

# Is it 'Increase' or 'Rise?' A Corpus-based Behavioural Profile Study of English Near-Synonym Verbs<sup>1</sup>

*Sani Yantandu Uba<sup>2</sup> & Julius Irudayasamy<sup>3</sup>, Dhofar University, Salalah, Oman*

## Abstract

This study emerged as a result of insufficient knowledge and descriptions of the behavioural profiles of the near-synonym English verbs, *increase* and *rise*, by non-corpus-based traditional reference sources used by students. We explored the behavioural characteristics of this group of near-synonym verbs using the British National Corpus (BNC) of 100 million words as our corpus. Using the *Sketch Engine* Tool, we examined their frequency, subject and object noun collocations, adverb collocations, and syntactic behavioural profiles. The results demonstrate that both words collocate with subject and object nouns. However, on their top ten subject collocation lists, *increase* only collocates with abstract nouns related to finance and economy, whereas *rise* collocates with three different kinds of abstract nouns related to finance/economy, the human entity, and the natural environment, and one concrete noun related to natural environment. In addition, they only have two collocates in common on their top subject noun collocates list. In terms of object noun collocations, *increase* only collocates with abstract nouns connected to finance/economy and the natural environment, but *rise* collocates with abstract and concrete nouns on their top list. They also only have three adverb collocations in common on the top list. *Rise* has 17 distinct syntactic patterns, whereas *increase* has 15 different syntactic patterns. In teaching near-synonyms, we propose using corpus-based reference resources.

## Resumen

Este estudio surge como resultado de la falta de conocimiento y descripciones de perfiles de comportamiento de los verbos sinónimos cercanos *increase* y *rise*, en recursos de referencia no basados en un corpus utilizado por estudiantes. Exploramos las características de comportamiento de estos verbos sinónimos cercanos utilizando el *British National Corpus (BNC)* de 100 millones de palabras como corpus. Examinamos su frecuencia, colocaciones sustantivas de sujeto y objeto, colocaciones adverbiales, y perfil de comportamiento sintáctico utilizando la herramienta *Sketch Engine*. El resultado demuestra que ambas palabras se colocan con tres tipos de sustantivos de sujeto y objeto. Sin embargo, en la lista de las 10 colocaciones más frecuentes de materias principales, *increase* solamente se coloca con sinónimos abstractos relacionados con finanzas y economía, mientras que *rise* se coloca con tres tipos de sustantivos abstractos relacionados con finanzas y economía, entidades humanas, y ambientes naturales, y un sustantivo concreto relacionado con ambientes naturales. Sólo tienen dos colocaciones en común en su lista de las 10 colocaciones sujeto-sustantivo. En términos de colocaciones sustantivo objeto, *increase* solamente se coloca con sustantivos abstractos conectados con finanzas y economía y ambientes naturales, pero *rise* se coloca con ambos sustantivos abstractos y concretos en su lista de las 10 colocaciones más frecuentes. De igual manera, solamente tienen tres colocaciones de adverbios en la lista de las 10 colocaciones más frecuentes. *Rise* tiene 17 patrones sintácticos distintos, mientras que *increase* tiene 15 patrones sintácticos diferentes. Al enseñar sinónimos cercanos, proponemos usar recursos basados en el corpus.

## Context of the Study

This study emerged while I was teaching Omani university undergraduate students a course called *Meaning in Language*. It was a three-credit hour course, one of the major required modules for a BA English language programme and the discourse analysis course. The students enrolled in the course were on their second to final year. When discussing synonyms with the students, we asked them to provide examples. The students responded with several instances. For example, one of the students used the words *rise* and *increase*, claiming that they are interchangeable in all instances, despite having increased their understanding of the concepts of pragmatic value and contextual normality in determining whether two or more words are synonymous in all contexts (Kreidler, 2014). As homework, we instructed the students to look up the definitions of those two terms in the dictionary, including their collocates in relation to noun, adverb, and syntactic behaviour.

The students consulted various dictionaries, including a dictionary of collocations. The four dictionaries used were the *Oxford Collocations Dictionary* (McIntosh et al., 2009), *Collins COBUILD Advanced Dictionary* (Harper Collins, 2009), *Cambridge Advanced Learner's Dictionary* (McIntosh, 2013), and the *Longman Dictionary of American English* (2014). Students realized that both terms (*rise* and *increase*) have more meanings; nevertheless, *rise* has more distinct meanings than *increase*. They also realized more their adverb collocates. For example, *rise* has 20 adverb collocates, whereas *increase* has 18 adverb collocates. In

<sup>1</sup> Received: 22 January, 2022. Accepted: 1 March, 2022. Published: 25 January, 2023.

<sup>2</sup> [suba@du.edu.om](mailto:suba@du.edu.om), 0000-0003-0989-4947, Correspondent.

<sup>3</sup> [Julius\\_irudayasamy@du.edu.om](mailto:Julius_irudayasamy@du.edu.om), 0000-0002-0043-172X

addition, they discovered eight noun collocates of *increase*, such as *crime, demand, population, price, salary, size, expenditure, temperature, and value*.

On the other hand, the students found no information on noun collocates of *rise* in these dictionaries. This demonstrates the need for more non-corpus-based traditional reference materials' treatment and explanation of these near-synonym verbs. Therefore, to provide additional treatment and description of the near-synonyms *increase* and *rise*, we decided to develop a corpus-based behavioural profile of these near-synonyms.

### Synonyms

Many scholars have defined the concept of synonyms. *The Oxford Advanced Learner's Dictionary* (Hornby & Cowie, 2015) describes a synonym as "a word or expression that has the same or nearly the same meaning as another in the same language" (p. 1589). This implies that words could be synonymous if they share the same meaning. However, this definition has limitations because words could have the same meaning but may not be interchangeable in all contexts. Liu (2010) thinks that synonyms or *near-synonyms* are complex terms that express similar linguistic concepts from different perspectives and contexts. According to Lyons (1977), a synonym is a remarkably complex linguistic term since two lexical terms might have the same meaning but not the same referent. Partington (1998) defines synonyms as words that may share the same meaning, but exhibit varied collocational and semantic prosody behaviour.

A synonym has been divided into two main types: *strict/absolute* and *loose/near-synonyms*. *Strict* or *absolute* synonyms are words that can substitute each other in all contexts, and the substitution will not produce any changes either in style, meaning, and connotation (Murphy, 2010 & Kearns, 2006). For example, *everybody* and *everyone* can be used interchangeably in any situation and have the same meaning (Kearns, 2006). On the other hand, *loose-* or *near-synonyms*, on the other hand, are not interchangeable in all contexts because they do not share absolute meanings, including collocational- and semantic-prosodic behaviour (Jackson & Amvela, 2000). For example, *tall* and *high* have the same basic sense of a specified height but cannot be interchangeable in all contexts. For example:

1. This is a *tall* man
2. This is a *high* man\*

We cannot substitute *tall* with *high* in example one because *tall* mostly collocates with humans, animals, trees, and buildings. In contrast, *high* is usually used for physical bodies, including constructions and buildings, and non-spatial domains, such as temperature and pitch (Taylor, 2003).

### Previous studies: Corpus-based near-synonyms

Firth (1957) pioneered a corpus-based approach to lexical item distributional patterns. Later, during the 1950s and 1960s, lexis was established as a linguistic level and collocational patterns of lexical elements began to be studied. For example, the context of a word determines its meaning, and students can learn about it by looking at the surrounding words (Firth, 1957). This suggests that they can deduce a word's meaning from its collocational patterns.

Hunston (2002) and Liu (2010) argued that a corpus-based language description is much more informative than the non-corpus-based traditional approach to describing language and other studies have supported this argument. Several of these corpus-based studies have been carried out focusing on different aspects of language, such as semantic sequences, linking adverbials, pattern grammar, verbs, and phrasal verbs (AlAmro, 2019; Carter & McCarthy, 2006; Gardner & Davies, 2007; Gu, 2017; Hunston, 2008; Jarunwaraphan, & Mallikamas, 2020; Liu, 2003, 2008; Moon, 1998).

In addition, many studies have justified the effectiveness of a corpus-based behavioral profile study of near-synonyms (Gries, & Otani, 2010; Liu, 2010; Rajeg, 2019; Taylor, 2003; Uba, 2015; Walker, 2011). For example, Hanks (1996) defines a behavioural profile (BP) as the description of distributional patterns of any lexical items. According to Liu (2010), this type of corpus-based analysis is based on the theory that any meaning of a lexical word corresponds with its distributional patterns or behavioural profile.

Many scholars have conducted a corpus-based study of near-synonym verbs. Hank (1996), for example, investigated near-synonym verbs, such as *abandon, incite, bother, and urge*. The author determined the amount of their semantic similarity using a corpus-based behavioural profile approach. Using this same approach, Walker (2011) also examined another set of near-synonym verbs (*head, run, and manage*). The

British National Corpus (BNC) and the Bank of English (BoE) corpora were utilized in the study. The findings indicated that *run* is more frequently used with nouns of non-human entities, for example, *firm*, *company*, and *business*. On the other hand, *head* is more frequently used with nouns, associated with a human entity, for example, structures involving people, such as *panels*, *committees*, or *departments*. However, *manage* is associated with the nouns of both human and non-human entities.

Ruenroeng (2014) used a corpus-based approach in investigating the near-synonym verbs *ruin*, *demolish*, and *destroy*, using a Corpus of Contemporary American English (COCA). The study's findings show that the three sets of near-synonyms have different absolute meaning and that their grammatical patterns are also different. The study also indicated that all three words usually collocate with the noun object. Yang (2016) examined a set of synonymous verbs (*learn* and *acquire*) using the BNC. The researcher used the *Sketch Engine* (SkE) tool to analyse the results of collocation, concordance, word sketch difference, and word sketch of the two verbs. The findings revealed that *learn* has a frequency of 18,871 and that *acquire* has a frequency of 6,712, respectively. In terms of syntactic pattern, it showed that *learn* has 18 different patterns, whereas *acquire* has 14 different patterns.

Gu (2017) focused on a corpus-based study of the near-synonymous verbs *obtain* and *gain*. The researcher used different online tools and databases, such as *SkE*, *BNC*, *Web*, and *Just the Web*, to examine the word sets. The findings showed that *gain* is usually associated with abstract nouns, and positive prosody is associated with nouns. On the other hand, *obtain* is usually used in conjunction with a noun and the passive voice pattern. In another study, Song (2021) investigated a set of near-synonym verbs (*damage* and *destroy*) in the BNC, also using SkE as the analytical tool. The study's findings indicated that the terms are not interchangeable in some instances. It also showed that *damage* has more collocations with physical health and the human body, whereas *destroy* has more collocations with military concerns. Furthermore, the fundamental notion of *damage* relates to anything that may be regained or recovered. On the other hand, the primary definition of *destroy* is to deal with something that does not exist.

In the context of this study, we suggested that the students' non-corpus-based traditional reference sources needed to provide adequate information about the behavioural profiles of the near-synonymous verbs *increase* and *rise*. However, the above literature review also demonstrates that the non-corpus-based traditional reference materials provide inadequate treatments of near-synonyms and how a corpus-based study effectively provides a detailed behavioural profile of near-synonyms, including concordance, word sketch, collocations, syntactic patterns, and word sketch difference. Furthermore, previous studies have recommended more corpus-based studies of near-synonyms (Cai, 2012; Uba, 2015). Thus, this study seeks to answer the following research questions:

1. *What are the most noun and adverb collocations of this set of near-synonyms?*
2. *What are the syntactic behavioural patterns of this set of near-synonyms?*

## **Method**

### **Data collection**

This study's corpus data used the British National Corpus (BNC). The BNC is a 100 million-word universal, monolingual, sample-based, and synchronic corpus. The corpus is comprised of examples of written and spoken British English texts from various disciplines across various regions from 1960 to 1990. The written part represents 90 percent of the corpus, comprising extracts from national and regional newspapers, published and unpublished memoranda, letters, journals of all ages and interests, academic books, popular fiction, and university and school essays. The spoken part represents ten percent of the corpus, consisting of transcriptions of unscripted informal conversations across many contexts, formal government meetings, and businesses (Aston et al., 1998).

### **The corpus tool and procedure for corpus analysis**

We utilized *Sketch Engine* (SkE) in this investigation. It is a language analysis tool for lexicon, language instruction, and translation. It has several applications such as word sketch, word sketch difference, concordance, wordlist, keywords, thesaurus, and N-grams. SkE, which includes the BNC in its database, allows language researchers to explore and use the BNC's applications. In this study, we have employed collocation, word sketch, concordance, and word sketch difference applications in BNC (Song, 2021; Yang, 2016). In the analysis, we first queried both *increase* and *rise* in the BNC by using the concordance

application to generate the overall frequency of each word under investigation. Then, the concordance application allows the user to select the word class of that queried item. In our case, we chose the verb since those two words could be nouns or verbs. We also used node 5 (-5, 5) (the number of words on the left and right of the queried word). Some scholars have selected the sub-corpus of the BNC in their research. However, in this study, we have opted for the whole BNC as our database because exploring the larger corpus will undoubtedly provide much more information on the behavioural profile of the words.

The next stage identifies the collocations of the two words. The SkE collocation tool was used to investigate the most collocate items of each word. We only looked at noun subject and object collocations, as well as adverbs, in this section. One key point to note is that we only picked the top collocates of the items' nouns and adverbs. In addition, we picked logDice above other metrics, such as T-Score, log probability, and M1. Our rationale for choosing logDice is that some academics feel it is more dependable than other statistical measurements (Yang, 2016). Our final stage was to study the syntactic behaviour of the two words, and we utilized the SkE word sketch difference to determine their syntactic structures. The word sketch difference application allows users to identify different syntactic patterns of the words under investigation. For example, it provides information on both subject and object collocates with several examples in context, including frequency and score. This application enables the user or researcher to compare and contrast the differences of the items under investigation.

### Results and Discussion

As previously stated, this study addresses two research questions, and we have already described our corpus tool and analytic methodologies.

	Increase	Rise
Total	28,435	17,008
Per million	284	170

Table 1. Frequency of increase and rise in the BNC

As seen in Table 1, the effect of step one is the frequency of both *increase* and *rise* in the BNC. This frequency showed that *increase* has a total frequency of 28,435 times with an average of 284 times per million words, whereas *rise* has a total occurrence of 17,008 times with an average of 170 times per million words. This indicates that *increase* has more frequencies in the BNC than *rise*. This information may not be found in the non-corpus-based traditional reference materials. This supports the claim that a corpus-based study provides much more information on near-synonyms than the non-corpus-based traditional reference materials (Hunston, 2002; Liu, 2010). However, having a high-frequency only sometimes implies that the higher frequency word has more distinct grammatical patterns than the low-frequency word, as will be observed later.

Rank	Collocates	<i>Increase</i>		Collocates	<i>Rise</i>	
		Frequency	LogDice		Frequency	LogDice
1	Number	69	7.9	Share	303	9.9
2	Population	56	7.9	Price	303	9.6
3	Rate	53	7.5	Unemployment	126	8.8
5	Cost	35	7.2	Voice	150	8.5
6	Sale	33	7.2	Rate	139	8.5
7	Turnover	24	7.2	Sun	94	8.1
8	Activity	22	6.6	Income	79	8.1
9	Factor	24	6.5	Temperature	76	8.1
10	Service	46	6	Level	69	7.7

Table 2. Comparison of top ten subject noun collocations of increase and rise in the BNC

Table 2 above shows the results of the comparison of the top subject noun collocations between the two words. As mentioned above, we chose LogDice instead of other statistical measures. Here, we ranked the collocate words based on LogDice rather than the frequency. LogDice shows how strong or weak the collocation is. If the logDice is higher, the collocation is strong, and if the logDice is lower, the collocation is weak. From the above table, we can see the top subject nouns collocate of increase is:

- a. abstract noun relates to finance/economy, such as number, rate, cost, sale.

However, the top noun collocations of *rise* can be divided into four groups:

- a. abstract noun relates to finance/economy, share, profit, income
- b. abstract noun relates to human entity voice
- c. abstract noun relates to the natural environment
- d. abstract noun relates to the natural environment

The results indicate that increase only has abstract noun collocations relating to finance/economy. However, rise has two classifications of nouns: abstract and concrete. As seen above, the abstract noun is divided into three groups: finance/economy, such as number, cost, rate. The second category is the human entity voice. The third category is the natural environment, temperature. The second classification of rise is the concrete noun, natural environment, sun. This demonstrates that both words collocate different types of subject nouns. However, the two words overlap on two specific words in the table – rate and price. Some examples in the BNC of the collocations are as set out below:

The **number** has **increased** gradually...  
 ... because land **prices** have **increased**...  
 Mrs. Cole's **voice rose**...  
 ... the **sun rose** higher...  
 ... the **temperature** was **rising** ...  
 Earning per **share rose** ...

Overall, this result demonstrates that the two terms overlap on only two of the top ten subject noun collocations and have eight different collocate words; thus, they are loose synonyms. This finding corroborates previous studies that near-synonyms are not interchangeable in many contexts (Song, 2021; Yang, 2016). Furthermore, it justifies the effectiveness of a corpus-based study of near-synonyms in providing much more detailed information than non-corpus-based traditional reference materials (Cai, 2012; Uba, 2015). This is because, as stated in the context of this study, only eight noun collocates of *increase* were found in the non-corpus-based traditional reference texts surveyed. On the other hand, this study discovered the top ten subject noun collocates of both *increase* and *rise*. Traditional non-corpus reference materials, on the other hand, did not give noun collocation of *rise*, as described in the context of this study.

Rank	Collocates	Increase		Collocates	Rise	
		Frequency	LogDice		Frequency	LogDice
1	Number	1,165	9.9	Unemployment	114	10
2	Risk	398	9	Tide	100	10
3	Demand	368	8.9	Sun	64	9
4	Pressure	367	8	Price	121	8.7
5	Rate	335	8.6	Star	59	8.7
6	Share	261	8.4	Cost	114	8.4
7	Use	279	8.3	Inflation	32	8.1
8	Amount	256	8.3	Level	87	8
9	Level	268	8.2	Rate	83	8
10	Cost	261	8.2	Crime	38	8

Table 3. Comparison of the top object noun collocations of increase and rise in the BNC

The top object noun collocations of the two words are shown in Table 3 above. *Increase* has only the abstract noun collocation and is divided into two categories, as shown in the table:

- a. abstract noun relates to finance/economy
- b. abstract noun relates to the natural environment.

*Rise*, on the other hand, has both abstract and concrete nouns, categorized into three groups:

- a. abstract noun relates to finance/economy
- b. abstract noun relates to security
- c. concrete noun relates to the natural environment

As noted above, *increase* has an abstract noun as its top noun object collocations and is categorized into two groups: finance/economy, such as *number*, *demand*, *share*, etc., and natural environment, *pressure*. In contrast, *rise* has both abstract and concrete nouns as its top noun object collocations and is categorized into three groups, as shown above - abstract noun related to finance/economy *unemployment*, *cost*, *inflation*, etc.; abstract noun related to security, *crime*; and concrete noun related to the natural environment (e.g., *sun*, *star*, and *tide*). The results in Table 3 indicate that *increase* and *rise* overlap on only

two words - *cost* and *rate*, and they have eight different collocates. Unlike the non-corpus-based traditional reference materials consulted, this corpus-based behavioural profile study provides the frequency and score of the collocations. In addition, it provides both subject and object collocations. This also emphasizes the need for corpus-based research when investigating near-synonyms.

Rank	Adverbs	Increase		Collocates	Rise	
		Frequency	LogDice		Frequency	LogDice
1	Greatly	269	10.1	Sharply	130	9.8
2	Substantially	164	9.9	Steadily	110	9.7
3	Significantly	216	9.8	Steeply	73	9.6
4	Dramatically	149	9.8	Rapidly	151	9.4
5	Steadily	130	9.6	Dramatically	67	9
6	Rapidly	173	9.4	Slowly	94	8.6
7	Gradually	122	9.1	Again	204	8.1
8	Considerably	106	9	Then	73	5.3
9	Ever	95	6.9	Still	68	5
10	Also	284	6.2	Also	89	4.6

Table 4. Comparison of top collocations of increase and rise in the BNC

The results in Table 4 above show a comparison of the ten adverb collocations between *increase* and *rise*, indicating that both words collocate with the adverb. These words have six different collocations, and four collocations overlap. They have overlapped *steadily*, *rapidly*, *also*, and *dramatically* but with varying degrees of frequency and score. On the other hand, on its top list, *greatly*, *substantially*, *significantly*, *gradually*, *ever*, and *considerably* collocate exclusively with *increase*. For *rise*, *sharply*, *steeply*, *slowly*, *again*, *then*, and *still* were found among the top collocations. The non-corpus-based traditional reference materials above provided more than ten adverb collocations of *increase* and *rise*. However, *also*, *still* and *ever*, which are among the top collocations of *increase* and *rise*, do not appear on the list of non-corpus-based traditional reference materials.

	Category	Example
1	Subject	The <b>number</b> has <b>increased</b> gradually...
2	Object	without unnecessarily <b>increasing</b> our <b>risks</b>
3	Modifier	as will <b>greatly</b> <b>increase</b> their efficiency
4	And/or	Which <b>increase</b> <b>and</b> decreases this...
5	Pronominal object	Until we <b>increase</b> <b>it</b>
6	Pronominal subject	whereas <b>it</b> is <b>increased</b> along ...
7	Wh-words following	His doubts only <b>increased</b> <b>when</b> ...
8	Infinitive object of	gradually <b>increased</b> <b>to</b> <b>include</b> numerous ...
9	-ing object of	the role of <b>increased</b> <b>fasting</b> ...
10	Adjective after and noun	asset's <b>increased</b> value <b>due</b> <b>to</b> <b>inflation</b>
11	Adjective after	expected to <b>increase</b> <b>further</b> in 1992 ...
12	Particles after	the amount <b>increased</b> <b>up</b> to a normal ...
13	In passive	probably <b>increased</b> <b>during</b> this period...
14	Prepositional phrases	The electorate <b>increased</b> <b>in</b> size ...
15	Increase + as	has <b>increased</b> <b>as</b> a proportion

Table 5. Syntactic behaviour of increase in the BNC

	Category	Example
1	Subject	the world <b>shares</b> have risen ...
2	Object	the Atlantic on the rising <b>tide</b>
3	Modifier	unemployment would rise <b>sharply</b>
4	And/or	the temperature rises <b>or</b> falls
5	Pronominal object	Although the sun had risen <b>it</b> ...
6	Pronominal subject	She picked up <b>her</b> rose on
7	Wh-words following	the excitement that rises <b>when</b> we ...
8	Infinitive object of	The president rose to <b>greet</b> him
9	-ing object of	BP rose <b>following</b> yesterday's announcement
10	Adjective after	the sun rose <b>higher</b> ahead above ...
11	Particles after	Tiny bubbles rise <b>up</b> through ...
12	Particles after with object	Grove rising <b>up</b> the <b>mountain</b>
13	In passive	a red ball just <b>risen</b> above
14	Prepositional phrases	The mist was rising <b>from</b> the trees
15	Rise + as	expenditure to rise <b>as</b> a proportion ...
16	Rise + than	benefits also rose faster <b>than</b> inflation
17	Rise + like	attempt to rise <b>like</b> some Phoenix

Table 1. Syntactic behaviour of rise in the BNC

The syntactic behavioural patterns of *increase* and *rise* in the BNC are shown in Tables 5 and 6 above. *Increase* has 15 syntactic patterns, whereas *rise* has 17 syntactic patterns. Further analysis of the two tables demonstrates that *increase* and *rise* share 14 similar syntactic patterns. On the one hand, *increase* has a unique syntactic pattern, as indicated in Table 5, with item 10 on the list: adjective after + noun. This pattern only occurs for *increase*. On the other hand, *rise* has three different syntactic patterns, as seen in Table 6, items 12, 16, and 17 on the list: particles after + noun, rise + than, and rise + like. These patterns only appear for *rise*. This shows that *increase* and *rise* are near-synonyms because they are only interchangeable in some contexts, as argued by Jackson and Amvela (2000). Although they share the same underlying concept of adding more in value or size, they cannot be used interchangeably in some situations. This finding corroborates previous findings, such as that of Ruenroeng (2014), who found that the two verbs are not interchangeable in all contexts.

## Conclusion

This corpus-based analysis of the near-synonym verbs *increase* and *rise* shows that these near-synonym verbs are not substituted in all instances by British-native speakers. In other words, there are distinctions between the near-synonyms in terms of frequency of use, subject and object noun collocations, adverb collocations, and syntactic behavioural patterns. One of the significant findings indicates that *increase* has more occurrences than *rise* in the BNC, but *rise* has more varied syntactic patterns than *increase*. Although both words collocate with subject and object nouns, *increase* collocates with only one abstract subject noun collocation related to finance and economy, whereas *rise* collocates with three different abstract subject noun collocations related to finance/economy, the human entity and the natural environment, and one concrete noun related to the natural environment. They overlap on only two of the top subject noun collocations.

Regarding the object noun collocations, *increase* collocates with two types of abstract nouns relating to finance/economy and the natural environment. In contrast, *rise* collocates with both abstract and concrete nouns. The two types of abstract nouns are finance/economy and security, while the concrete noun is the natural environment. Again, they overlap on only two of the top object noun collocations. In terms of adverb collocations, each word has six different adverb collocations, with four adverb collocations overlapped. This analysis shows that these near-synonyms are only interchangeable in some contexts.

One of the weaknesses of this study is the number of collocations that were considered, as we restricted this to the top ten collocations only. This will likely limit some potential behavioural patterns of this set of near-synonyms. Another limitation is the lack of further information from British native speakers on some of the syntactic patterns that are not found in either of the synonyms.

## Teaching implications

The rationale for this study is the unavailability of non-corpus-based traditional reference materials to provide a detailed behavioural profile of this set of near-synonyms, as previously stated. Because it reveals various behavioural patterns of this set of near-synonyms, this corpus-based analysis appears effective in examining near-synonyms. Teachers can help students become more aware of different collocational patterns of near-synonyms, including syntactic patterns. It shows that words commonly collocate with other words, allowing language users to learn and acquire different contexts of use for particular synonyms.

Secondly, online corpora are freely available. Teachers could raise students' awareness by engaging them in some tasks. For example, they could assign students to generate at least 30 citations using a concordance tool, and then ask them to identify which subject nouns collocate with the word in question. They could also ask the students to examine a set of near-synonyms using the word sketch difference tool. Undoubtedly, the students will begin to observe some of the patterns in the set of near-synonyms. These may include similarities and differences.

## References

- AlAmro, M. (2019). A corpus-based study on English synonyms: Babble, blather, chatter, gibber, jabber, and prattle. *International Journal of Social Sciences & Educational Studies*, 6(1), 122-133. <https://doi.org/10.23918/ijsses.v6i1p122>
- Aston, G., Burnard, L., McEnery, T., Wilson, A. (1998). *The BNC handbook: Exploring the British national corpus with SARA*. Edinburgh University Press
- Blanda, P., Homenick IV, N., & Goldner, G. (2014). *Longman dictionary of American English*. Pearson.

- Cai, J. (2012). Is it "great" enough? A corpus-based study of "great" and its near synonyms. [Unpublished masters thesis], Ball State University. [https://cardinalscholar.bsu.edu/bitstream/handle/123456789/196187/CaiJ\\_2012-3\\_BODY.pdf?sequence=1&isAllowed=y](https://cardinalscholar.bsu.edu/bitstream/handle/123456789/196187/CaiJ_2012-3_BODY.pdf?sequence=1&isAllowed=y)
- Carter, R., & McCarthy, M. (2006). *Cambridge grammar of English: A comprehensive guide*. Cambridge University Press.
- Firth, J. R. (1957). *Papers in linguistics 1934-1951*. Oxford University Press
- Gardner, D., & Davies, M. (2007). Pointing out frequent phrasal verbs: A corpus based analysis. *TESOL Quarterly*, 41(2), 339-359. <https://doi.org/10.1002/j.1545-7249.2007.tb00062.x>
- Gries, S. Th., & Otani, N. (2010). Behavioral profiles: A corpus-based perspective on synonymy and antonymy. *ICAME Journal*, 34, 121-150. [http://icame.uib.no/ij34/gries\\_otani.pdf](http://icame.uib.no/ij34/gries_otani.pdf)
- Gu, B.-J. (2017). Corpus-based study of two synonyms: obtain and gain. *Sino-US English Teaching*, 8, 511-522. <https://doi.org/10.17265/1539-8072/2017.08.006>
- Hanks, P. (1996). Contextual dependency and lexical sets. *International Journal of Corpus Linguistics*, 1(1), 75-98. <http://dx.doi.org/10.1075/ijcl.1.1.06han>
- Harper Collins. (2009). *Collins COBUILD advanced dictionary of English*. Harper Collins,
- Hornby, A. S., & Cowie, A. P. (2015). *Oxford Advanced Learner's Dictionary* (Vol. 1428). Oxford university press
- Hunston, S. (2002). *Corpora in Applied Linguistics*. Cambridge University Press
- Jarunwaraphan, B., & Mallikamas, P. (2020). A corpus-based study of English synonyms: Chance and opportunity. *rEFLections*, 27(2), 218-245. <https://so05.tci-thaijo.org/index.php/reflections/article/view/248710/168938>
- Kearns, K. (2006). Lexical semantics. In B. Aarts & A. McMahon (Eds.), *The handbook of English linguistics* (pp. 692-723). Blackwell Publishing.
- Kreidler, C. (2014). *Introducing English semantics*. Routledge.
- Liu, D. (2003). The most frequently used spoken American English idioms: A corpus analysis and its implications. *TESOL Quarterly*, 37(4), 671-700. <https://doi.org/10.2307/3588217>
- Liu, D. (2008). Linking adverbials: An across-register corpus study and its implications. *International journal of corpus linguistics*, 13(4), 491-518. <https://doi.org/10.1075/ijcl.13.4.05liu>
- Liu, D. (2010). Is it a *chief, main, major, primary, or principal concern?*: A corpus-based behavioral profile study of the near-synonyms. *International Journal of Corpus Linguistics*, 15(1), 56-87. <https://doi.org/10.1075/ijcl.15.1.03liu>
- Lyons, J. (1977). *Semantics* (Vol. 2.). Cambridge University Press.
- McIntosh, C., Francis, B., & Poole, R. (Eds.) (2009). *Oxford collocations dictionary for student of English*. Oxford University Press.
- McIntosh, C. (Ed.) (2013). *Cambridge advanced learner's dictionary: With CD-ROM*. Cambridge University Press.
- Moon, R. (1998). *Fixed expressions and idioms in English: A corpus-based approach*. Clarendon Press.
- Murphy, M. L. (2010). *Lexical meaning*. Cambridge University Press.
- Partington, A. (1998). *Patterns and meanings*. John Benjamin.
- Ruenroeng, C. (2014). *A corpus-based analysis of English synonyms: Ruin, demolish, destroy* [Unpublished masters thesis], Thammasart University. <https://doi.org/10.14457/TU.the.2014.20>
- Song, Q. (2021). Effectiveness of corpus in distinguishing two near-synonymous verbs: Damage and destroy. *English Language Teaching*, 14(7), 8-20. <https://doi.org/10.5539/elt.v14n7p8>
- Taylor, J. R. (2003). Near synonyms as co-extensive categories: 'High' and 'tall' revisited. *Language sciences*, 25(3), 263-284. [https://doi.org/10.1016/S0388-0001\(02\)00018-9](https://doi.org/10.1016/S0388-0001(02)00018-9)
- Uba, S. Y. (2015). A corpus-based behavioural profile study of near-synonym: Important, essential, vital, necessary, and crucial. *International Journal of English Language and Linguistics Research*, 3(5), 9-17. <https://www.eajournals.org/wp-content/uploads/A-Corpus-Based-Behavioural-Profile-Study-of-Near-Synonyms.pdf>
- Walker, C. (2011). How a corpus-based study of the factors which influence collocation can help in the teaching of business English. *English for Specific Purposes*, 30(2), 101- 112. <https://doi.org/10.1016/j.esp.2010.12.003>
- Yang, B. (2016). A corpus-based comparative study of learn and acquire. *English Language Teaching*, 9(1). <https://doi.org/10.5539/elt.v9n1p209>