand the use of intensifier-verb collocations in Chinese Mandarin because we assume that L1 influence could be a crucial reason why Chinese learners of English produce non-native like intensifier-verb collocations.

Intensifiers are often called degree adverbs in Chinese. They are typically used to modify adjectives, ranging from a low degree (e.g., *shaowei* 'a little bit') to a high degree (e.g., *hen* 'very', *feichang* 'very') and to an excessive degree (e.g., *tai* 'too much/excessively'). They can also modify some mental verbs, such as *henxihuan* 'like very much/really like'. (Biq, 2014, p. 418.) More importantly, scope adverbs often collocate with verbs. Subtypes of scope adverbs include those referring to universal coverage (e.g., *dou* 'all', *quan* 'all', and *yigong* 'altogether'), those referring to minimum coverage (e.g., *zhi* 'only', *cai* 'only', and *guang* 'just, alone'), and those referring to approximate coverage (e.g., *dagai* 'about, approximately', and *dayue* 'about, approximately'). There are further groupings in approximate subtypes, such as those indicating small quantity (e.g., *buguo* 'just', *zuiduo*

‘the most’) and those indicating large quantity (e.g., *zhishao* ‘at least’, *zuzu* ‘no less than’). (Biq, 2014, p. 420.) A couple of examples by Biq (2014, p. 420) are presented below:

(3) Wo zhi you yizhang chuang.

1S only have one-CL bed

I have got only one bed

(4) Ta zhi chi zhurou.

3S only eat pork

He only eats pork

As regards to intensifiers, it is important to understand that the functions and usage of Chinese adverbs are always vague. Many of them can function as adverbs and adjectives at the same time, and some of them can also be used as connectives in a clause.

2.3 Previous research on collocations

There are some previous studies dealing with intensifier-verb collocations in English. Greenbaum (1970) suggested that there may be a restricted range of verbs available to act as collocates of a particular intensifier in English. According to Greenbaum,

for some intensifiers, the collocational range of verbs can be defined semantically. For others, there appears to be a collocational range of verbs that are semantically homogeneous, but nevertheless some verbs that are apparently in the same semantic group are unacceptable as collocates. (Greenbaum, 1970, p. 83.)

For instance, *deeply* collocates particularly with *hate*, *dislike*, *admire*, *love*, and *value*, and yet **deeply like* is an unacceptable collocation (Greenbaum, 1970, p. 83). To give another example, most of the attitudinal verbs collocating with (*very*) *much* and *greatly* express a favorable attitude, while those collocating with *utterly* and *completely* often express an unfavorable attitude (Greenbaum, 1970, p. 84).

Lu (2017) has examined differences between collocations, such as verb-noun collocations, adjective-noun collocations and adverb-verb/verb-adverb collocations, in NS English and

CL English by comparing two corpora: the *Louvain Corpus of Native English Essays* (LOCNESS) and the *Non-English Major Mainland Chinese Learner Corpus* (MLC). He found in particular that Chinese learners of English tend to use verb-adverb collocations, such as *work hard* more frequently than adverb-verb collocations, such as *totally agree*. His work suggested that there is less variety of collocations in CL English than NS English. (Lu 2017.)

Furthermore, Duan and Qin (2012) have suggested that errors in Chinese learners' English collocations result from their attempt to make use of their L1 knowledge. They also claimed that "Chinese is more economical in vocabulary in that it makes use of the same word (character) to express many different meanings where English employs separate words" (Duan & Qin, 2012, p. 1892). Xia (2013) has examined the use of verb-noun collocations in CL English and proposed that Chinese learners of English tend to overuse collocations that have an equivalent in Chinese, and underuse collocations with a negative semantic prosody.

To sum up, previous studies of collocations in CL English mostly focus on verb-noun collocations. Lu's study (2017) is a recent exception, but his study was different from the present study. Firstly, Lu's (2017) perspective was very general. He investigated the use of all types of collocations in CL English, including lexical and grammatical collocations. Thus, he did not specifically focus on adverb-verb or verb-adverb collocations. In contrast to his study, we can consider the strong collocational tie which intensifiers/degree adverbs have with the verbs they collocate with, as demonstrated by Greenbaum (1974). Secondly, Lu (2017) only looked at the frequency of occurrence of the target items but did not examine adverb-verb/verb-adverb collocations statistically. Some of the collocations in his study may have resulted from chance.

Our hypothesis is that there will be variation in the usage of intensifier-verb collocations between CL English and NS English. More specifically, we expect there to be differences in the verb collocates and types of intensifier-verb collocations.

3 The aim of this study

The aim of the study is to investigate the use of intensifier-verb collocations by Chinese learners of English and native English speakers, paying particular attention to the range of verbs which collocate with intensifiers. The following research questions will be posed:

1. What are the overall frequencies of occurrences in CL academic English and NS academic English?
2. What are the most frequent intensifier-verb collocations in academic writing by Chinese learners of English and native English-speaker students?
3. What are the differences in the use of such collocations between Chinese learners of English and native English speaking students, especially as regards to the verb collocates?

4. Research materials and method

Three corpora will be used in this study. These comprise two native English corpora and a new Chinese learner corpus. One of the native English corpora represents American English, and the other British English. This choice was based on our knowledge that in China, both American English and British English are taught at schools.

In relation to the American data, the *Michigan Corpus of Upper-Level Student Papers* (MICUSP) is a corpus of student writing in English, containing 830 A-grade papers, roughly 2.6 million words, from a range of disciplines across the four academic divisions of Humanities and Arts, Social Sciences, Biological and Health Sciences, and Physical Sciences at the University of Michigan. Ädel and Garretson (2006, p. 271) wrote that the aim of the MICUSP compilers was to create a corpus which would be “balanced with respect to the ten different disciplines” and the “year of study of the writers (ranging from

fourth-year undergraduate to third-year graduate)”. The corpus includes many different genres, such as argumentative essays, creative writing, reports, and research papers.

The *British Academic Written English (BAWE) Corpus* was created in a project entitled “An investigation of genres of assessed writing in British Higher Education” from 2004 to 2007. It contains 2,761 pieces of proficient student writing, ranging in length from about 500 words to about 5,000 words. The corpus is balanced in terms of the four broad disciplinary areas of Arts and Humanities, Social Sciences, Life Sciences and Physical Sciences, and across four levels of study, from undergraduate to taught masters level (Heuboeck, Holmes & Nesi, 2010).

As mentioned earlier, the *Ten-thousand English Compositions of Chinese Learners (TECCL) Corpus* is a fairly new Chinese learner corpus which was created in 2015. It contains approximately 9,864 essays written by Chinese EFL learners, totaling 1,817,335 words. It includes argumentative essays, expository essays and narrative essays collected from Chinese EFL learners in China from elementary school to undergraduates. The corpus contains 6,867 college essays and 2,997 high school essays written between 2011 and 2015. Unlike other Chinese learner corpora, such as the *Chinese Learner English Corpus (CLEC)* and the *Spoken and Written English Corpus of College Learners (SWECCL)*, the essays in the TECCL corpus were not only written by Chinese learners of English who major in English but also by other kinds of students, which means that the corpus is more representative of Chinese students’ overall level of English skills. In addition, the essays are all pos-tagged (Xu, 2015). The information is based on materials downloaded at <<http://www.bfsu-corpus.org/content/teccl-corpus>>, of which the short description of the corpus by Xu is only one part. See list of references for the current web address.)

We used 2,400 argumentative essays written by Chinese college students. Their total number of tokens was 489,236. The essays varied in length from a minimum of 200 words to a maximum of about 800 words, with an average of about 500 words. Although this data is somewhat different from our NS data, it should be taken into account that all essays in the Chinese learner corpus were written by students attending higher education and that it

is difficult to precisely define academic English. In applied linguistics, relative clauses, *it* introductory patterns, and passive voice are often considered as major features of academic English. Our data can be seen as academic English, because each text from the TECCL attests passive voice, relative clauses, normalization and *it* introductory patterns.

In addition, a batch script program was used to select random college students' essays from among the 6,867 college students' essays from the TECCL. It can select random data and put the data in a single file automatically.

As regards to the NS corpora, the material of the current study included 186 argumentative essays from the MICUSP corpus, which ranged from 800 to 1,000 words. Their total number of tokens was 933,811. Moreover, it covered all the 110 sociology essays in the BAWE corpus, which varied in length from 1,000 to 1,500 words. The sociology essays were chosen because many argumentative essay topics in TECCL corpus can be seen to relate to sociology. We did not use any essays by non-native English speaking students in the NS corpora.

Firstly, AntConc, a freeware concordance program, was used in the current study (<http://www.laurenceanthony.net/software.html>). It was used to analyze both the TECCL and MICUSP corpora, to calculate the frequencies of the occurrence of the target items, and to produce a set of concordance lists of the items for qualitative analysis. Another tool called the Sketch Engine (<https://www.sketchengine.co.uk/>) was used to analyze data from the BAWE corpus. AntConc and Sketch Engine were also utilized to calculate statistics on intensifiers and their verb collocates.

The reason why we applied different corpus analytical programs or tools to analyze the three corpora was that three corpora are slightly different. For TECCL and MICUSP, original texts including raw corpus files and tagged corpus files were available, so we were able to analyze them individually with AntConc. BAWE, on the other hand, is only accessible on Sketch Engine.

As regards procedures, AntConc was first used to measure the frequencies of occurrences of adverb-verb collocations in the TECCL and MICUSP corpora. Sketch Engine was similarly used to measure the frequencies of occurrences of adverb-verb collocations in the BAWE corpus. Secondly, the data gathered with the help of AntConc and Sketch Engine was copied into an Excel file. Two researchers identified the intensifier-verb collocations in the data. Thereafter, the most frequently used intensifiers with their verb collocates could be found. Moreover, AntConc and Sketch engine were used to analyze intensifiers and their verb collocates statistically: the setting of measuring collocations is MI (Mutual information) score. The concordance lines produced by AntConc and Sketch Engine were also used for a qualitative analysis that searched for additional interesting patterns in the data.

5 Results

5.1 Overall frequencies of occurrences in CL English and NS English

Table 1 below shows the raw numbers and relative frequencies of occurrences per 10,000 words of intensifier-verb collocations in CL English and NS English. The share of intensifier-verb collocations of all adverb-verb collocations is larger in texts written by Chinese learners of English compared with native speakers. Even more generally, the Chinese learners produce both adverb-verb collocations and intensifier-verb collocations much more frequently than the native speakers.

Table 1: The overall frequencies of intensifier-verb collocations in the corpora.

Corpus	Intensifier-verb collocations total (per 10,000 words)	Adverb-verb collocations total (per 10,000 words)	Percentage of intensifier-verb collocations among all adverb-verb collocations
TECCL	796 (16.27)	4016 (82.08)	20%
MICUSP	582 (6.23)	4126 (44.18)	14%
BAWE	228 (3.09)	1762 (21.14)	13%

However, it is important to examine whether there are statistically significant differences between the frequencies of such patterns in CL English and NS English. Table 2 shows the expected and observed adverb-verb collocations in the data, divided into intensifier-verb and other adverb-verb collocations. A Chi-square test revealed statistically significant differences between the three corpora regarding the frequencies of intensifier-verb collocations compared to the adverb-verb collocations. The chi square statistic $\chi^2 = 65.87$ is much greater than the critical value 13.8 for the 0.1 percent level and 2 degrees of freedom. Note in particular that the observed number of 796 intensifier-verb collocations is much higher than the expected number of 651.2 in the TECCL, while in the NS corpora, the observed numbers of intensifier-verb collocations are smaller than the expected numbers. This confirms that in these data, the Chinese learners of English produce significantly more intensifier-verb collocations than the native speakers.

Table 2: Expected and observed intensifier-verb and other adverb-verb collocations in the data.

Corpora	Intensifier-verb collocations	Other adverb-verb collocations	Adverb-verb collocations
	observed (expected)	observed (expected)	(total)
TECCL	796 (651.2)	3220 (3364.8)	4016
MICUSP	582 (669.1)	3544 (3456.9)	4126
BAWE	228 (285.7)	1534 (1476.3)	1762
total	1606	8298	9904

5.2 The number of types of intensifier-verb collocations in the corpora

Several researchers have pointed out that collocations vary less in CL English than NS English (e.g. Lu, 2017; Xia, 2013), but this conclusion is largely based on their intuition. To examine the matter further, table 3 shows the number of two kinds of intensifier-verb collocations in the three corpora, containing either downtoners or amplifiers. The types of

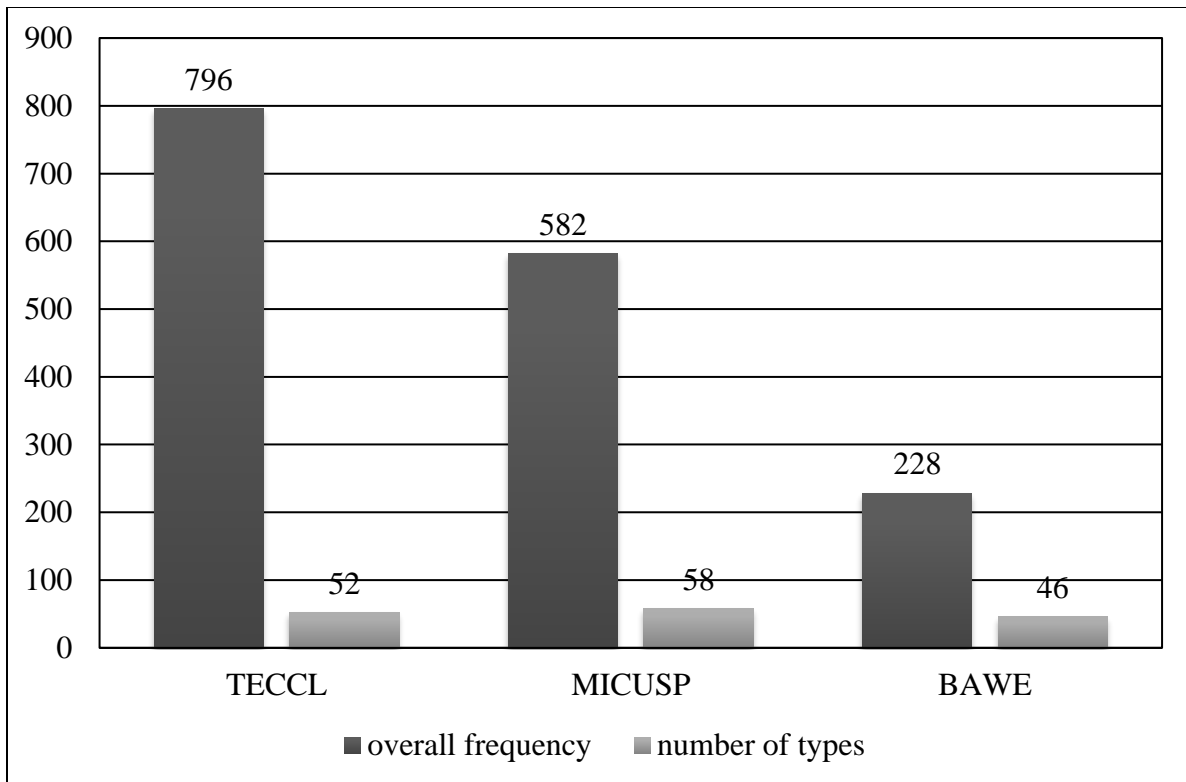
collocations calculated for table 3 are based on the intensifier. For example, *rarely-verb* and *barely-verb* are considered two different types in the category downtoner-verb collocation. Overall, there are 52 types of intensifier-verb collocations in the TECCL, while there are 58 types of intensifier-verb collocations in the MICUSP and 46 types of intensifier-verb collocations in the BAWE. It thus appears that when the writers in our data decide to use an intensifier-verb collocation, the number of options they choose from does not vary very much, regardless of their mother tongue.

Table 3: The number of types of intensifier-verb collocations in the corpora.

Corpora	Downtoner-verb	Amplifier-verb	Total
TECCL	13	39	52
MICUSP	15	43	58
BAWE	10	36	46

However, Chinese learners of English produce many fewer types of collocations in their writings compared with native speakers. To be more specific, there are 796 intensifier-verb collocations in total in CL English, but only 52 different types of them. On the other hand, in the BAWE, there are a total of 228 intensifier-verb collocations, almost three times less than those in CL English, but 46 types. In the MICUSP, there are 582 intensifier-verb collocations, and 58 types. See figure 1.

Figure 1. *The Overall Frequencies of Intensifier-Verb Collocations Compared with The Numbers of Different Intensifier-Verb Collocation Types in Each Corpus.*



More specifically, there are some particular types of intensifier-verb collocations in our NS English data which do not occur in our CL English data. They begin with *perfectly*, *terribly*, *virtually*, *barely*, *stoically*, *profoundly*, *severely*, *practically*, *substantially*, *loosely*, *sufficiently*, *poorly*, *acutely*, *tightly*, *adequately*, *vaguely*, *vastly*, *overwhelmingly*, *heavily* and *gradually*. The Chinese writers did not use these intensifiers with any verbs. As noticed by Greenbaum (1970), whether an adverb which is primarily used to express manner should be considered a manner adverb or an intensifier depends on its syntactic position and the verbs it collocates with. In light of our findings, there are a number of manner verbs used as intensifiers in NS English which Chinese learners do not use.

Ellis (2000) has suggested that learners avoid using linguistic functions or markers which do not exist in their first language, because they know they will use them incorrectly. This could be one reason why those intensifiers are missing from our Chinese data, although the

Chinese writers do use some manner adverbs, such as *badly* and *significantly*, as intensifiers. It is probably not wrong to generalize that Chinese learners of English rarely use manner verbs as intensifiers in their writing, while such usage is quite typical of NS English.

5.3 Most frequent intensifier-verb collocations in CL English

We will now look more closely at which intensifiers Chinese learners of English use. Table 4 suggests that the term *just* is the most frequently used intensifier collocating with verbs in CL English. Besides that, two other intensifiers, *only* and *really*, are used very frequently. Interestingly, the three most frequently used intensifiers *just*, *really*, and *only* are colloquial.

Table 4: The most frequent intensifier-verb collocations in the TECCL.

Intensifier	Absolute frequency	Frequently collocates with (lemma)
1. just	178	want, need, think
2. only	120	need, want, know
3. really	119	want, need, like, love, hope
4. easily	46	find, see, get, happen, prove
5. fully	23	understand, use
6. greatly	21	improve, increase, influence, attract
7. hardly	20	find, enjoy, admire, see
8. clearly	20	see, remember, know
9. well	19	preserve, understand, know
10. deeply	18	move, love, appreciate
11. strongly	15	recommend, influence, disagree

Moreover, if we take a look at the verb collocates of the three most common intensifiers in CL English, we notice that some of their collocational verbs belong to the same semantic group. To give an example, the verbs *want*, *need*, and *hope* tend to express a desire to achieve something good, as in examples (5) to (7):

- (5) At first, they **just want** to earn a living; they **just want** to make their families live a good life. (TECCL02234.txt)
- (6) You **only need** to know if you are gold you will shine everywhere. (TECCL03684.txt)
- (7) I **really hope** I will have such a perfect husband some day and live with him for a whole life. (TECCL05475.txt)

The rest of the intensifiers appear to occur less in the data. Most of them are amplifiers. It is interesting to note that *clearly* collocates specifically with a group of mental verbs: *see*, *remember*, and *know* refer to something that occurs in the mind, for example, an intellectual process. This is illustrated by the following:

- (8) We can **clearly see** the disadvantage of college students' hiring cleaners. (TECCL03629.txt)
- (9) I **clearly remember** that it happened in the spring at the beginning of a semester. (TECCL03685.txt)
- (10) Customers **clearly know** about the capital flows or the formation of the price. (TECCL05216.txt)

This indicates a certain semantic association between some intensifiers and their verb collocates, which Greenbaum (1970) noted in NS English. On the other hand, other intensifiers in the CL data seem to collocate with a wide range of verbs. For instance, as shown in examples (11) and (12), the intensifier *greatly* can collocate both with verbs expressing a positive expansion and verbs showing a negative impact, which is very different from Greenbaum's findings (1970). Hence it is important to understand how those patterns are used in NS English, and compare CL English with it.

- (11) Reading good books can **greatly increase** knowledge and significantly improve ability. (TECCL04235.txt)
- (12) This bad habit **greatly influences** student's writing and bringing more problems with study life. (TECCL09164.txt)

In this section, we will compare the most frequent CL English intensifier-verb collocations with NS English. Later, we will look both NS corpora in turn. Table 5 shows which verbs the most frequent intensifiers from CL English collocate with in the NS corpora. It shows that in NS English, some intensifiers, such as *hardly*, *clearly*, *well*, *deeply*, and *strongly*, collocate with verbs that belong to different semantic sets compared with those in CL English.

Table 5: The most frequent intensifiers from the CL data collocating with verbs in the NS data.

Intensifiers	Verbs collocated with (lemma)
1. just	want, reflect, think
2. only	become, increase, show, strengthen
3. really	want, know, believe, enjoy
4. easily	understand, influence, derive
5. fully	explain, understand, resolve
6. greatly	increase, reduce
7. hardly	blame, influence, treat
8. clearly	define, show, reveal, involve
9. well	prove, find
10. deeply	root, influence, implicate
11. strongly	suggest, support, connect, link

For example, in CL English, *hardly* is mostly used to collocate with the verbs *enjoy* and *admire*, in order to express a favorable attitude, whereas in NS English *hardly* is used with the verb *blame* in order to express a negative feeling, and it is not used to collocate with favorable attitudinal verbs at all. See examples (13) and (14):

(13) They **hardly admire** the beauty of the festival itself. (TECCL06910.txt)

- (14) One can **hardly blame** those hardest hit for pushing back unpredictably and violently against the two institutions and their western controllers. (Tagged_NRE.G0.02.1.txt: MICUSP)

In CL English, *clearly* has a strong semantic association with mental verbs, while in NS English, it mainly seems to collocate with verbs suggesting that something is displayed, such as *show* and *reveal*. What is more, in CL English, *well* is used quite often to collocate with mental verbs, such as *understand* and *know*. In NS English, on the other hand, *well* is used to collocate with verbs such as *prove* and *find* united by a common semantic feature ‘identifying or demonstrating the existence of something’. See examples:

- (15) We can **clearly see** that an old women sitting on the chair in front of the mirror and talking by her. (TECCL02242.txt)
- (16) The royal family **clearly shows** that the biggest traditional hierarchy... (text#669: BAWE)
- (17) The teacher should **well understand** the tiredness of the students though they take the students’ benefit into consideration. (TECCL07295.txt)
- (18) Draw attention to the painter’s reluctance to ask Ruth a question whose answer might **well prove** negative: Are you happy? (Tagged_ENG.G2.04.1.txt: MICUSP)

Interestingly, our data does not agree with everything that Greenbaum (1970) suggested about NS English. According to him, *deeply* collocates specifically with attitudinal verbs, such as *hate*, *dislike*, *admire*, *love* and *value* (Greenbaum, 1970). It is not so in these data. However, in CL English, *deeply* is in fact used to collocate with such attitudinal verbs, for example, with *love* and *appreciate*, as in:

- (19) Today I **deeply appreciate** literature thanks to my Chinese teacher who renders me intrigued to discover the beauty of literature. (TECCL00249.txt)

Furthermore, *strongly* can collocate with the verbs *influence* and *disagree* with a negative implication in CL English, but in NS English, it is used to collocate with the verbs *connect* and *link* which share the sense of ‘bringing something together’, as shown in (20) and (21):

- (20) Some teachers even think that it is part of their work to give students homework. I **strongly disagree** with this view. (TECCL01613.txt)
- (21) This mode, privileging a conception of narrative heritage, is also **strongly linked** with the tragic. (Tagged_ENG.G2.02.1.txt: MICUSP)

It is clear that in NS English some intensifiers collocate with verbs that belong to different semantic sets compared with those in CL English.

However, some of the collocational verbs of other intensifiers belong to the same semantic set in both CL and NS English. As Quirk et al. (1985) suggested, amplifiers usually co-occur with verbs conveying a favorable or unfavorable stance. The intensifier *really* seems to collocate with such verbs as *like*, *love* and *enjoy* in both NS and CL Englishes, showing a favorable stance. Also, *really* is used to collocate mainly with such verbs as *want* and *need*, expressing a desire, in both. In contrast, Greenbaum (1970) suggested that *really* is more likely to collocate with action verbs, but that is not in line with our finding. Although *greatly* seems to collocate with a broader range of semantic sets in CL English, it is mostly used to collocate with the verbs *increase* and *improve* in both CL and NS Englishes, sharing a semantic preference, ‘a rise in the size, amount, or degree of something’.

To provide a more detailed analysis, tables 4 and 5 show that *strongly* collocates with some verbs that are semantically homogeneous in both NS and CL English. More specifically, *recommend* and *suggest* share the common semantic feature of ‘putting forward for consideration’. Moreover, *just* and *fully* are also used to collocate with some verbs in the same semantic group in both NS and CL Englishes.

5.4 Most frequent intensifier-verb collocations in NS English

We will now look more closely at the NS corpora, investigating each of them in turn. Tables 6 and 7 show the most frequent intensifier collocations in the American and British English data, respectively. They suggest that native English speaking students tend to use *-ly* adverbs. Simple adverbs, such as *well*, do not tend to occur in their academic English. What

is more, some of the most frequently used patterns in our CL data cannot be found in our NS data. For example, *just* is nowhere to be found in NS English, although other speech-like adverbs, especially *only* and *really*, are used frequently there. Besides, *greatly-verb*, *hardly-verb*, and *deeply-verb* collocations cannot be considered frequent in NS English. Furthermore, it is interesting to notice that downtoner-verb collocations occur more often in NS than in CL English and that native speakers use different intensifiers than these used by Chinese learners. They often use *only*, *simply*, *merely* and *rarely* in their collocations, while Chinese learners prefer *only*, *just*, and *hardly*.

Table 6: The most frequent intensifier-verb collocations in the MICUSP.

Intensifier	Absolute frequency	Frequently collocates with (lemma)
1. Only	78	become, increase, show, strengthen
2. clearly	43	define, show, involve
3. simply	36	ignore, reflect, leave
4. fully	35	explain, understand, realize, accept
5. easily	29	understand, derive
6. merely	26	want, need, accept
7. largely	25	define, affect, ignore, influence
8. truly	25	believe, understand
9. closely	22	link, relate, associate
10. completely	21	lack, avoid, change, lost
11. really	21	want, know, believe
12. strongly	18	suggest, support, relate, link

Table 7: The most frequent intensifier-verb collocations in the BAWE.

Intensifier	Absolute frequency	Frequently collocates with (lemma)
1. clearly	20	illustrate, reveal, show
2. largely	19	associate, influence
3. only	18	achieve, become

4. simply	15	become, increase
5. closely	15	link, connect, associate
6. merely	12	influence, reduce
7. fully	11	understand, resolve
8. rarely	10	document, see, appear
9. completely	8	change, avoid, remove
10. heavily	8	influence
11. strongly	8	connect, link, associate
12. truly	7	understand

In relation to semantic preferences, in CL English, some intensifiers such as *clearly*, *really*, *only* and *just*, seem to prefer certain kinds of verb collocates. At the same time, in CL English, most intensifiers can collocate with a broad range of verbs. For instance, *really* can collocate with the verbs *love* and *like* which express a favorable attitude, and the verbs *need*, *want* and *hope* which express a desire. It is very difficult to judge definitely which particular types of verbs the intensifier *really* typically collocates with. In NS English, on the other hand, some of the intensifiers seem to occur together with a very restricted set of verb collocates. As can be seen in tables 6 and 7, *closely* only collocates with the verbs *link*, *relate*, *associate*, and *connect*, which are united by the semantic feature of ‘bringing something together’. Moreover, in both NS corpora, *truly* predominantly collocates with the verbs *understand* and *believe* which can be considered mental verbs.

As Greenbaum (1974) mentioned, there are also differences between American and British English. For example, in the BAWE, *clearly* is only used to collocate with the verbs *reveal*, *show* and *illustrate* sharing the semantic meaning ‘allowing something to be perceived’, but this does not apply to the MICUSP. Even though the *heavily-verb* collocation occurs with a low frequency in the BAWE, it typically collocates with the verb *influence* when the writers discuss a negative impact. The same does not apply to the MICUSP.

5.5. MI scores

Before moving on to the discussion, we will take a brief look at the strongest collocations in the data, as suggested by MI scores. Table 8 shows the ten strongest collocations in each of the corpora. Only one of these collocations occurs both in the Chinese data and in a native speaker corpus, the BAWE: *fully understand*. It could also be pointed out that four of the seven intensifiers which occur in the Chinese learners' top ten list do not occur in the other two lists at all. These four are *greatly*, *hardly*, *deeply* and *well*. As to the native corpora, four of the ten most frequent collocations in them are the same: *closely associate*, *closely link*, *completely avoid* and *strongly link*. Interestingly, these collocations favor the verbs *closely* and *link*, which occur together in *closely link*. This suggests some kind of semantic preference for expressions suggesting mental vicinity of concepts.

Table 8: The strongest collocations in the data.

Rank	The TECCL corpus Collocation MI score	The MICUSP corpus Collocation MI score	The BAWE corpus Collocation MI score
1.	strongly recommend 13.36	closely associate 13.00	closely link 10.23
2.	greatly attract 10.27	closely link 11.88	closely connect 8.62
3.	hardly enjoy 9.99	easily derive 10.17	rarely document 8.58
4.	deeply move 9.89	completely avoid 9.72	completely avoid 8.52
5.	strongly influence 9.79	strongly support 9.67	strongly link 8.08
6.	strongly disagree 9.39	largely ignore 9.36	largely influence 7.86
7.	well preserve 8.68	merely accept 9.16	fully understand 7.84
8.	hardly admire 8.60	strongly link 9.02	strongly associate 7.50
9.	easily prove 8.48	clearly define 8.55	rarely see 7.29
10.	fully understand 7.64	completely lack 8.52	closely associate 7.11

6. Discussion

In this section, we will discuss probable reasons why Chinese learners of English use intensifier-verb collocations differently from native English speaking students and the limitations of the current study. Many researchers have demonstrated that variation in the use of collocation results from L1 transfer (e.g. Duan & Qin, 2012; Xia, 2013; Laufer &

Waldman, 2011; Lu, 2017). Our study suggests that L1 transfer does play a dominant role in the use of collocations in CL English. As mentioned before, Chinese does not have as many intensifiers as English does, and only a small number of English intensifiers have direct equivalents in Chinese. Looking at the most frequently used patterns in CL English, we can see that *really*, *only* and *just* are used very frequently, which implies that Chinese learners of English are making use of their L1 knowledge.

Some researchers have also argued that L2 learners favor speech-like adverbs, such as *just*, *really*, *only* and *still* (Granger & Rayson, 2013, p. 128). This is apparent in our Chinese data; however, we would like to point out that native English speaking students also use some speech-like adverbs. Consequently, our main finding is that Chinese learners of English overuse the intensifiers that have equivalents in Chinese. In agreement with Lu's (2017) findings, the current study also found that there is less variety in collocations in CL than NS English. However, in our study, *totally agree* is not the most frequently used pattern in CL English.

It is also interesting to note that Chinese learners rarely use downtoner-verb collocations, although Chinese has intensifiers referring to minimum coverage or small quantity. There are only three downtoners, *zhi* 'only', *jinjin* 'just', and *zhishao* 'at least', in Chinese, but each of them can have many different meanings. For example, *jinjin* may mean 'merely', 'barely', 'simply', 'only', and 'just'. Duan and Qin (2012) suggested that in this respect, Chinese is more economical, because the same word is used to express many different meanings. It may be that Chinese learners of English rarely use other downtoners except *only* and *just*, because of the first language habits in their minds.

Furthermore, as regards to verb collocates, many intensifiers can collocate with a wide range of verbs in CL English. Native English speaking students, on the other hand, seem to combine some intensifiers with only a restricted set of verbs. As Thornbury (2002) explained, native speakers make use of implicit knowledge when they combine words. They cannot usually explain such knowledge; it is something they know without being

aware of it. Sinclair (1991) postulated that native English speaking students have a large number of semi-preconstructed phrases that constitute single choices, while CL learners lack these phrases, and therefore their word combinations result from a series of complex choices. They may also be called word for word combinations. It is thus reasonable that Chinese learners of English produce intensifier-verb collocations differently from native English speaking students. When combining intensifiers and verbs, Chinese learners of English tend to choose intensifiers and verbs from a large number of words and combine them without any specific rules. Some intensifiers nevertheless seem to have semantic preferences as regards their verb collocates even in CL English.

In terms of our finding, Greenbaum's research (1970) on intensifier-verb collocations in NS English is not corroborated by our native English data. Surprisingly, some of his findings rather agree with our CL data. This can be better understood if we consider that Greenbaum's research was published almost fifty years ago. Native English speaking students may not use collocations in the same way now, whereas it is probable that English-teaching textbooks in China are old-fashioned. As Henrichsen (2007) reported, around the millennium, more and more English textbooks were published in China, but they were often characterized by outdated English, antiquated teaching procedures, and primitive, error-riddled typesetting. Even if the situation has greatly improved since then and there are many good books in the market, produced jointly by people from China and abroad, it is unlikely that such books are used in all the schools.

More research could be conducted on, for example, which intensifier-verb collocations are especially strong in other varieties of English and why. Our data suggest that the types of word pairs which collocate the most in terms of MI scores are different in CL than NS English. However, there are also differences between American and British English.

7. Conclusion

To summarize, the current study has examined the differences in the use of intensifier-verb collocations by Chinese learners of English and native English speaking students, paying

particular attention to verb collocates. Let us return to the three research questions posed at the outset and consider some possible answers.

The first question was: what are the overall frequencies of occurrences in CL academic English and NS academic English? We found that there are significant differences between the frequencies of occurrences of intensifier-verb collocations in CL English and NS English. Chinese learners produce more intensifier-verb collocations than native English students. However, in terms of types of intensifier-verb collocations, CL English writers seem to use a smaller variety of intensifier-verb collocations in their writing compared with NS writers. Moreover, Chinese learners do not prefer exactly the same collocations as native speakers.

The second question was: what are the most frequent intensifier-verb collocations in academic writing by Chinese learners of English and native English-speaker students? Chinese learners of English use the intensifier-verb collocation, such as *just-verb*, *only-verb* and *really-verb* very frequently, while native English students prefer *only-verb*, *clearly-verb*, *largely-verb*, *simply-verb*. Downtoner-verb collocations occur more often in NS than in CL English.

The third question was: what are the differences in the use of such collocations between Chinese learners of English and native English-speaker students, especially as regards the verb collocates? As regards verb collocates, the intensifiers *hardly*, *clearly*, *well*, *strongly* and *deeply* collocate with semantically different verbs in NS and CL English. Compared with the patterns in CL English, the intensifiers in NS English collocate with a more stable and restricted set of verb collocates. To some extent, the variation in CL English can be explained in terms of L1 transfer.

Lastly, some limitations of this study need to be pointed out. Firstly, the most frequent intensifier-verb collocations in our data are not extremely frequent. Secondly, it would also be good to study the frequencies of verb collocates more, to fully understand how intensifiers collocate with particular verbs. Note, however, that the verb collocates listed in the tables above are actually the most frequent verb collocates in our data.

As regards to the materials, the sample from the BAWE is quite small. Moreover, how the collocations were acquired by the Chinese students could be investigated further. There is a possibility that the particular topics which students were given included collocations which the students copied. Even more generally, the students' educational background must have influenced the results, and this could be studied in more detail.

Furthermore, while the corpus linguistic method is reliable, we also have to consider its limitations. In the future, we should investigate these kinds of linguistic phenomena by using multiple methods. For example, the differences between Greenbaum's (1970) and our findings may partly result in the choice of research method. He used an experimental method.

References

- Ädel, A. & Garretson, G. (2006). Citation practices across the disciplines: The case of proficient student writing. In M. C. Pérez-Llantada Auría, R. Pló Alastrué & C-P. Neumann (Eds.), *Academic and Professional Communication in the 21st Century: Genres, Rhetoric and the Construction of Disciplinary Knowledge. Proceedings of the 5th International AELFE Conference*. Zaragoza: Prensas Universitarias de Zaragoza, 271–280.
- Bahns, J. & Eldaw, M. (1993). Should we teach EFL students collocations? *System*, 21(1), 101–114.
- Baker, M. (1992). *In Other Words*. London: Routledge.
- Benson, M. (1985). Collocations and idioms. In R. Ilson (Ed.), *Dictionaries, lexicography and language learning*. Oxford: Pergamon Press, 61–69.
- Begagić, M. (2013). Semantic preference and semantic prosody of the collocation *make sense*. *Linguistics*, 14, 403–416.
- Biq, Y-O. (2014). Adverbs. In W. S-Y. Wang & C. Sun (Eds.), *The Oxford handbook of Chinese linguistics*. Oxford: Oxford University Press, 414–428.
- Chen, C-Z. (1982) *A Draft of Chinese Grammar*. Beijing: The Commercial Press.

- Cheng, W. (2006). Describing the extended meanings of lexical cohesion in a corpus of SARS spoken discourse. *International Journal of Corpus Linguistics*, 11(3), 325–344.
- Duan, M-F. and Qin, X-H. (2012). Collocation in English teaching and learning. *Theory and Practice in Language studies*, 2(9), 1890–1894.
- Ellis, R. (2000). *Second Language Acquisition*. Oxford: Oxford University Press.
- Feng, Q-X. (2012). *Syntactic-semantic Analysis of Modern Chinese with Left-Associative Grammar*. Doctoral dissertation. Erlangen: The Friedrich-Alexander-University of Erlangen-Nuremberg: Faculty of Social Sciences and Theology. Retrieved from <<https://opus4.kobv.de/opus4-fau/files/2103/QiuxiangFengDissertation.pdf>>
- Firth, J. R. (1957). *Papers in Linguistics 1934–1951*. London: Oxford University Press.
- Firth, J. R. (1968). A synopsis of linguistic theory 1930–1955. In F. R. Palmer (Ed.), *Selected papers of J. R. Firth 1952–59*. Bloomington: Indiana University Press, 1–32.
- Granger, S. & Rayson, P. (2013). Automatic profiling of learner texts. In S. Granger (Ed.), *Learner English on Computer*. London: Routledge, 119–131.
- Greenbaum, S. (1970). *Verb-Intensifier collocations in English: An experimental approach*. The Hague and Paris: Mouton.
- Greenbaum, S. (1974). Some verb-intensifier collocations in American English and British English. *American Speech*, 49(1/2), 79–89.
- Halliday, M. A. K. & Hasan, R. (1976). *Cohesion in English*. London: Longman.
- Henrichsen, L. (2007). English Language Teaching in China: An Update on the State of the Art. *TESL Reporter*, 4(2), 1–13.
- Heuboeck, A., Holmes, J. & Nesi, H. (2010). *The BAWE Corpus Manual*. Retrieved from <<http://www.coventry.ac.uk/research/research-directories/current-projects/2015/british-academic-written-english-corpus-bawe/>>
- Huang, B-R. and Liao, D-X. (1991). *Modern Chinese*. Beijing: Higher Education Press.
- Hunston, S. (2002). *Corpora in applied linguistics*. Cambridge: Cambridge University Press.
- Huo, Y-J. (2014). Analyzing collocation errors in EFL Chinese learners' writings based on corpus. *Higher Education of Social Science*, 7(1), 87–91.

- Laufer, B. & Waldman, T. (2011). Verb-noun collocations in second language writing: A corpus analysis of learners' English. *Language Learning*, 61(2), 647–672.
- Leedham, M. (2015). *Chinese Students' Writing in English: Implications from a Corpus-driven Study*. London: Routledge.
- Lu, Y-W. (2017). *A corpus study of collocation in Chinese learner English*. London & New York: Routledge/Shanghai: Shanghai Jiao Tong University Press. Retrieved from <<http://www.doc88.com/p-9943598044558.html>>
- McEnery, T., Xiao, R. & Tono, Y. (2006). *Corpus-based language studies: An advanced resource book*. London and New York: Routledge.
- Nimb, S. (1996). Collocations of nouns: How to present verb-noun collocations in a monolingual dictionary. In M. Gellerstam et al. (Eds.), *Euralex '96 proceedings I-II: papers submitted to the Seventh Euralex International Congress on Lexicography in Göteborg, Sweden*. Gothenburg: University of Gothenburg, Department of Swedish, 265–271.
- Quirk, R. & Greenbaum, S. (1973). *A University Grammar of English*. London: Longman.
- Quirk, R., Greenbaum, S., Leech, G. & Svartvik, J. (1985). *A Comprehensive grammar of the English language*. London: Longman.
- Sinclair, J. (1991). *Corpus, concordance, collocation*. Oxford: Oxford University Press.
- Stubbs, M. (2001). *Words and Phrases: Corpus Studies of Lexical Semantics*. Oxford: Blackwell.
- Stubbs, M. (2002). Two quantitative methods of studying phraseology in English. *International Journal of Corpus Linguistics*, 7(2), 215–244.
- Thornbury, S. (2002). *How to teach vocabulary*. London: Longman/Pearson Education.
- Wang, Y. (2013). *Delexical Verb + Noun Collocations in Swedish and Chinese learner English*. Doctoral dissertation. Uppsala: Uppsala University, Department of English.
- Wang, Y. & Shaw, P. (2008). Transfer and universality: Collocation use in advanced Chinese and Swedish learner English. *ICAME Journal*, 32, 201–232.
- Xiao, R. (2016). Collocation. In D. Biber & R. Reppen (Eds.), *The Cambridge handbook of English corpus linguistics*. Cambridge: Cambridge University Press, 106–124.

- Xia, L-X. (2013). A corpus-driven investigation of Chinese English learners' performance of verb-noun collocation: A case study of ability. *English Language Teaching*, 6(8), 119–124.
- Xia, L-X. (2015). Corpora and collocations in Chinese English dictionaries for Chinese users. *English Language Teaching*, 8(10), 162–167.
- Xu, J-J. (2015). *Ten Thousand English Compositions of Chinese Learners (the TECCL Corpus), Version 1.1*. (Key information of the TECCL Corpus.) Retrieved from <<http://www.bfsu-corpus.org/content/teccl-corpus>> Internet address in May 2019: <<http://corpus.bfsu.edu.cn/content/teccl-corpus>>