A semantic prosody analysis of three adjective synonymous pairs in COCA

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Abstract

Over the past two decades the concept of semantic prosody has attracted considerable research interest since Sinclair (1991) observed that "many uses of words and phrases show a tendency to occur in a certain semantic environment" (p. 112). Sinclair (2003) also noted that semantic prosody conveys its pragmatic meaning and attitudinal meaning. As the first scholar introducing the term 'semantic prosody,' Louw (1993) claimed that the habitual collocates of a lexical item is established through the semantic consistency of its subjects. Semantic prosody has thus been closely related to collocation learning in language acquisition research. In the context of collocation learning, near-synonyms particularly pose a difficulty for most foreign language learners due to their similar denotational meanings but un-interchangeable semantic prosody (Xiao & McEnery, 2006). The present corpus-based study was designed to compare the semantic preference and semantic prosody with three synonymous adjective pairs picked up from the academic core words in COCA (Gardner & Davies, 2013). The pairs were chosen based on the following criteria: a) their meanings were checked against Collins Thesaurus Online; b) the words with more than one meaning were removed; c) the word with more than one part of speech was defined the same as its paired word. All occurrences were examined manually at the span of 4 words to both the left and right. Discussion and implications were reported.

1. Introduction

Introduced for the description of co-occurrence phenomena by the British linguist J. R. Firth in the 1950s, the term 'collocation' has been employed in linguistics for the analysis of language. Firth considered the use of collocation from a broader language perspective in which meaning was constructed as the result of complex interaction of functions. Firth also emphasized how sounds work in context to create meanings in his study on phonology. Rooted in the neo-Firthian concordance-based analysis of collocation, the concept was further extended to semantic prosody by Sinclair (1991), who observed that *happen* was found to be collocated with unpleasant things such as *accident*. Inspired by Sinclair's work, Louw (1993) defined the above-mentioned concept as 'semantic prosody', in which he described the likelihood that particular lexical items collocate with one another. Louw (2000) further conceptualized it to "a form of meaning which is established through the proximity of a consistent series of collocates" (p. 57). That is, the node word and its collocates do not occur at random but with a fixed pattern, and the purpose of semantic prosody is to show the attitude or evaluation of a speaker/writer in an authentic text. Interests in semantic prosody has been proliferating

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since then, and one commonality is that "semantic prosody is instantiated when a word such as CAUSE co-occurs regularly with words that share a given meaning or meanings, and then acquires some of the meanings of those words as a result. This acquired meaning is known as semantic prosody" (Stewart, 2010, p. 1).

Relying on a pragmatic perspective, Sinclair (1996) considered semantic prosody to be the discourse function of a sequence rather than the property of a word. Take the word 'budge' as an example, the close observation of its corpus led to two findings. One is that the most frequent phraseology around the word involves a negative feeling of unwillingness or inability, and the subject is a first person pronoun. The other is that the discourse function in the phraseology is to express frustration in the face of difficulty. Having created numerous examples rich in observations and insights, Stubbs (2001) re-assessed the concept of semantic prosody and re-named it as 'discourse prosody' as a response to Sinclair's claims. Stubbs (2002) further acknowledged that "there are always semantic relations between node and collocates, and among the collocates themselves" (p. 225), and he grouped discourse prosody into three categories: positive, negative, and neutral. For example, the verb *cause* is often associated with negative nouns such as *accident, crisis, delay*, etc., whereas the verb *provide* typically collocates with positive nouns like *food, care, and help*. As a concept closely related to semantic prosody, semantic preference refers to the semantic categories shared by the frequent collocates of a specific node item (Hunston, 2002, 2007; Partington, 2004). Despite the fact that there is a fuzzy boundary between the two concepts of semantic preference and semantic prosody, one clear-cut distinction between them is "semantic preference may be in favor of any definable semantic field, but semantic prosody is always either for positive or for negative evaluation (McEnery & Hardie, 2012, p. 137). In other words, semantic prosody "evaluates the topic and indicates to the hearer how a part of the utterance is to be interpreted functionally (Partington, 2004, p. 149).

Observing three sets of corresponding lexical items in English and Chinese, Wei and Li (2013) found that there may be more than one semantic prosody residing in a specific lexical item depending on its co-selections of the word features. Wei and Li (2013) further proposed an idea of prosodic strength by measuring the frequency of occurrence of positive/negative attitudinal meaning a lexical item has. For example, the phrase 'spring up' is associated with 98 positive attitudinal meaning out of 100 examples and 2 negative examples, then it is designated with a positive prosodic strength of 0.98. By examining the concordance lines, the present study looked at the semantic preference and semantic prosody of three synonymous adjective pairs in the academic texts of COCA and also examined their semantic strength.

1.1. Literature review

The importance of near-synonyms has received increasing attention in collocational classroom-based research during the past decade or so (Hill, 2001; Lewis, 2001; Woolard, 2001, Webb & Kagimoto, 2012). However, it is practically impossible to teach the large number of synonyms due to the limited teaching hours in the classrooms. As a result, the use of corpora has become such a popular tool that the concordance lines can serve as the evidence for learners to observe the different patterns between the synonyms. According to Xiao and McEnery (2006), synonyms or near synonyms are lexical pairs "that have very similar cognitive or denotational meanings, but which may differ in collocational or prosodic behavior. As such, synonymous words are not collocationally interchangeable" (p. 108). In particular, even though two words may share similar cognitive or denotational meanings, they may demonstrate not only different collocational behaviour but also distinct semantic prosodies.

In a study to raise the language awareness of local English teachers in Hong Kong, Tsui (2004) examined the contribution of corpus linguistics via TeleNex, a website from which teachers ask for

advice for some confusions and raise questions with which they come across in their everyday teaching. The questions are answered by registered users or language specialists in TELEC (Teachers of English Language Education Centre), housed in the Faculty of Education at The University of Hong Kong. One of the most frequently asked questions was whether there is any difference between words that are generally considered to be synonyms. Some were cases in which teachers were not aware of any difference in meaning and usage, such as "big" and "large", "lastly" and "finally", others were cases in which they knew the difference in usage but could not fully articulate what the difference was, for example, "tall" and "high". Tsui concluded that Chinese learners often have difficulty in differentiating those near-synonyms because they have the same Chinese translations. Thus the Chinese explanations/translations did not help the students, even sometimes the learners' dictionaries offer only very concise explanations and limited examples with those synonymous pairs. However, take an example between *high* and *tall*, the concordance lines indicate that *high* was used in a metaphorical sense with more abstract nouns but *tall* appeared more frequently in contexts with concrete nouns such as people, tree, and building.

To date, none of the studies focusing on semantic prosody have selected the target items from a specific academic list derived from corpus data. Currently researchers within academia across the world are under big pressure to read and publish large amounts of academic texts. One of the major medium of the academic texts is undoubtedly English, whereas the academic users are not definitely English native learners. One obstacle that may block the non-native learners on the road to academic success is the semantic preference and prosody with these synonymous word pairs while composing the academic texts. The present study aimed to examine the semantic preference and semantic prosody with three synonymous adjective pairs picked up from the core word lists of AVL (the Academic Vocabulary List, Gardner & Davies, 2013) across different academic disciplines, with an attempt to reinforce the professional development of foreign academic users by identifying the patterns of those synonymous pairs.

2. Method

The corpora used in the present study was *Corpus of Contemporary American English (COCA)*, which is the "largest freely-available corpus of English, and the only large and balanced corpus of American English." The corpus was created by Mark Davies at Brigham Young University, and it is used by tens of thousands of users every month (linguists, teachers, translators, and other researchers). The corpus contains more than 450 million words of text and is equally divided among spoken, fiction, popular magazines, newspapers, and academic texts. It includes 20 million words each year from 1990-2012 and the corpus is also updated regularly. Because of its design, it is the only corpus of English that is suitable for looking at current, ongoing changes in the language. Besides its size and easy accessibility, it is chosen for the sake of convenient search for surrounding words (collocates) within a ten-word window (e.g. all nouns somewhere near faint, all adjectives near woman, or all verbs near feelings), which often gives good insight into the meaning and use of a word.

2.1. The target words

The synonymous words chosen for comparison in this study were those from the 3,000 core words in the AVL (e.g., *initial* vs. *preliminary*). The list can be freely downloaded at www.academicwords.info. Gardner and Davies (2013) acknowledged that these academic core words generally appear across the vast majority of the various academic disciplines (i.e., education, humanities, history, social science, philosophy, law and political science, science and technology, medicine and health, business and finance). Derived from a corpus with 120 million words of academic texts, these core words also distinguish from the general high-frequency words and

academic technical words appearing in a narrow range of academic disciplines. Gardner and Davies used four criteria to create the academic core words: ratio, range, dispersion, and discipline measure. By comparing 570 words in both the AVL and AWL (Coxhead, 2000), Gardner and Davies observed that AVL demonstrates a better coverage across different disciplines of the academic texts. The present study compared and contrasted 3 synonymous adjective pairs to observe their semantic preference and semantic prosody in academic texts of COCA.

2.2. Choosing the word pairs

The synonymous word pairs were chosen based on the following criteria: 1) The list was screened first to find the near-synonyms; 2) Their meanings were checked against Collins Thesaurus and Webster-Merriam Online Dictionaries to make sure they share the same denotational meaning; 3) The words with more than one meaning were removed to make the comparison on an equal basis; 4) The word with more than one part of speech (e.g., *initial* as an adjective and *initial* as a verb) was defined the same as its paired word; 5) The data analysis were based on the 20 most frequent collocates within a span of 4 words to both the left and right. One hundred randomly selected concordance lines were examined with each of the 20 collocates and all the concordance lines were looked at for those words with less than 100 concordance lines. Only those pairs with a mutual information of 3 were selected for comparison. Mutual information, which is involved in the COCA interface, was used in this study due to the following reasons. First, it favors content words rather than function words as T-score does. Second, an MI score of 3 or higher indicates that the two lexical items frequently co-occur. Third, it complements the frequency measure in better identifying the adjectives that typically modify the nouns (Liu, 2010, 2013). The present study analyzed the following three adjective synonymous pairs: *initial/preliminary, following/subsequent,* and *sufficient/adequate* via the queries of frequency and mutual information score. The semantic patterns and general distributional patterns within each academic discipline were discerned after looking at the concordance lines of each pair.

3. Results

Table 1 shows the overall profiles of semantic preference and prosody of the three adjective pairs.

Table 1. Semantic preference and prosody of the three synonymous adjective pairs

Synonymous adjective pairs	Semantic preference	Prosodic strength		
		positive	neutral	negative
initial	A specific point or period in progress/development; the act of doing something	.03	.89	.08
preliminary	Something to be completed	X	.95	.02
following	Explicitness	X	1.00	X
subsequent	Something in need of logical arrangement; something disorderly/unruly	.11	.88	.01
sufficient	Concreteness	.25	.63	.12
adequate	Abstractions	.29	.52	.19

Initial vs. Preliminary

The analysis looks at the first twenty collocates for each search term. Positive collocates are underlined. Negative collocates are in italics. The number of occurrences in the corpus is given after the word.

Table 2. Top 20 collocates co-occurring with initial and preliminary in the academic texts of COCA

initial	preliminary
after 654	results 254
phase 171	study 215
stages 169	analysis 160
stage 145	data 158
contact 135	analyses 150
step 134	findings 150
screening 74	investigation 104
reaction 69	evidence 99
investigation 60	report 68
diagnosis 54	suggest 57
session 54	assessment 47
presentation 51	conducted 46
phases 45	indicate 44
mailing 42	injunction 39
baseline 39	suggests 36
coding 34	testing 30
reactions 33	hearing 28
impression 30	step 27
draft 30	indicates 26
shock 20	version 26

Initial

After observing the concordance lines of *initial*, it is found that its collocates mainly consist of two types: a specific point or period in progress/development (*e.g., stages, treatment, stage, phase, step*) and the act of doing something (*e.g., evaluation, screening, training, reaction, coding*). The vast majority of the collocates have a strictly neutral prosody, as seen in the following sentences:

(1) The **initial phase** consisted of the analysis for the data generated from the pilot study.

(2) An **initial step** in a community action project is the gathering of a working leadership group.

(3) We made an **initial investigation** of data-driven line drawing in our earlier article.

(4) The member checks were transcribed verbatim and the **initial coding** procedures were followed.

(5) Increasing numbers of men are living five years beyond **initial diagnosis** and are considered long-term survivors.

Shock, apparently a negative collocate, is found to be neutral or even positive in the contexts and serves as a transition from a low ebb to a better turnaround.

(6) Once the bad news has been delivered and the **initial shock** absorbed, let the client know exactly what you can do to help.

(7) After the **initial shock**, Edward found a new rhythm to his life.

(8) Once the participants overcame the **initial** **shock** and confusion, the feelings of doubt and insecurity were gradually dispelled.

Interestingly, *presentation*, a neutral collocate, is largely associated with negative contexts in medical situations after looking at the concordance lines.

(9) A photograph at **initial** **presentation** shows post-aural swelling on the left side.

(10) At the **initial** **presentation**, CT through the temporal bone shows the tumor involvement of the right middle…

(11) Local recurrence can occur many years after the **initial** **presentation**, so lifelong follow-up is warranted.

Preliminary

A scrutiny of the collocates of *preliminary* reveals it co-occurs most frequently with neutral terms such as *results, study, analysis, data, analyses, findings, investigation, evidence,* followed by reporting verbs like *suggest(s), indicate(s), report* used in neutral contexts.

(1) Our **results** offer **preliminary** evidence to support this hypothesis.

(2) Given the moderate sample size, these **preliminary** **findings** should be interpreted cautiously.

(3) In effect, this article provides social workers with a **preliminary** **assessment** " toolbox.

(4) Thus, these studies generate **preliminary** **evidence** that indexical information may also inform recognition of artificially degraded speech.

The verbs collocating with *preliminary* function as reporting and generalizing the results derived from some specific findings.

(5) At best, these **preliminary** exchanges **suggest** appropriate parameters for subsequent negotiations.

(6) **Preliminary** test data **indicates** that it will meet metal and other and application standards.

Even the apparently negative collocate, *injunction,* turns out to be neutral legal jargon; all instances of *preliminary injunction* are of the form:

(7) On Sept 4, a federal appeals court suspended a **preliminary** **injunction** that halted NIH in-house research.

(8) …the three federal judges in Philadelphia granted the request for a **preliminary** **injunction** against the CDA.

Investigation, which collocates with both *initial* and *preliminary*, appears to be a word that can be used interchangeably in educational, medical and legal contexts. However, there is a tendency that *initial investigation* appears more frequently in science texts, whereas *preliminary investigation* occurs mostly in social science texts. Out of the 60 occurrences of *initial investigation*, 28 (46.6%) of them appear in science texts, but there are only 11 occurrences of *preliminary investigation* out of 104 (10.6%) in science texts.

(9) No measurements are taken during the initial **investigation** (Environmental Health).

(10) The best **initial** **investigation** in patients with thunderclap headache is emergency computed tomography (Medicine).

(11) As a present precursor, we began with a **preliminary** **investigation** of General Psychology textbooks (Educational Psychology).

(12) Yet such unlikely possibilities should not justify emasculating the **preliminary** **investigation** at the Justice Department level (MichLaw).

Step is another word collocating with both *initial (134)* and *preliminary (27),* but there is not an obvious distinction between its usage across the contexts despite their different frequencies.

(13) The **initial step** is to describe the problem and thoroughly analyze it.

(14) The **initial step** in the planning process was to secure funding for the youth assembly.

(15) For young people born and raised in a video age, a **preliminary step** in learning to listen musically is sharpening their awareness of their sonic environment.

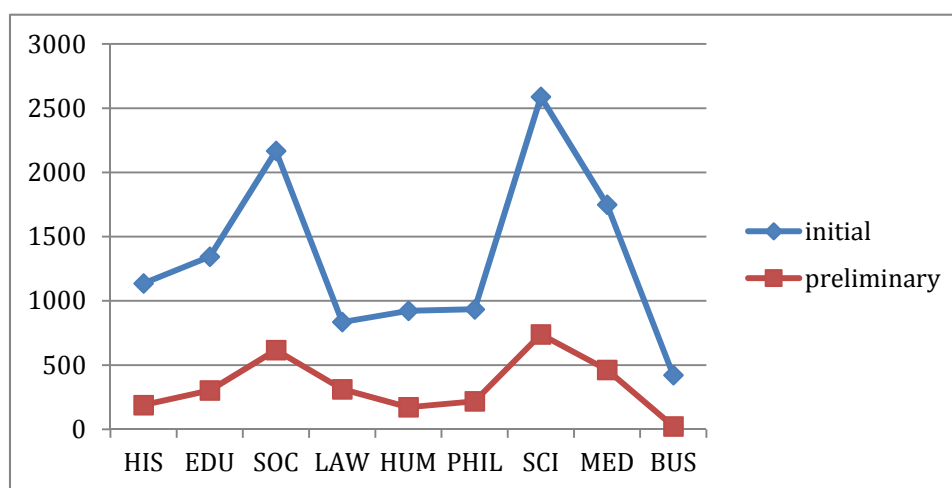(16) The effort reported here can be considered a **preliminary step** in acquiring such an instrument.

Discussion

Synonyms *initial* and *preliminary* both indicate the early state of some circumstances. After the observation of their collocates, the difference found between them is whether the modified nouns are with distinguishable steps/stages or not. *Initial* is collocated with *stages*, *step*, *stage* and *phase* in high frequencies while *preliminary* is with nouns as *results, study, analysis, data, analyses, findings, investigation, evidence, report, assessment, injunction, hearing* and *version*. Apparently, *preliminary* tends to be used to present a sketch of the modified items (*results, studies, analysis, investigation, assessment*), which would be refined and finalized in the future, whereas *initial* emphasizes something to be done with specific stages. However, there are still two collocates (i.e., *investigation* and *step*) that could be used interchangeably with *initial* and *preliminary*.

Regarding the distribution of *initial* and *preliminary* shown in different academic fields, *initial* tends to have a higher frequency than *preliminary* does across different academic disciplines.

Table 3. Frequency counts of the top 20 collocates for initial and preliminary across the nine academic fields in COCA

	HIS	EDU	SOC	LAW	HUM	PHIL	SCI	MED	BUS
initial	1136	1344	2167	835	922	934	2588	1749	421
preliminary	189	303	617	312	172	218	739	463	23

Figure 1. Frequency distribution of the top 20 collocates for initial and preliminary across the nine academic fields in COCA

Following vs. Subsequent

The analysis looks at the first twenty collocates for each search term. Positive collocates are underlined. Negative collocates are in italics. The number of occurrences in the corpus is given after the word.

Table 4. Top 20 collocates co-occurring with following and subsequent in the academic texts of COCA

following		subsequent	
questions	724	analyses	201
year	636	events	97
include	423	generations	47
included	329	sessions	35
section	277	developments	29
consider	262	elections	28
criteria	218	confirmed	26
sections	216	antecedent	25
examples	211	visits	23
performatted	190	amendments	22
categories	176	editions	20
statement	168	comparisons	20
includes	136	*disruptive*	19
recommendations	134	univariate	18
passage	134	investigations	18
hypotheses	119	revisions	17
comments	117	predictor	17
steps	115	*invasion*	15
statements	114	phases	14
manner	112	follow-ups	13

Following

None of the twenty collocates of *following* are associated with any polarized semantic prosody, neither positive nor negative. It is also observed that *following* shows a preference for concrete nouns consisting of specific sub-components or steps (e.g., *questions, examples, criteria, categories, comment, statement(s), steps*). As may be expected, all sentences are of the sort:

(1) The **following criteria** compose the decision matrix for effectiveness: Twenty-four-hour average concentration.

(2) I fully agree with this clear policy direction as well as with the **following statement** on the last page of the Report.

(3) The **following examples** provide apt illustrations of this process.

(4) The **following comments** illustrate this theme: The preschool services we received were wonderful.

Another feature for *following* is that it is used to show a list right after the items with a colon in most circumstances:

(5) Concepts explored through the semi-structured ***questions*** included the ***following****:* circumstances and emotions surrounding the death of the child; social support available to ….

Include, appearing in its inflected forms (i.e., *included, includes*), is also ranked among the top 20 collocates of *following*.

(6) We **included** the **following** indicators of lifestyle: riding a bike, alcohol consumption, smoking, energy intake.

(7) The new vision of the school counseling profession **includes** the **following** skills: (a) focusing on improving student achievement; collaborating with students…

Subsequent

In terms of the 20 most frequent collocates with *subsequent*, a large majority of them are abstract nouns that are in need of logical arrangement with causality (*e.g., analyses, developments, amendments, comparisons, investigations, revisions, editions*), as in the following sentences. *Developments* and *amendments* appear to suggest a positive prosody, whereas the others tend to be neutral.

(1) **Subsequent developments** have extended this insight in a number of directions,…

(2) This was soon followed by Khomeini's death and a number of **subsequent** constitutional **amendments** and the consolidation of parallel state institutions.

(3) The chairs reviewed this first draft and all **subsequent revisions**.

(4) **Subsequent comparisons** did not; however, reveal any response biases across several relevant subgroups.

Subsequent appears to have two candidates for negative prosody: *disruptive* and *invasion*. *Disruptive* is associated with contexts in Education or Psychology (e.g., School Psychology and Emotional Behaviour Disorder), thus unsurprisingly followed by *behaviour* in all of the 19 sentences.

(5) The most prevalent **subsequent** event for **disruptive** behaviour, on average, was teacher attention delivery.

Invasion, with a negative prosody in itself, also appears in negative contexts (e.g., Foreign Affairs, Arab Studies).

(6) Before the Iraqi **invasion** and the **subsequent** economic boycott, Kuwait and Iraq supplied less than 7% of world oil demand.

(7) Given Japan's colonial role in separating Taiwan from China in 1895 and Japan's **subsequent invasion** of China, Tokyo had long been careful to avoid taking any public posit.

Another category that collocates with *subsequent* is the temporal nouns (e.g., *generations, sessions, phases*) in their plural forms, which is different from the temporal and singular noun of *year* collocating with *following,* for example. In terms of the temporal nouns collocating with *subsequent*, they also appear to suggest either a longer period of time (*e.g., generations*) or a continuous period with a chain of development (*e.g., sessions, phases*) as compared to those co-occurring with *following* (*e.g., year, section(s))*.

(8) Life persists through reproduction, through transmitting accumulated complexity to **subsequent generations**.

(9) Another 11 did not attend the school the **following year**.

(10) During **subsequent phases** (Phase 4 - 8), two fading procedures were implemented.

(11) In the **following** **section** I recommend and detail four social bookmarking websites.

Out of its top 20 collocates with *subsequent*, the only verb is *confirmed*, which is considered to be positive and this proves to be consistent with its noun collocates indicating the features of logical arrangement.

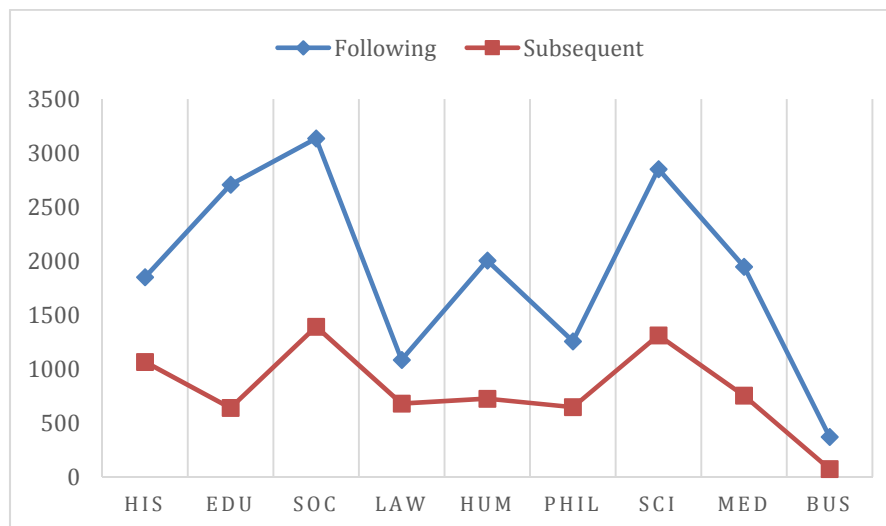(12) A **subsequent** smoke test **confirmed** that ventilation over the pool was improved.

Discussion

An observation of the collocates for *following* reveals that it is collocated frequently with explicit ideas that could be diagnosed on the spot. On the other hand, *subsequent* is collocated more often with complicated processes, concepts or actions, which takes much longer time to be resolved or completed.

Regarding the distribution of *following* and *subsequent*, *following* also appears more frequently than *subsequent* across varying academic sub-fields.

Table 5. Frequency counts of the top 20 collocates for following and subsequent across the nine academic fields in COCA

	HIS	EDU	SOC	LAW	HUM	PHIL	SCI	MED	BUS
Following	1850	2707	3135	1084	2004	1256	2851	1947	371
Subsequent	1065	639	1391	679	724	646	1311	753	73

Figure 2. Frequency distribution of the top 20 collocates for following and subsequent across the nine academic fields in COCA

Sufficient vs. Adequate

The analysis looks at the first twenty collocates for each search term. Positive collocates are underlined. Negative collocates are in italics. The number of occurrences in the corpus is given after the word.

Table 6. Top 20 collocates co-occurring with sufficient and adequate in the academic texts of COCA

sufficient	adequate
provide 235	provide 307
necessary 224	*without* 191
evidence 151	*lack 174*
lack 141	resources 139
resources 120	reliability 123
alone 118	progress 97
condition 110	internal 89
numbers 85	ensure 85
allow 85	providing 84
reason 83	supply 78
cause 79	funding 77
ensure 66	yearly 73
produce 64	preparation 71
meet 61	consistency 70
funds 51	validity 64
lacked 48	receive 60
detail 41	protection 56
establish 41	facilities 49
justify 35	maintain 42
prevent 35	housing 40

Sufficient

A distinct feature for the collocates of *sufficient* reveals that it co-occurs with 9 verbs, 8 nouns, 1 adjective, and 1 adverb, and one others. That is, unlike the previous two adjective pairs whose frequent collocates are nouns mostly, verbs also co-occurs with *sufficient* very often. The noun collocates are those that can be measured in terms of quantity (e.g., *resources, reason, condition, numbers, cause, detail, funds*) in both neutral and negative contexts.

(1) In doing so, we found that there was **sufficient evidence** for only a few subsets of variables.

(2) A necessary and **sufficient condition** for asymptotic stabilizability of continuous-time uncertain switched linear systems.

(3) Mention places where there are not **sufficient resources** to meet curriculum and standards needs.

(4) Finally, though the natural light of **reason** is in principle **sufficient** for philosophical wisdom, sin has obscured that light.

As mentioned above, *sufficient* is collocated frequently with more verbs than nouns. The Collins online dictionary defines *sufficient* as "assuring the truth of a statement; requiring but not necessarily required by some other state of affairs," as evidenced in the following concordance lines. However,

the verbs consist of both positive and negative ones, among the former there are *provide, allow, ensure, produce*, and *establish*, but for the latter are *lack* and *prevent*.

(5) Here we define the properties satisfied by the abstractions and **provide** a **sufficient** condition for the termination of the abstraction procedure.

(6) It is thus critical that published studies contain **sufficient** detail to **allow** their methods to be replicated and their results compared.

(7) The traveller should **ensure** they have a **sufficient** supply of batteries for the flight and any potential delays encountered.

(8) The women work for two to three weeks to **produce** a **sufficient** number of pots to make a firing worthwhile.

(9) The similarities among them are **sufficient** to **establish** them as a composite character, a new masculine hero.

(10) Most of the respondents believed they **lacked** **sufficient** knowledge of the cultural views and beliefs of many LCD parents and families.

(11) The significance of central location is apparent in that they all **lacked** **sufficient** natural resources to support their populations.

(12) The current nuclear security agenda is simply not **sufficient** to **prevent** further nuclear proliferation or to stop terrorists from obtaining fissile material.

(13) By itself, this abnormality is not **sufficient** to **prevent** Fas-mediated apoptosis.

Adequate

Despite four overlapping words (i.e., *provide, lack, ensure, resources*) for both *sufficient* and *adequate*, a sharp contrast between the two is that the latter collocates more often with nouns (12 nouns) than verbs (8 verbs) and vice versa for the former. Apart from *resources* and *facilities*, the 10 nouns are the abstract ones which can be measured only in terms of quality rather than quantity (i.e., *progress, supply, housing, funding, protection, preparation*), mostly in neutral contexts.

(1) Schools are also compared in one school year to determine if a school has made **adequate** yearly **progress**.

(2) For Mexico, ensuring an **adequate** water **supply** has emerged as a critical issue for the coming decades.

(3) Being discharged early may send these patients home without **adequate** educational **preparation** to manage their recovery.

Besides, *adequate* also co-occurs with three research-based terms (*i.e., reliability, consistency, validity*) within neutral contexts across various academic disciplines.

(4) Overall, these results suggest that the ILSDS had *adequate* internal *validity* and *reliability* characteristics in this study (Adolescence).

(5) Internal **consistency** and test-retest **reliability** estimates were **adequate** for research purposes (Psychology).

(6) All outcome measures used in the two recent investigations have demonstrated **adequate** reliability and **validity** (EnvironHealth).

Two negative collocates, *without* and *lack*, inevitably indicate a state of shortage.

(7) The **lack** of **adequate** individual exposure measures has been the most limiting factor in the NER design.

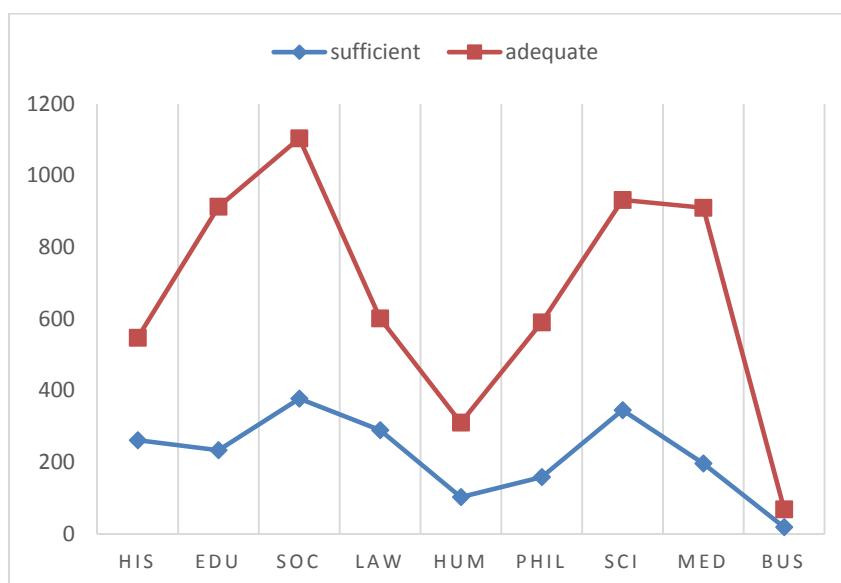(8) Making students read texts **without** an **adequate** vocabulary induces frustration and defeatism.

Discussion

The observation of the concordance lines reveals that both *sufficient* and *adequate* collocate with concrete nouns that can be measured in terms of quantity. However, *adequate* can also collocate with abstract nouns in terms of their quality only. Furthermore, something adequate is just close to or even a bit beyond the satisfactory level. This means something is adequate if its exactly equal to requirement whereas sufficiency means something is a bit more than what is needed. On the other hand, there are 4 shared collocates between *sufficient* and *adequate*, indicating that there is a higher degree of collocational overlap as compared to the other two pairs (i.e., *initial* vs. *preliminary*, *following* vs. *subsequent*). Moreover, a sharp contrast between this pair and the other two pairs is that *sufficient* and *adequate* are both associated with more positive and negative collocates, whereas the other two pairs co-occur more frequently with neutral collocates.

Regarding the frequency distribution for both items in different academic fields, *sufficient* shows lower frequencies across all the academic disciplines as compared to those of *adequate*.

Table 7. Frequency counts of the top 20 collocates for sufficient and adequate across the nine academic fields in COCA

	HIS	EDU	SOC	LAW	HUM	PHIL	SCI	MED	BUS
sufficient	261	233	377	289	102	158	345	196	18
adequate	547	913	1104	601	310	590	932	910	68

Figure 3. Frequency distribution of the top 20 collocates for sufficient and adequate across the nine academic fields in COCA

4. Conclusions

This study explored the patterns of three synonymous adjective pairs by examining their semantic preference and semantic prosody within the academic texts of COCA. Major findings and implications are summarized and discussed below.

First, the analyses of concordance lines suggest that a word may be associated with more than one group of semantic features and thus designating different prosodies, as supported in the study of Wei

and Li (2013). The specific semantic prosody of a word cannot be accurately detected until its collocates are carefully scrutinized in the context. An apparently negative collocate might indicate a positive connotation (e.g., *initial shock*) within the context. Foreign academic writers in varying sub-fields should be aware that most synonyms are not interchangeable and thus the different semantic patterns have to be detected prior to employing them in a professional text.

Second, the findings suggest that the three synonymous adjective pairs in this study justify a large percentage of neutral semantic prosody in the academic texts. The result is predictable as academic registers tend to suppress, or at least to obscure, strong emotional connotation, for neutralizing the texts. Thus it seems that extremely polarized collocations will be relatively infrequent, regardless of a word's 'real world' connotations. Future studies could also examine in more specific details how each pair scatters across different academic disciplines. The synonyms could be compared in other registers (e.g., newspapers, magazines) to discover their different distributional patterns as well.

This study only looked at the evaluative/attitudinal meanings with the three adjective pairs, and researchers could also examine the functional and structural variations with the synonymous pairs. For instance, the colligation (i.e., the grammatical sentence structure) in association with the word's collocations can be inspected and analyzed altogether to identify the varying patterns between the pairs. Finally, some cross-linguistic comparisons could be done to examine the synonymous pairs along with their corresponding items to diagnose some clear-cut distinctions across different languages.

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COCA'da bulunan eş anlamlı üç sıfat çiftinin semantik prozodi açısından incelenmesi

Öz

Sinclair (1991) "sözcükler ve cümlelerin pek çok kullanımı, belirli bir semantik çevrede oluşmaya meyillidir." düşüncesini ortaya atmasından itibaren geçen son yirmi yılda semantik prozodi kavramı araştırmacıların oldukça ilgisini çekmektedir (s.112). Ayrıca, Sinclair (2003) semantik prozodinin pragmatik ve tutumsal anlamlarıiçerdiğini de belirtmiştir. 'Semantik prozodi' kavramını ilk kez tanıtan Louw (1993), bir sözcüğün tekrarlanan eşdizimlerinin, sözcüğün temasının semantik tutarlılığı yoluyla oluştuğunu iddia etmektedir. Bu yüzden, semantik prozodi, dil edinimi araştırmalarında yer alan eşdizim öğrenimi konusuyla yakından ilgilidir. Eşdizim öğrenimi konusunda, yakın anlamlı sözcükler pek çok yabancı dil öğrenen kişi için zorluk teşkil etmektedir çünkü bu sözcüklerin benzer denotasyenel anlamları olmasına rağmen birbirleriyle değiştirilemeyen semantik prozodileri bulunmaktadır (Xiao & McEnery, 2006). Derlem odaklı bu çalışma, COCA'da bulunan akademik kelimelerden seçilmiş eş anlamlı üç sıfat çifti ile semantik tercihler ve semantic prozodiyi karşılaştırmaktadır (Gardner & Davies, 2013). Sıfat iiftleri şu kriterlere dayanarak seçilmiştir :a) sözcüklerin anlamları Collins Thesaurus Online sözlüğe bakılarak kontrol edilmiştir, b) birden fazla anlamı olan sözcükler çalışmaya alınmamıştır; c) bir cümlede birden fazla öge olarak kullanılabilecek sözcük, kendisinin eşleştiği sözcük olarak tanımlanmıştır. Tüm işlemler ikisi sağ ve ikisi sola 4 sözcük genişliğinde manüel olarak incelenmiştir. Tartışma ve sonuçları belirtilmiştir.

Anahtar sözcükler: Semandik prozodi, eşdizim öğrenme, eş anlamlı kelime çiftleri, COCA, derlem çalışması

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