A Genre and Collocational Analysis of *Consequence, Result,* and *Outcome*

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ABSTRACT

This corpus-based study examines genres and collocation patterns in which the three synonyms 'consequence', 'result', and 'outcome' usually occur. The data on which the study is based is derived from the Corpus of Contemporary American English (COCA). Of all the eight genres currently available in COCA, the three synonyms appear with the highest frequency in academic texts, whereas frequencies are lowest in informal genres, i.e. TV and movie subtitles and fiction. Of pedagogical concern is the fact that the common verb and adjective collocates repeatedly co-occur with the synonymous nouns. Determined by the COCA frequency and the MI value (≥ 3), 'consequence' is often used with verbs and adjectives conveying negative senses, and the typical collocates of 'result' has a clear association with research-oriented contexts. The collocates of 'outcome' have the broadest variety of semantic properties but are not directly related to any specific contexts. It is highly recommended that EFL teachers apply this genre and collocational information to synonym development lessons.

Keywords: synonym; genre; distribution across genres; collocation; adjective and verb collocates

INTRODUCTION

Vocabulary learning is a key to second language (L2) acquisition. Out of all lexical items, synonyms often prove to be challenging for learners' acquisition of L2 vocabulary (Sridhanyarat, 2018). According to Webb and Nation (2017), a synonym refers to "a word or phrase that has the same meaning as another word or phrase" (p. 284). Theoretically speaking, synonymy is a bilateral or symmetrical lexical relation in which two or more linguistic forms share the same meaning (Szudarski, 2018). Semanticists investigate synonymy by looking at a relationship of similarity or sameness of meaning between two or more words (Jackson and Amvela, 2007). A more layperson's definition of synonym is provided in the Cambridge Advanced Learner's Dictionary (2013), in which it is defined as "a word or phrase that has the same or nearly the same meaning as another word or phrase in the same language", with *small* and *little* being examples of synonymous words (p. 1596). As a matter of fact, no near-synonyms are identical in every detail, and replacing one with its synonym can lead to some deviation or ungrammaticality in L2 (Thornbury, 2002).

The synonyms being investigated in this study are the nouns *consequence, result,* and *outcome*. The three words could cause confusion for many EFL students and teachers since they are very close in meaning. Those whose L2 English exposure is limited may treat near-synonyms like the target ones as interchangeable in different contexts, resulting in a less natural L2 use (Szudarski, 2018).

The definitions of the three target synonyms from three American-English dictionaries, namely Longman Advanced American Dictionary (2013), Oxford Advanced American Dictionary (online version), and Merriam-Webster Dictionary (online version), are shown in Table 1:

TABLE 1. Definitions and examples of *consequence, result*, and *outcome* from American-English dictionaries

	Longman Advanced American Dictionary	**Oxford Advanced American Dictionary**	**Merriam-Webster Dictionary**
1. consequence	something that happens as a result of a particular action or situation (p. 358)	a result of something that has happened	something produced by a cause or necessarily following from a set of conditions

	e.g. *Ignoring safety procedures can have potentially tragic* **consequences**.	e.g. *This decision could have serious* **consequences** *for the industry.*	e.g. *The slightest error can have serious* **consequences**.
2. result	something that happens or exists because of something that happened before (p. 1458)	a thing that is caused or produced because of something else	something that results as a consequence, issue, or conclusion
	e.g. *Her cough is the* **result** *of years of smoking.*	e.g. *The failure of the company was a direct* **result** *of bad management.*	e.g. *The book is the* **result** *of years of hard work and dedication.*
3. outcome	the final result of a meeting, process, series of events, etc., especially when no one knows what it will be until it actually happens (p. 1211)	the final result of an action or event	something that follows as a result or consequence
	e.g. *Both sides are hoping for a positive* **outcome**.	e.g. *We are waiting to hear the* **outcome** *of the negotiations.*	e.g. *We are still awaiting the final* **outcome** *of the trial.*

It is quite clear from the above definitions that *consequence, result*, and *outcome* are similar in meaning and thus are considered near-synonyms of one another. Some information about their usage, e.g. formality, collocations, is available but not comprehensive.

With regard to formality, *outcome* and *consequence* are considered formal as they are both listed in the Academic Word List or AWL (Coxhead, 2000). However, the degree of formality of *result* is not clearly determined in the dictionaries being consulted. In terms of collocations, a list of adjective collocates of *result* is available in Longman Advanced American Dictionary, i.e. *catastrophic, desired, direct, disastrous, end, final, good, inevitable, mixed, net, immediate*, and *positive*, and that of verb collocates, i.e. *achieve, have, obtain, produce*, and *yield*, are available in Longman Advanced American Dictionary. However, no adjective collocational information is provided for *consequence* and *outcome* in any one of the three dictionaries.

Such limitations of the dictionary information may be a reason why English learners sometimes find it difficult to make a clear distinction among near-synonyms so that they can use them in appropriate contexts (e.g. Lee and Liu, 2009; Ly and Jung, 2015). This provided the motivation for this corpus-based synonym study. In the next section, two major kinds of synonyms, ways to distinguish synonyms, and some past corpus-based studies on synonyms are reviewed.

LITERATURE REVIEW

PERFECT SYNONYMS VS. NEAR-SYNONYMS

Two major types of synonyms commonly known in lexicology are 'perfect synonyms' and 'near-synonyms'. Perfect synonyms, also known as absolute synonyms, refer to a pair of synonyms in which all meanings of both words are identical and they can be used interchangeably in all contexts (Taylor, 2002). By this definition, such perfect synonyms are extremely rare, if not non-existent as it is uneconomical for a language to have two words the meanings of which are truly identical. By contrast, near-synonyms or loose synonyms are defined as vocabulary items whose senses are identical in respect of central semantic traits, but differ in minor or peripheral traits (Cruse, 1986). In other words, near-synonyms share some core or central meanings but differ in some respects. They are therefore not interchangeable in all contexts. As can be seen in the example sentences below, it is acceptable to use the pair of

near-synonyms *repair* and *mend* interchangeably in (1), but *mend* rather than *repair* sounds more natural in (2), where the context is clothes.

(1) I will **mend/repair** that light in the hall.
(2) My father used to **mend/*repair** his shoes.

DISTINGUISHING SYNONYMS

Near-synonyms can be differentiated using a number of criteria, e.g. formality of the context and collocation and semantic prosody (Jackson and Amvela, 2007).

DEGREE OF FORMALITY

To distinguish synonyms in English, it is also possible to investigate the words in terms of formality or style. Although a pair of words is very similar in meaning, one may be more preferable in a more formal context, while the other tends to occur in a less formal context. A clear example of this is the synonyms *plead, appeal* and *ask*. As noted in Phoocharoensil (2010)'s study, *ask* is more common in an informal style, whereas *plead* and *appeal* are often associated with a higher degree of formality.

Some additional examples of English words differing in the degree of formality are provided below:

Formal	Informal
refuse	rubbish
receptacle	bin
obtain	get

(Longman advanced American dictionary, 2013)

COLLOCATIONS AND SEMANTIC PROSODIES

Another very useful way to differentiate synonyms is by looking at their possible collocates, i.e. frequently co-occurring word or phrases, and semantic prosodies. The concept of collocation refers to relations between words whose probability of occurrence can be objectively measured. The meaning of a word is dependent on not merely what it possesses in itself but also on how it combines with other neighboring words (Flowerdew, 2012). In brief, collocations are words that commonly occur together (Webb and Nation, 2017, p. 276).

It is of crucial importance to note that synonymous words are sometimes different when collocated with the word partners in which they usually co-occur. Despite the fact that *shake* and *wag* both describe the action of moving suddenly from side to side, it is clear that *wag* strongly collocates with the subject noun *dog*, while *shake* tends to have a wider range of noun collocates, such as *hand, head, body, bottle*, etc.

In addition, closely connected with the concept of collocation is semantic prosody, defined as "a consistent aura of meaning with which a form is imbued by its collocates" (Louw, 1993, p. 157). Semantic prosody deals with evaluative or attitudinal meanings resulting from a word's co-occurrence with specific collocations. Nowadays corpus-based techniques largely contribute to studies in semantic prosody since it can be observed with higher degrees of accuracy by looking at co-occurring words or phrases (Flowerdew, 2012; Szudarski, 2018).

One of the classic corpus-based studies examining semantic prosodies is Stubbs (1995), in which the analysis of the verbs *cause* was the focus. Stubbs discovered certain significant differences in the collocational patterns of both verbs. To be more specific, *cause* often collocates with negative words, e.g. *accident, alarm, concern, confusion, damage, death, delay,*

fire, harm, trouble, whereas the common collocates of its synonym *bring about* are often positive, e.g. *job, growth, progress, revival, joy, happiness*, and sometimes negative, e.g. *collapse, recession, disaster*, as shown in the Corpus of Contemporary American English (COCA).

In summary, collocations play a vital role in language use. As Thornbury (2002) maintained, "Even the slightest adjustments to the collocation – by substituting one of its components for a near-synonym…turns the text into non-standard English" (p. 7). It is an undeniable linguistic fact that collocation "provides the key to native-like fluency and ease of production" (Barnbrook, Mason, and Krishnamurthy, 2013, p. 129).

PREVIOUS STUDIES ON SYNONYMS

A number of researchers have conducted studies on synonyms with an emphasis on their similarities and differences. Corpus-based lexical studies in this area were conducted as they are far more reliable than traditional descriptive research (Chung, 2011).

First, Phoocharoensil (2010) analysed five synonyms, namely *ask, beg, plead, request*, and *appeal*, with the purpose of comparing the information from three learner dictionaries, i.e. *The Oxford Advanced Learner's Dictionary, The Longman Dictionary of Contemporary English*, and *The Cambridge Advanced Learner's Dictionary*, and that drawn from a corpus of Time in 1995. The study revealed that although some principal meanings of these synonyms overlap, they also differ in several aspects, such as subtle meanings, collocations, degree of formality, and grammatical patterns. Interestingly, the findings indicated that *ask* and *beg* occur in less formal contexts than *plead, request*, and *appeal*. The target synonyms have not only similar but also different collocations and grammatical patterns. It is noteworthy that the researcher discovered additional grammatical patterns that are not presented in dictionaries.

Chung (2011) carried out a corpus-based study on two synonyms, *create* and *produce* with a focus on verb form and meaning, using data from the Brown Corpus and the Freiburg-Brown (Frown) Corpus. Having compared the data from the two aforementioned corpora with the British National Corpus (BNC), Chung reported two overlapping meanings of both verbs, i.e. 'bring into existence/cause to happen, occur, or exist' and 'create or manufacture a man-made product'. Furthermore, it was indicated that the objects following *produce* are naturally mixed, e.g. *crops, goods*, as it normally refers to factory-made products. In contrast, *create* allows more creativity since it is often followed by an object whose properties are not fixed, e.g. *problems*, *image*.

Apart from the BNC, several recent studies are based on language data from a very large corpus like the Corpus of Contemporary American English (COCA), focusing on different linguistic aspects, e.g. collocations, formality, distribution across text types (e.g. Crawford and Csomay, 2016; Jirananthiporn, 2018; Petcharat and Phoocharoensil, 2017) without referring to any statistics to confirm statistically significant level of collocational strength, with the exception of Aroonmanakun's (2015) study.

Among the studies using data from COCA, Crawford and Csomay (2016) explored two synonyms, i.e. *equal* and *identical*, in COCA. Although the two words are interchangeable in certain contexts, such as *These two students are equal/identical in the performance on the exam.* (p. 6), some differences in collocations with which they occur can be witnessed through corpus-based information. In looking at both synonyms with corpus evidence, they pointed out the benefits of language corpora in facilitating their observation, which are beyond native speakers' intuition. They discovered that *equal* is more likely to co-occur with abstract concepts, e.g. *opportunities, rights*, and *protection*, whereas *identical* is frequently combined with concrete nouns, e.g. *twins, houses,* and *items*. Furthermore, in terms of frequency, occurrences of *equal* (20,480 times) outnumber those of *identical* (8,080 times). Crawford and

Csomay highlight the importance of accessible reference to large amounts of texts included in corpora, which enhances their linguistic analysis.

In a corpus-based study by Petcharat and Phoocharoensil (2017), three synonyms, *appropriate, proper*, and *suitable* were examined based on the information from COCA in comparison with three learner dictionaries. It was shown that the three target synonyms, though sharing some core meanings, have usage differences in some respects. In particular, *appropriate* is at the highest level of formality, followed by *suitable* and *proper* respectively. In terms of collocations, they all share one noun collocate, i.e. *place*, and *proper* has the highest number of noun collocates probably because it covers more senses of meaning than *appropriate* and *suitable*. In addition, the grammatical patterns in which *appropriate* and *suitable* occur outnumber those in which *proper* does. It was concluded that corpus data highlights the differences between these synonyms in formality, collocations, and grammatical patterns.

Another insightful study by Jirananthiporn (2018) analysed corpus-based data of the synonyms *problem* and *trouble*, two nouns that often pose problems for EFL learners. The data from COCA demonstrates the distribution patterns of both words across five text types: spoken, fiction, magazine, newspaper, and academic. *Problem* occurs with far higher frequency than *trouble* in all the text types. In addition, *trouble* is more common in spoken texts than in formal written genres. This has been supported by the verb collocates of *problem*, most of which are characteristic of written discourse, e.g. *alleviate, eliminate, rectify, acknowledge, analyze, identify, address, confront, exacerbate*. However, the verb collocates of *trouble* have a lower level of formality, e.g. *ask, expect, like, mean, invite, want, spell, start,* and *give*.

Different from the previously cited studies which involved no inferential statistics in collocation analysis, Aroonmanakun (2015) explored the similarities and differences of the synonymous adjectives *quick* and *fast* in COCA, extracting the top 100 collocates of both synonyms with MI scores of at least 3. The results revealed that the two synonyms have different noun collocates. For example, *quick* collocates with *answer, breakfast, comment, reaction, reference, solution, tip, visit*, most of which refer to the action having been done or responded to in a short time. The common noun collocates of *fast*, in contrast, indicate the manner of movement rather than a short period of time, e.g. *acceleration, attack*, *boat, car, ride, tempo*. While *quick* and *fast* can sometimes modify the same noun, e.g. *learner*, the meaning of the noun combined with each individual adjective is different. More precisely, *a fast learner* learns some skills in a short time, whereas *a quick learner* is able to learn something in an easy manner. Aroonmanakun found support for Phoocharoensil (2010) and Petcharat and Phoocharoensil (2017) in that information on collocations from language corpora outweighs that existing in learner dictionaries.

The advent of the latest version of COCA, consisting of three new genres, namely TV and Movie subtitles, blogs, and webpages (Davies, 2020), and the collocation analysis based on the MI scores were the motivation for the present study on the similarities and differences between the synonymous nouns *consequence, result,* and *outcome* with an emphasis on distribution across eight genres and collocations. The present study thus aims to investigate the three target synonyms in response to the research questions below:

1. How are the synonyms *consequence, result,* and *outcome* distributed across different genres?
2. What are the common collocations of the synonyms *consequence, result,* and *outcome*?

METHODOLOGY

DATA COLLECTION

The data of the present study was drawn from the Corpus of Contemporary American English (COCA), a very large, genre-balanced corpus of American English. COCA is probably the

most widely-used corpus of English for ELT research and practice, and it contains more than one billion words of text, approximately 20 million words being included each year from 1990-2019. Nowadays COCA encompasses texts of eight different genres, namely five conventional genres, i.e. spoken, fiction, popular magazine, newspaper, and academic texts, and three new genres, i.e. TV and Movie subtitles, blogs, and webpages.

COCA is a very useful corpus resource for a number of reasons (Schmitt, 2010). First, with its enormous size, COCA represents American English and is vastly larger than any other available American English corpus (Davies, 2020). It is also considered a counterpart to the British National Corpus (BNC), which was originally created by Oxford University Press in the 1980s and early 1990s and contains 100 million words of texts from a wide range of genres, such as spoken, fiction, magazine, newspaper, and academic. Second, COCA comprises data based on texts being equally divided among different genres. Such an equal division explains why COCA is one of the biggest and well-developed corpora of present-day English (Davies, 2020). The third reason lies in the fact that COCA is not a static but a 'monitor' corpus, meaning that new texts are continuously added to the corpus, thereby annually increasing its size.

The current study aimed to answer the two research questions. COCA was first consulted for frequencies and distribution across genres of the target synonyms, i.e. *consequence, result,* and *outcome*, in all of the eight different genres. In responding to the second research question, the researcher searched for verb and adjective collocates frequently accompanying the three synonymous nouns. The typical collocates were selected based on the collocational strength measured by statistical corpus-based methods (Wongkhan and Thienthong, 2020). The corpus statistics used to identify collocations for this study is the Mutual Information (MI) value or score, which determines whether two words co-occur by chance or have a strong association in terms of collocation. However, the MI value is not without limitations. It is likely that rare occurrences will achieve prominence in the MI list (Cheng, 2012). In other words, some collocations with high MI scores may not be the most representative examples since the number of occurrences in a corpus can be very low (Szudarski, 2018). As Schmitt (2010) pointed out, it is necessary that the MI score be used in conjunction with a minimum frequency threshold. Thus, in this study, the strength of collocation was measured by a combination of both frequency and the MI value. The verb collocates that are in the top-20 frequency list presented in COCA and whose MI score is ≥ 3, which is the significance value for collocational association, were chosen (Cheng, 2012). For adjective collocate selection, the same criteria were applied but the range was expanded to cover adjectives in the top-30 frequency list due to their higher frequency in COCA, compared to that of verb collocates.

RESULTS AND DISCUSSION

In response to the two research questions, the findings as regards the overall frequency of the three target synonyms in eight different genres are presented first, followed by the collocations with which the synonyms are commonly used.

FREQUENCY AND DISTRIBUTION OF ACROSS GENRES

TABLE 2. Overall frequency and distribution of *consequence, result,* and *outcome* across eight genres

Genre	*consequence* Frequency	Per million	*result* Frequency	Per million	*outcome* Frequency	Per million	Total frequency
spoken	1,134	8.99	8,197	64.99	3,196	25.34	

fiction	759	6.41	2,545	21.51	811	6.85	
magazine	1,635	12.97	18,342	145.47	2,763	21.91	
newspaper	778	6.39	14,629	120.16	2,881	23.66	
academic texts	4,844	40.44	66,534	555.42	11,921	99.52	
TV and movies subtitles	370	2.89	3,768	29.42	665	5.19	
blogs	2,029	15.78	19,371	150.61	5,130	39.89	
webpages	2,728	21.96	22,417	180.41	5,062	40.74	
Total	14,277		155,803		32,429		202,509

Table 2 clearly shows that of all the three synonyms, *result* occurs with the greatest frequency. More specifically, the number of occurrences of *result* (155,803 tokens) is over five times higher than that of *outcome* (32,429 tokens), while *consequence* is the least frequent (14,277 tokens).

As can be seen in Table 3, the three synonyms all have a very high degree of formality, as their occurrences are highest in number in academic texts, with *result* being the most frequent (66,534 tokens), followed by *outcome* (11,921 tokens) and *consequence* (4,844 tokens), respectively. This observation is borne out by the lowest frequency of the three synonyms in informal contexts. In particular, *result* occurs with the lowest frequency in fiction (2,545 tokens), TV and movie subtitles (3,768 tokens), and spoken (8,197 tokens) respectively, all of which are representative of informal or colloquial English. In a similar vein, the frequency of *outcome* is lowest in TV and movie subtitles (665 tokens) and fiction (811 tokens), respectively. Like the distribution of *outcome*, *consequence* has the lowest frequency in TV and movie subtitles (370 tokens), followed by fiction (759 tokens) and newspapers (778 tokens), respectively.

TABLE 3. Distribution of *consequence, result,* and *outcome* across eight genres according to frequency

	consequence			*result*			*outcome*	
Genre	**Frequency**	**Per million**	**Genre**	**Frequency**	**Per million**	**Genre**	**Frequency**	**Per million**
academic texts	4,844	40.44	**academic texts**	66,534	555.42	**academic texts**	11,921	99.52
webpages	2,728	21.96	**webpages**	22,417	180.41	**blogs**	5,130	39.89
blogs	2,029	15.78	**blogs**	19,371	150.61	**webpages**	5,062	40.74
magazine	1,635	12.97	**magazine**	18,342	145.47	**spoken**	3,196	25.34
spoken	1,134	8.99	**newspaper**	14,629	120.16	**newspaper**	2,881	23.66
newspaper	778	6.39	**spoken**	8,197	64.99	**magazine**	2,763	21.91
fiction	759	6.41	**TV and movies subtitles**	3,768	29.42	**fiction**	811	6.85
TV and movies subtitles	370	2.89	**fiction**	2,545	21.51	**TV and movies subtitles**	665	5.19
Total	14,277			155,803			27,333	

In addition, all three synonyms occur frequently in webpages and blogs, i.e. two similar text types which are considered new genres of COCA (Davies, 2020). Due to the high level of formality of the nouns *consequence, result,* and *outcome*, it is assumed that the two newly added genres, webpages and blogs, belong to formal text types but following academic texts in their degree of formality.

The next section pertains to the common verb and adjective collocates of the nouns *consequence, result,* and *outcome*, corresponding to the second research question.

COMMON COLLOCATIONAL PATTERNS

VERB COLLOCATES

In this section, verb collocates that are frequently used with the nouns *consequence, result,* and *outcome* are shown and discussed. The selected verbs have at least ≥ 3 of the MI value to confirm their statistical significance (Cheng, 2012; Schmitt, 2010).

From Table 4, there exist only 15 frequent verb collocates of *consequence* and 17 of *result* based on frequency and MI scores (≥ 3), while more than 20 verbs can frequently collocate with *outcome*. Therefore, only the top-20 verb collocates are presented in the table. Surprisingly, some of the target synonymous nouns share common collocates. In particular, *consequence* and *outcome* strongly collocate with the verb *anticipate*, while *outcome* and *results* share some verb collocates, e.g. *achieve, yield*. Nevertheless, the existence of shared collocates in Table 4 should be interpreted with some caution. Some verbs, e.g. *show*, can actually co-occur with all the three target synonyms but are not included due to either its low frequency or low MI value in COCA. Moreover, some other verbs that are frequent in English and can co-occur with all the three target nouns are not existent in the corpus probably because they constitute weak collocations, such as the verb *have*, which can collocate with a multitude of neighboring words, e.g. *have + consequence/ result/ outcome* (Hill, 2000).

TABLE 4. Verbs collocates of *consequence, result,* and *outcome* in COCA

Rank	consequence			result			outcome		
	Verb collocate	**Frequency**	**MI Value**	**Verb collocate**	**Frequency**	**MI Value**	**Verb collocate**	**Frequency**	**MI Value**
1	suffer	1144	4.86	indicate	4459	4.25	improve	1029	4.42
2	face	811	3.46	suggest	3707	3.00	affect	959	4.22
3	result	284	3.14	produce	3560	3.38	predict	871	5.08
4	mitigate	80	5.02	obtain	1821	3,87	determine	724	3.59
5	anticipate	73	3.02	achieve	1755	3.39	influence	685	4.89
6	foresee	59	4.77	yield	1689	5.01	achieve	653	4.10
7	reap	46	4.13	interpret	812	3.75	associate	629	4.20
8	entail	44	3.66	summarize	365	4.05	measure	457	3.87
9	ensue	30	4.05	narrow	286	3.74	relate	399	3.05
10	evade	19	3.38	replicate	267	3.81	result	363	3.36
11	insulate	13	3.40	generalize	246	5.16	assess	319	3.97
12	befall	10	3.65	skew	175	4.58	examine	293	3.02
13	ameliorate	10	4.35	certify	142	3.37	evaluate	254	3.82
14	portend	6	3.92	bias	102	4.10	yield	146	3.61
15	forbear	3	4.87	corroborate	70	3.30	alter	118	3.17
16				tabulate	64	5.04	correlate	106	4.24
17				confound	63	3.17	await	103	3.57
18							anticipate	86	3.09
19							dictate	68	3.48
20							attain	39	3.00

TABLE 5. Placement of verbs collocates of *consequence, result,* and *outcome* in COCA

consequence	verb + consequence	suffer, face, mitigate, anticipate, foresee, reap, evade, insulate, ameliorate
	consequence + verb	result, entail, ensue, befall, portend, forbear
result	verb + result	achieve, bias, certify, confound, corroborate, generalize, interpret, narrow, obtain, produce, replicate, skew, summarize, tabulate, yield
	result + verb	indicate, suggest
outcome	verb + outcome	achieve, affect, alter, anticipate, assess, associate, attain, await, correlate, determine, dictate, evaluate, examine, improve, influence, predict, relate, result (in), yield

It can be seen from Table 5 that the nouns *consequence, result,* and *outcome* do not have the same distribution pattern of collocation. In terms of placement, the corpus data show that the noun *consequence* frequently follows the verbs *suffer, face, mitigate, anticipate, foresee, reap, evade, insulate,* and *ameliorate*, as exemplified in (3), and the verb collocates that follow *consequence* are *result, entail, ensue, befall, portend,* and *forbear*, as in (4).

(3) Though on different sides in this protest, both ***suffer the consequence*** of economic decline.

(4) The Prepper Movement fights everyday to preserve, protect &; sustain a way of life they believe in no matter what ***consequences befall*** them.

The noun *result* also has two distribution patterns. While most of its verb collocates appear before the noun *result*, i.e. *achieve, bias, certify, confound, corroborate, generalize, interpret, narrow, obtain, produce, replicate, skew, summarize, tabulate,* and *yield*, as exemplified in (5), two verbs, i.e. *indicate* and *suggest*, follow it, as in (6).

(5) These were worked over the dry surface several times until I ***achieved the result*** I wanted.

(6) For ratings of both mother and father, the twin ***results suggested*** a significant and substantial genetic influence on acceptance-rejection.

As for *outcome*, its verb collocates, i.e. *achieve, affect, alter, anticipate, assess, associate, attain, await, correlate, determine, dictate, evaluate, examine, improve, influence, predict, relate, result (in),* and *yield* are placed before it, as exemplified in (7).

(7) Myriad officials maintain that in Europe, where U.S. patent law does not apply, competition ***hasn't improved outcomes***.

The next step of the research procedure was analyzing semantic preference of the three target synonyms in order to group their verb collocates on the basis of their similarities in meaning. Semantic preference refers to the restriction of the co-occurrences of lexical items to those sharing a semantic feature (Sinclair, 2004). It is common for words to be limited to identifiable semantic fields (Cheng, 2012; Ang et al. 2017). In other words, semantic preference can be determined by the semantic relations between words and their collocates. Information from a collocational list helps identify the range of associations of the search word as well as the semantic relations among its collocates (Ly and Jung, 2015).

TABLE 6. Semantic preference of verb collocates of *consequence*

1. HAVE	face, reap, suffer
2. SOLVE	ameliorate, mitigate
3. PREDICT	anticipate, foresee, portend
4. AVOID	evade, forbear, insulate
5. HAPPEN	befall, ensue, entail, result

Obviously a number of verb collocates discovered demonstrate the negative sense this particular noun conveys. Some prominent verb collocates signifying negative or adversative meaning of *consequence* are *face, suffer, mitigate, evade, forbear, insulate, befall*, and *ensue*, as can be seen in the contexts where these verbs appear, exemplified in (8). Looking at the words surrounding the verb collocates and *consequence* enables us to see the negative environments in which the collocations occur.

(8) I actually prefer her plan as it tells the insurance companies and the market to put up or ***face a consequence*** you don't want.

Five themes stemmed from the analysis of semantic preference of the noun *consequence*, as shown in Table 6. The first theme HAVE includes the verbs describing the way people encounter something negative, namely *face, reap*, and *suffer*. Although the verb *reap* is often used with positive nouns, e.g. *benefit*, the combination *reap consequences* is also common. The second theme SOLVE is related to how a problem is remedied or rectified, with *ameliorate* and *mitigate* being its members. PREDICT, the third theme, encompasses verbs that show the way a consequence is forecast, i.e. *anticipate, foresee*, and *portend*. The next theme AVOID has to do with the verbs meaning 'to safeguard or protect someone or something from something unpleasant happening', namely *evade, forbear*, and *insulate*. The last theme is HAPPEN, containing the verbs *befall, ensue, entail*, and *result*, which often refer to the occurrence of undesirable things or situations, as exemplified in (9).

(9) When a woman succumbs to her hidden feelings for her boss without setting the other man she is seeing free, devastating ***consequences ensue***.

TABLE 7. Semantic preference of verb collocates of *result*

1. MAKE	produce, yield
2. GET	achieve, obtain
3. DO SOMETHING WITH	generalize, interpret, replicate, summarize, tabulate
4. AFFECT	bias, confound, narrow, skew
5. SUPPORT	certify, corroborate
6. SHOW	indicate, suggest

While the noun *consequence* is associated with verb collocates of a negative sense, *result* is not. A corpus-informed observation from COCA indicates that the verb collocates of result are largely 'research-oriented'. Many collocates are clearly restricted to the context of research writing, e.g. *generalize, replicate, skew, corroborate*. With close scrutiny, the semantic preference of *result* has been revealed in Table 7, which consists of six themes. In the first two themes, i.e. MAKE and GET, the verb collocates are close in meaning, in particular, *produce* and *yield*, and *achieve* and *obtain*. The third theme DO SOMETHING WITH contains the highest number of collocates, i.e. *generalize, interpret, replicate, summarize*, and *tabulate*, all of which are related to researchers' action, as exemplified in (10). The fourth theme AFFECT deals with the way research results can be affected or influenced, comprising the verb collocates *bias, confound, narrow*, and *skew*. The verb collocates in the fifth theme SUPPORT, i.e. *certify* and *corroborate*, are used in writing research papers to show that results are consistent with those of other studies, while the collocates assigned to the sixth theme SHOW, i.e. *indicate* and *suggest*, are usually used in reporting results.

(10) By being inclusive, this study avoided the problem of nonrepresentative sampling that typically is encountered when focus group ***results are generalized***.

TABLE 8 Semantic preference of verb collocates of *outcome*

1. MAKE	determine, dictate, result (in), yield
2. GET	achieve, attain
3. DO SOMETHING WITH	assess, await, evaluate, examine, measure
4. AFFECT	affect, alter, improve, influence
5. LINK	associate, correlate, relate
6. PREDICT	anticipate, predict

Upon investigation of the semantic preference of *outcome* through its verb collocates, six main themes were determined. Four themes of *outcome* and *result*, namely MAKE, GET, DO SOMETHING WITH, and AFFECT, overlap, and *outcome* shares one theme with *consequence*, which is PREDICT. In the first theme, MAKE, the verb *result (in)* and *yield* are close in meaning, as exemplified in (11). Meanwhile, *determine* and *dictate* are also similar in meaning, as exemplified in (12). The second theme GET has two members, namely *achieve* and *attain*. All the verb collocates under the third theme DO SOMETHING WITH, *assess, evaluate*, and *measure*, are very similar in meaning. The verb collocates in the next theme AFFECT are associated with how an outcome can be changed in a positive manner (i.e. *improve*) or in a neutral way (i.e. *affect, alter*, and *influence*). Regarding the fifth theme LINK, the collocates found in the corpus data show a connection or relationship between things, i.e. *associate, correlate*, and *relate*. Finally, *anticipate* and *predict* are viewed as members under the theme PREDICT because they are concerned with stating an outcome that may happen in the future.

(11) Ultimately, it was Szczerbiak's tiebreaking three with 18.1 seconds left that ***determined the outcome***.

(12) The segment -ONIA, after loss of hiatus, i.e. -onja, could have developed in one of the following three ways, none of which, alone, ***could have yielded the outcome***.

Having analysed the common verb collocates of *consequence, result,* and *outcome* based on the corpus data from COCA, the researcher continued to search for adjectives frequently co-occurring with the target synonyms.

ADJECTIVE COLLOCATES

TABLE 9. Adjectives collocates of *consequence, result,* and *outcome* in COCA

Rank	*consequence*			*result*			*outcome*		
	Adjective collocate	**Frequency**	**MI Value**	**Adjective collocate**	**Frequency**	**MI Value**	**Adjective collocate**	**Frequency**	**MI Value**
1	unintended	1944	10.13	similar	2425	3.08	positive	1670	5.07
2	negative	1681	5.79	positive	2347	3.42	possible	1043	3.13
3	serious	1226	4.32	direct	1592	3.59	negative	736	4.43
4	economic	805	3.36	previous	1436	3.02	clinical	674	5.34
5	long-term	638	5.00	consistent	1362	3.98	likely	670	3.15
6	dire	634	7.69	preliminary	741	4.76	educational	577	4.54
7	potential	568	4.02	mixed	691	4.54	desired	563	7.24
8	environmental	406	3.47	net	657	3.87	academic	549	4.25
9	severe	404	4.70	experimental	562	3.64	final	513	3.20
10	adverse	393	6.70	desired	520	4.99	successful	440	3.44
11	devastating	363	6.06	surprising	512	3.15	adverse	431	6.69
12	disastrous	357	7.01	statistical	432	3.48	primary	427	3.84
13	direct	335	3.62	promising	419	3.59	long-term	347	3.98
14	inevitable	281	5.11	disastrous	381	4.78	improved	344	5.59
15	tragic	226	5.04	inevitable	334	3.05	potential	332	3.10
16	far-reaching	208	7.58	encouraging	285	3.28	behavioral	266	5.04
17	immediate	207	3.71	predictable	281	3.73	favorable	250	5.64
18	logical	204	4.76	empirical	275	3.42	expected	233	4.96
19	grave	193	5.73	disappointing	272	3.95	ultimate	201	3.77
20	catastrophic	187	5.97	descriptive	261	4.18	inevitable	187	4.34
21	practical	186	3.61	tangible	249	4.18	secondary	174	4.05
22	profound	175	4.60	inconsistent	223	3.86	desirable	164	5.17
23	unfortunate	164	4.67	conflicting	217	3.96	functional	159	424
24	psychological	161	3.60	comparable	214	3.05	developmental	143	4.53
25	enormous	149	3.33	quantitative	199	3.66	uncertain	132	4.44
26	deadly	147	3.98	favorable	193	3.13	distal	126	7.41

27	unforeseen	144	7.62	qualitative	167	3.32	psychological	122	3.05
28	harmful	137	4.96	inconclusive	160	5.30	predictable	112	4.54
29	ecological	123	4.59	catastrophic	157	3.43	beneficial	109	4.15
30	fatal	120	4.45	satisfactory	150	4,02	cognitive	108	3.30

The corpus-based information from Table 9 confirms synonymy among the three target words because *consequence, result,* and *outcome* share certain common collocates. *Inevitable* is the only adjective collocate modifying all the three synonyms found in the selected COCA data. The adjective collocates that *consequence* and *result* share are *disastrous* and *catastrophic*. Those typically co-occurring with *consequence* and *outcome* are *negative, adverse, long-term, potential*, and *psychological*. Finally, *result* and *outcome* were found to have two adjective collocates in common, namely *positive* and *predictable*. It is also important to note that the shared adjective collocates are limited to those presented in Table 9.

There are possibly more collocates which the three synonyms can actually share. Their absence from Table 8, however, may result from the adjective-collocate selection criteria that exclude either those with an MI score that is lower than 3 or those that do not appear in the top-30 list. For example, the adjective *predictable* can be combined with all the target synonyms but it is not in the collocation list of *consequence* because of its relatively low frequency, in comparison to those in the top-30 list.

TABLE 10. Semantic preference of adjective collocates of *consequence*

1. NEGATIVE SENSE	adverse, catastrophic, deadly, devastating, dire, disastrous, fatal, grave, harmful, negative, serious,severe, tragic, unfortunate
2. TYPE	ecological, economic, environmental, logical, practical, psychological
3. TIME	immediate , long-term
4. POSSIBILITY	inevitable , potential
5. EXTENT	enormous, far-reaching, profound
6. MISCELLANEOUS	direct, unforeseen, unintended

All the adjective collocates were then classified, according to their semantic preference. In Table 10, the adjective collocates of *consequence* were categorised into six themes, namely NEGATIVE SENSE, TYPE, TIME, POSSIBILITY, EXTENT, and MISCELLANEOUS. The majority of its adjective collocates, represented by NEGATIVE SENSE, are strongly associated with negative or adversative contexts, which is in line with the findings of several verb collocates accompanying *consequence,* as reflected in Table 6. Their core meanings are associated with 'causing damage, destruction, failure, or death', as demonstrated by the adjectives *adverse, catastrophic, deadly, devastating, dire, disastrous, fatal, grave, harmful, negative, serious, severe, tragic,* and *unfortunate*, as exemplified in (13). The second theme TYPE includes adjectives referring to a variety of topics like *ecological, economic, environmental, logical, practical,* and *psychological*. It is worth mentioning here that the meaning of *practical* in this particular context does not have anything to do with 'likely to succeed or be effective' but 'relating to real situations and events'.

(13) In general, the greater the magnitude of any claimed ***catastrophic consequence*** of global warming, the smaller the likelihood of it occurring.

As for the next theme TIME, adjectives indicating temporal ideas are included, i.e. *immediate* and *long-term*, as in (14), while in POSSIBIITY, 'the possibility of something happening or being developed' is denoted by *inevitable* and *potential*, the former of which implies a negative or unpleasant result. The fifth theme EXTENT relates to how large, serious, or important a consequence is, consisting of three collocates, *enormous, far-reaching,* and

profound, all of which principally show a strong influence or effect. Three final adjectives are grouped together in MISCELLANEOUS, namely *direct, unforeseen*, and *unintended*.

(14) Index futures contracts are promises to make payments, so the Fed's trades would have no ***immediate consequence*** for the quantity of money.

TABLE 11. Semantic preference of adjective collocates of *result*

1. RESEARCH-ORIENTED	comparable, consistent, conflicting, descriptive, empirical, experimental, mixed, predictable, preliminary, previous, qualitative, quantitative, inconclusive, inconsistent, statistical, surprising
2. NEGATIVE SENSE	catastrophic, disappointing, disastrous
3. POSITIVE SENSE	desired, encouraging, favorable, positive, promising, satisfactory, tangible
4. POSSIBILITY	inevitable
5. MISCELLANEOUS	net

Through a closer investigation into the semantic preference of adjective collocates of *results*, five major themes emerged. The majority of the discovered adjectives fall into the first theme RESEARCH-ORIENTED, which is consistent with the findings of verb collocates of *result* prevalent in research-based genres previously discussed. The adjectives which prevail in the research-related contexts are *comparable, consistent, conflicting, descriptive, empirical, experimental, mixed, predictable, preliminary, previous, qualitative, quantitative, inconclusive, inconsistent, statistical,* and *surprising*, as exemplified in (15). Lower in variety than those modifying *consequence*, three adjective collocates of *result* under NEGATIVE SENSE are *catastrophic, disappointing,* and *disastrous*, as shown in (16) However, one key difference between the adjective collocates co-occurring with *consequence* and *result* is that while a number of *consequence* collocates express a negative sense, there exist certain collocates of *result* that are positive in meaning, i.e. *desired, encouraging, favorable, positive, promising, satisfactory,* and *tangible*. One adjective collocate indicating possibility is *inevitable*, and the last one, *net*, which does not belong to any theme, is placed under MISCELLANEOUS. It should be noted that *net result* is a fixed phrase meaning 'the situation that exists at the end of a series of events'.

(15) This second research philosophy begins from some observational or ***experimental result*** and attempts to integrate the finding within some theoretical context.

(16) And reducing the economic help needed to bolster these nations that undertake to help defend freedom can have the same ***disastrous result***.

TABLE 12. Semantic preference of adjective collocates of *outcome*

1. TYPE	academic, behavioral, clinical, cognitive, developmental, educational, functional, psychological
2. POSITIVE SENSE	beneficial, desirable, desired, expected, favorable, improved, positive, successful
3. POSSIBILITY	inevitable, likely, possible, potential
4. SEQUENCE/PRIORITY	final, primary, secondary, ultimate
5. NEGATIVE SENSE	adverse, negative, uncertain
6. TIME	long-term
7. LOCATION	distal
8. MISCELLANEOUS	predictable

The adjective collocates of *outcome* are connected with more themes than *consequence* and *result*. Of all the eight themes shown in Table 12, most of the co-occurring adjectives are concerned with different types or topics (TYPE), i.e. *academic, behavioral, clinical, cognitive,*

developmental, educational, functional, and *psychological*, as exemplified in (17). Like those of *result*, adjective collocates of *outcome* express POSITIVE SENSE, i.e. *beneficial, desirable, desired, expected, favorable, improved, positive,* and *successful*, as well as POSSIBILITY, i.e. *inevitable, likely, possible*, and *potential*. There are also some adjectives representing SEQUENCE/PRIORITY, as in *final, primary, secondary,* and *ultimate*. Similar to *consequence* and *result*, *outcome* also collocates with adjectives that express NEGATIVE SENSE, i.e. *adverse, negative*, and *uncertain*. The three remainders of the adjective collocates has been assigned to TIME (i.e. *long-term*), LOCATION (i.e. *distal*), and MISCELLANEOUS (i.e. *predictable*), respectively.

(17) As was the case for the other meta-analyses, the mean effect size for **academic outcome** was in the small range (M within-group ES = 0.19).

In summary, many adjectives that frequently collocate with the three target nouns *consequence, result*, and *outcome* share some common themes, namely NEGATIVE SENSE, TIME, and POSSIBILITY, which may be indicative of synonymy among all the three words. In-depth analysis revealed subtle differences in semantic preference with which the synonyms are associated. While the typical adjectives describing *consequence* are representative of negative senses, a number of adjective collocates accompanying *result* are used in research-related contexts. In addition, *outcome* has adjective collocates with the highest variance of themes.

The findings of this study are in line with previous research in many respects. In terms of genres, the three synonyms *consequence, result*, and *outcome* are prevalent in academic texts, which substantiates their high level of formality. This provides additional evidence that some synonymous words differ in the degree of formality, as shown in previous studies (e.g. Phoocharoensil, 2010; Jirananthiporn, 2018). In addition, it was discovered that the three nouns sometimes share verb and adjective collocates. This confirms their statuses as synonyms of one another. Different collocations specific to each noun systematically distinguish all the synonyms. By way of illustration, some particular adjectives or verbs are likely to co-occur with one synonym rather than another, which lends support to a number of studies (e.g. Aroonmanakun, 2015; Chung, 2011; Crawford and Csomay, 2016; Jirananthiporn, 2018; Petcharat and Phoocharoensil, 2017).

CONCLUSION

This corpus-based study explored the similarities and differences between three synonyms, namely *consequence, result*, and *outcome*, with emphasis on their distribution across eight genres in COCA and their frequently-occurring verb and adjective collocates. The results have clearly revealed that all the target synonyms are used with the highest frequency in academic texts, which suggests that they are all associated with a high degree of formality. More precisely, *consequence* and *outcome* are lowest in frequency in TV and movie subtitles, and *result* in fiction. The prevailing language in these two genres is characteristic of informal English.

In addition to the distribution patterns exhibited from the corpus data, this study also presents the top-20 verbs and the top-30 adjectives which most strongly collocate with these synonyms. According to COCA, *outcome* has more typical verb collocates than *result* and *consequence* respectively.

A comprehensive analysis of semantic preference of verb/adjective collocation unveils subtle usage differences among the synonyms. It is shown that *consequence* is by and large

closely related to words with negative sense. Despite being a near-synonym of *consequence*, *result* does not have a clear association with negative or adversative contexts. Instead, the collocates of *results* are more common in research methodology. Unlike *consequenc*e and result, *outcome* combines with collocates with a wide variety of semantic properties. One of the most common themes concerns topics or types, as indicated by adjectives like *psychological*.

The current study, however, has certain limitations. The number of verb and adjective collocates are limited to those in the top-20 and top-30 lists, respectively. An inclusion of collocates with comparatively lower frequency will provide a clearer picture of collocational patterns of the target synonyms. Furthermore, statistical tests in addition to MI can also be taken into account. Alternatively, a combined application of MI scores and T-scores, which focus on the number of joint frequencies (Cheng, 2012), can be used in collocation analysis. Another limitation lies in the linguistic traits of synonyms being investigated. While this study mainly looked at distribution and collocation patterns, other aspects, such as grammatical patterns, can also be considered. Furthermore, since only three synonyms are the focus of this study, a further study may also include other synonyms in the same group, e.g. *effect* or *impact*, or examine other sets of synonyms. Additionally, although the present-study analysis is based on COCA, the findings may not be generalised to include other major varieties of English, namely British English. It is recommended that future researchers examine synonym usage in other Englishes or conduct a comparative synonym study across Englishes.

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