

## A CORPUS-BASED STUDY ON THE SEMANTIC PROSODY OF CHALLENGE

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### ABSTRACT

CHALLENGE is generally perceived as a negative word synonymous with *dispute*, *defy*, *confrontation*, and *contest*. However, when resorting to dictionary definitions, CHALLENGE has unexpectedly been found to possess positive senses such as ‘stimulating’ and ‘arousing competitive interest, thought, or action’. This study aimed to investigate how CHALLENGE, identified as having pleasant senses yet often categorized with negative words, interacts with neighboring words to achieve particular meanings. The semantic prosody of CHALLENGE as a verb and a noun in four grammatical relations was investigated by analyzing data from ukWaC, a web-based corpus containing approximately 1.5 million words. Two target units were analyzed: collocates with CHALLENGE and broad units (longer sequences) with CHALLENGE. The results showed that, in addition to the unpleasant prosody describing the intensity of difficulty or causing and meeting trouble (e.g., *pose a huge challenge*, *face a tremendous challenge*), CHALLENGE expressed positive prosody (e.g., *set a simple challenge*, *ready to meet a challenge*, *bring an exciting challenge*). Moreover, evidence was uncovered indicating that the semantic prosody of a particular syntactic structure in broad units is distinctive. For example, [CHALLENGE N.] had a more favorable prosody, such as ‘needing or desiring to challenge unfair/unreasonable ideas’, while [ADJ. CHALLENGE] tended to occur in an unpleasant environment that suggested ‘causing or suffering from an extremely undesirable situation’. In summary, the present study showed that although CHALLENGE was found in the same category of words possessing negative senses, its prosody could be positive. These findings have renewed our understanding of CHALLENGE, illustrating how CHALLENGE acquires positive or negative associations through its collocational environment. Pedagogic-wise, the findings herein can serve as a base for language instructors to design teaching materials and to help EFL/ESL learners avoid making overgeneralizations in their use of semantic prosody.

**Key Words:** semantic prosody, grammatical relation, corpus, collocation

## INTRODUCTION

In general, CHALLENGE<sup>1</sup> is perceived as a word with strong negative meanings. According to the *Merriam-Webster Online Thesaurus* (2015) and the *Collins English Thesaurus* (online) (n.d.), CHALLENGE is synonymous with *dispute*, *defy*, *confrontation*, and *contest*, all of which have negative meanings—‘disagreeing or arguing with someone’. On the other hand, a preliminary observation of dictionary definitions showed that CHALLENGE is a polysemous word with both favorable and unfavorable meanings. In the *Longman Dictionary of Contemporary English* (online) (n.d.), CHALLENGE as a verb carries both favorable and unfavorable meanings, as illustrated in the following two examples:

- (1) *This will allow you to go further and challenge yourself to the creative level.*
- (2) *Viewpoints such as these are strongly challenged by environmentalists.*

In (1), the phrases *allow you to go further* and *to the creative level* have positive denotations, and their co-occurrences with *challenge* suggest that the action of stimulating someone by presenting him/her with difficulties is desirable. Under this context, CHALLENGE has a favorable sense, which is ‘to test somebody’s abilities or skills, especially by making him/her interested in something’. In contrast, (2) seems to have a more negative meaning, describing that the environmentalists oppose the viewpoints being proposed. An unfavorable sense of CHALLENGE—‘to refuse to accept that something is right, fair, or legal’ can be found in this sentence. As stated in the *Oxford Collocations Dictionary for Students of English* (McIntosh, Francis, & Poole, 2003), “the precise meaning of a word in any context can be determined by that context: by the words that surround and combine with the core word” (p. vii). Based on the observations above, the nature of CHALLENGE appears to be full of complexity, as the neighboring words have a great impact on the identification of whether the meaning of CHALLENGE is favorable or not. To give a clearer picture of how CHALLENGE interacts with surrounding words to portray a positive or negative

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<sup>1</sup> Throughout this paper, the lemma of a word is capitalized. A lemma is usually considered the base or uninflected word form (Biber et al., 1998). For example, the word forms *challenge*, *challenges*, *challenging*, and *challenged* are conventionally lemmatized into the lemma CHALLENGE.

meaning, it is essential to uncover the regularities in the words surrounding CHALLENGE. As such, this study will investigate the semantic prosody of CHALLENGE by inspecting the phraseology of its collocation. The analysis will take into consideration the tendency of words, and groups of words, to co-select more frequently in some environments than in others to achieve meanings (Hunston, 2011, p. 65). Moreover, this study intends to distinguish under what conditions CHALLENGE is used positively or negatively. In the following section, previous studies on semantic prosody will be reviewed.

#### Semantic Prosody

Traditionally, semantic prosody is viewed as a feature of a word (Louw, 1993). The node word which habitually occurs with collocates that have consistently pleasant or unpleasant meanings can be described as 'X has favorable or unfavorable semantic prosody'. Here, collocates refer to words that occur within a span of one to two words to the left or right of the node word. As Louw (1993) put it, the given expression is "imbued by its collocates" with "a consistent aura of meaning" (p. 157). Metaphorically speaking, one takes on the color of one's company—the lexical item does not appear to have an affective meaning until it is in the context of its typical collocates. To be specific, the node word with a preference for negative or positive collocates can acquire negative or positive connotations/evaluative meanings. SET IN, as one of the classic examples of semantic prosody, has been found to have negative prosody because the subjects it habitually associates with tend to refer to unpleasant events, including *decay*, *prejudice*, *anarchy*, and *slump* (Sinclair, 1987). Partington (2004) exemplified that *totally* possesses negative prosody due to its preference for collocates with the unfavorable sense of 'absence' or 'lack of' (e.g., *exempt*, *irrelevant*, *lost*, *oblivious*). Similarly, CAUSE usually co-occurs with nouns indicating negative evaluation, such as *illness* and *disaster*, and is thus identified as having a strong negative prosody (Stubbs, 1996). The concept of semantic prosody as a feature of a word suggests that when a word itself becomes so tainted by its typically negative/positive collocates, it begins to connote in isolation (Channell, 2000, p. 50), namely, people spontaneously attach pleasing or unpleasing emotional connections to the node word because it consistently co-occurs with negative or positive collocates.

Although a favorable or unfavorable connotation can be ascribed to a

word as it regularly occurs with positive or negative collocates, it should be noted that a polysemous word may have more than one form of semantic prosody (Bublitz, 1996; Louw, 1993). For instance, when COMMIT denotes ‘perpetrate’, its frequent co-occurrence with unpleasant things (e.g., *adultery*, *offence*, *crime*) usually results in negative prosody; however, when COMMIT means promising to do something, more pleasant collocates (e.g., *productivity*, *modernization*) and favorable prosody are discovered (Bublitz, 1996). Bednarek’s (2008) analysis of SHORT-SIGHTED also exemplified this dichotomy. He found that when SHORT-SIGHTED occurred in its literal meaning—‘the inability to see things properly as they are far away’, it was likely to be linked with collocates related to seeing (e.g., *blink*, *eyes*, *peer*), creating a more or less neutral prosody. However, in the metaphorical sense of not being able to make appropriate judgments about the future, SHORT-SIGHTED was often used negatively, occurring mainly with negative adjectives (e.g., *selfish*, *narrow-minded*) to indicate disapproval of views or opinions. As these examples suggest, the semantic prosody of a polysemous word can vary from sense to sense.

Observing the cases of semantic prosody in previous studies, it can be inferred that identifying semantic prosody through collocates seems more feasible for words with neutral meanings, like ‘happening’ (HAPPEN, SET IN), ‘doing’ (COMMIT), and ‘completely’ (UTTERLY, ABSOLUTELY), but this is not always applicable for words with clear positive or negative meanings. For example, based on McGee’s (2012) observation, although ALLEVIATE, which is considered positive in meaning, occurs frequently with unfavorable words like *suffering*, the overall connotation of ‘the relief of suffering’ is highly favorable. Similar examples include verbs such as HEAL, EASE, SOLVE, and RELIEVE (Whitsitt, 2005), as they habitually co-occur with words indicating undesirable things or state of affairs; however, their semantic prosody is rather positive. These examples confirm Bednarek’s (2008) point of view that “it is important to distinguish between the nature of collocates (negative/ positive collocates) and the connotation of a lexical item (negative/positive prosody)” (p. 130). In spite of the fact that these examples tend to be found with unfavorable collocates, their associated connotations are not unpleasant. Therefore, it is crucial that attributing favorable or unfavorable semantic prosody to a word should involve not only the “color” of the collocates but also the nature of the node word (i.e., whether it is favorable or not) and its interaction with the collocates.

With growing attention to the interaction between the node word and its collocates, a number of scholars have treated semantic prosody at the discourse level and have defined it as context-dependent (see Hunston, 2007; Morley & Partington, 2009). It has been proposed that even though some lexical items have a stronger positive or negative prosody, it does not follow that their prosodic meaning is consistent all the time. Hunston (2007, p. 254-256), for example, has suggested that whether the adjective PERSISTENT is interpreted as good or bad depends entirely on the other items in the environment. When followed by a noun, PERSISTENT co-occurs consistently with items that are evaluatively negative (e.g., *persistent opposition/paradox/drug users*) to express unfavorable meanings; however, when PERSISTENT is used predicatively, the associated meanings are not always negative, as can be seen in Example (3) below:

- (3) *But she is so persistent, that Beth—that they end up—they have a real break, a very good conversation about religion and about death, they are communicating.*

In this case, PERSISTENT is used positively to describe a person with a strong desire to continue to do something difficult. Other studies have shown that semantic prosody resides at the level of constructions. For example, Smith and Nordquist (2012) found that the associative meaning for the construction [*cause for NP*<sup>2</sup>] was sometimes positive (e.g., *a cause for joy/celebration/merriment*), whereas the construction [*cause of NP*] usually carried negative prosody (e.g., *a cause of cancer/the accident*). As can be seen, semantic prosody of a word may change along with the context (i.e., grammatical structures or phrase constructions), and it is more akin to collocational connotation than to individual word connotation.

Sinclair (1996, 2004), as one of the advocates who has supported the view that semantic prosody can be altered depending on the node word and its co-text, has affirmed the value of a broad unit of meaning in exploring semantic prosody. A broad unit of meaning includes not only collocates but also neighboring words, with a span of over five words preceding or after the node word. Unlike other scholars who tended to limit their searches to a span of no more than two collocates to the left or right of the node word to suggest prosody, Sinclair held that the

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<sup>2</sup> Here, the abbreviation NP stands for “noun phrase”.

investigation of a longer unit would help identify semantic prosody more precisely. In determining the semantic prosody of a broad unit with the node word, the dichotomy of pleasant (favorable) and unpleasant (unfavorable) was not adopted; instead, Sinclair analyzed the consistent discourse function of the unit of meaning. For Sinclair, semantic prosody has attitudinal and pragmatic functions constituting the speaker's reason for making the utterance. In 1996, he showed that TRUE FEELINGS has a semantic prosody of 'reluctance' on account of co-occurrences such as *will never reveal*, *prevent me from expressing*, and *less open about showing*. In this case, semantic prosody belongs to the entire unit of meaning—the sequences with three to four words as shown. BUDGE, another example from Sinclair (2004, p. 142-147), was found to have two different semantic prosodies, 'fail to realize something' and 'not willing to do something', in frequently occurring sequences such as *were unable to budge* and *refused to budge*. Hunston (2007, p. 258) added that if these two sequences of BUDGE are preceded by a first person pronoun (e.g., *...we will not budge...*), they consistently express an attitude of determination in the face of opposition rather than difficulty or frustration. The term "semantic prosody" in this sense refers to the complex attitudinal meaning of the broad unit, not just positive and negative evaluative meanings. An investigation of the units with HARNESS (Hunston, 2002, p. 61) showed that it is related to the prosody of 'the harnessing has yet to be done' or 'the harnessing may or may not be done'. The base forms contribute much to tense forms in the future (e.g., *they will harness*) and the conditional (e.g., *they would(n't) harness*), as well as to interrogative structures in the present and past tenses (e.g., *do they harness? they didn't harness*). These instances show that the semantic prosody conveyed can be much more complex than a simple distinction between pleasant/favorable and unpleasant/unfavorable. In a similar vein, Bednarek (2006, p. 113) indicated that "there are many semantic prosodies that do not relate to '(un)pleasantness,'" and that evaluation is much more multifaceted. By means of investigating the attitudinal meaning (other than favorable or unfavorable) of a broad unit as Sinclair has suggested, how a node word combines with common neighboring words regularly to form consistent prosody can be revealed.

Based on a review of the important concepts of semantic prosody presented in this section, in general, semantic prosody refers to a tendency for a node word to occur with particular sets of words to convey favorable or unfavorable meanings. Some have argued that

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semantic prosody is a feature of a word: the node word habitually occurs with pleasant or unpleasant collocates and gradually takes on positive or negative connotations (e.g. Bublitz, 1996; Louw, 1993). Others have contended that semantic prosody is a discourse feature, suggesting that, in addition to collocates, factors such as grammatical relations or phrase constructions can also influence the judgment of whether the prosody is pleasant/unpleasant (e.g. Hunston, 2007; Morley & Partington, 2009). Sinclair (2004) further proposed the idea of “unit of meaning.” He indicated that a long sequence consisting of the node word and three to four neighboring words to its right and left as co-text is an ideal unit with which to explore semantic prosody, as the attitudinal meaning of the broad unit is far beyond the distinction between a favorable or unfavorable meaning. In sum, the identification of semantic prosody is full of complexity and is not always straightforward. Regarding the current research, the following section will present what standpoint was taken as the basis for analyzing the semantic prosody of CHALLENGE.

### **The Purpose and Significance of This Study**

Instead of treating the two perspectives of semantic prosody (i.e., a feature of a node word and a feature of discourse) as contradictions to each other, we will define them as two different levels of observation, both of which are believed to facilitate the understanding of the particular context in which CHALLENGE operates. Therefore, this study will examine the semantic prosody of CHALLENGE from two levels of units: (1) collocations; and (2) longer sequences of words surrounding the node word. Louw’s (2000) view, that semantic prosody is established through the proximity of a consistent series of positive or negative collocates, supports the importance of classifying the characteristics of collocates, which is regarded as the initial step in identifying the semantic prosody of CHALLENGE. The semantic prosody deduced from collocates will then be contrasted with that from the longer sequences of words surrounding CHALLENGE, seeking to see whether there is any consistency between them in terms of positive and negative meanings. While the two units may reveal different pictures of how CHALLENGE acts in context, the information obtained will supplement each unit. In the condition that the semantic prosody of CHALLENGE across the two units is invariably favorable or unfavorable, the analysis of the longer sequences will function as a reconfirmation that CHALLENGE is a word

with strong (favorable/unfavorable) semantic prosody. On the other hand, if a contradiction or difference occurs, the longer sequences can serve as evidence that a variation in discourse matters greatly. All in all, the inspection of both units can shed more light on how CHALLENGE achieves meanings with surrounding environments. Through classifying the collocates, the association between the node word and (un)pleasant connotations can be revealed. In addition, a detailed description of the attitudinal functions of the broad units will serve to display the prosody involving both the meaning of the node word and the co-text.

Focusing on two levels of units, this study will further explore the semantic prosody of CHALLENGE in different parts of speech and see how they could be distinguished from one another. To date, it appears that far less attention has been paid to compare the semantic prosody of a word in different parts of speech. As O'Halloran (2007) has pointed out, when a word occurs in different parts of speech, it may have a distinct preference for collocates. We hypothesize that the inspection of particular collocates may help us identify the differences in semantic prosody across word classes. Since grammatical relations have been found to have a great impact on semantic prosody, the present study will specifically examine four grammatical relations of CHALLENGE.

The significance of this study is threefold. First, it will uncover the mechanisms of semantic prosody with a systematic analysis of two levels of units in a sentence. Second, in terms of the units with collocates, the investigation of CHALLENGE may help clarify the distinction between the nature of collocates (negative/positive collocates) and the connotation of a lexical item (negative/positive prosody). As suggested in Section 1.1., identifying the semantic prosody of words with negative or positive meanings cannot rely on collocates alone, as a negative word can have positive prosody and vice versa. The discussion about the interaction between CHALLENGE, a word with both favorable and unfavorable meanings, and its collocates can elucidate differences in semantic prosody. Finally, the multiple comparisons of the semantic prosody of CHALLENGE between different units, parts of speech, grammatical relations, and groups of collocates will reveal how and to what extent these factors are involved in the constitution of positive or negative prosody. To sum up, this study will cover three important aspects of semantic prosody that have not yet been discussed in detail in previous studies.

A corpus-based methodology will be employed in the present study.

This approach helps researchers reduce bias (Biber, Connor, & Upton, 2007), and quantitative counts permit the discussion of a general trend. As Baker (2006) has noted, “overall patterns and trends are more likely to show through when we are looking at dozens of texts in a corpus rather than just one or two ‘selected’ texts” (p. 12). Moreover, the corpus contains a large number of concordances, which will allow us to directly observe lexical environments. By concordancing, the syntactic relation between the node word and the environment will certainly be highlighted, which will shed light on the interaction between the node word (CHALLENGE), collocations, co-texts, and syntactic structures.

#### **The Organization of This Paper**

In the following sections, the methods for retrieving data from the corpus and the procedures for identifying semantic prosody will first be presented, followed by an in-depth report of how CHALLENGE achieves positive/negative meanings with its frequent collocates and other words nearby. Finally, the major findings and important implications will be discussed.

#### **METHODOLOGY**

In this section, the corpus adopted in this study and the tools employed to retrieve the data will be introduced first, followed by the grammatical relations that will be examined. The next part will deal with the procedure for identifying the semantic prosody of CHALLENGE, and the categorization of collocates into sense groups will be presented. The criterion for determining the semantic prosody of CHALLENGE in each grammatical relation will also be discussed. Finally, all the meanings of CHALLENGE cited from the *Longman Dictionary of Contemporary English* (online) will be displayed as reference for identifying the core sense of CHALLENGE in different parts of speech.

All data were generated by one corpus query tool, Sketch Engine with ukWaC<sup>3</sup> (UK Web Archiving Consortium). There are approximately 1.5 million words in ukWaC, a large British English corpus consisting of texts related to the web, education, and public issues.

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<sup>3</sup> ukWaC: [https://beta.sketchengine.co.uk/bonito/run.cgi/first\\_form?corpname=preloaded/ukwac3](https://beta.sketchengine.co.uk/bonito/run.cgi/first_form?corpname=preloaded/ukwac3)

As such, we predicted that CHALLENGE, often used to denote ‘testing someone’s ability’ or ‘refusing the legitimacy of something’, would occur frequently in the contexts associated with sociopolitical issues. By means of ukWaC, we observed data specifically related to politics, the economy, public institutions, and so on. Word Sketch, one function of Sketch Engine that helps generate lists of grammatical relations (e.g., object, subject, etc.) of the query term, was also used. Figure 1 below demonstrates the query page of Word Sketch:

Home | Concordance | Word List | **Word Sketch** | Thesaurus | Sketch-Diff

**Word Sketch Entry Form**

Corpus: ukWaC  
Lemma: challenge  
Part of speech: noun

Advanced options

Subcorpus: [create new](#)  
Sort grammatical relations:   
Minimum frequency: auto  
Minimum salience: 0.0  
Maximum number of items in a grammatical relation: 25  
Sort collocations according to:  Salience  Raw frequency  
Cluster collocations:   
Minimum similarity between cluster items: 0.15

Show Word Sketch Save Options

Figure 1. The interface of Word Sketch

After keying in CHALLENGE as the lemma (the base form of a word) for the search and assigning a part of speech to it, the interface returned one-page corpus-derived summaries of grammatical and collocational behaviors (see Figure 2 below for an example).

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challenge ukWaC freq = 149638									
object of	59290 3.1	and/or	19237 1.1	predicate	3227 6.1	DP to-i	7244 3.6	pp for-i	6314 3.4
face	5629 9.53	opportunity	2407 7.03	poverty	15 2.31	orthodoxy	31 6.39	golfer	30 6.05
pose	2214 9.49	reward	148 6.31	crisis	9 1.63	legality	26 6.29	policy-maker	15 5.65
meet	4994 8.53	excitement	113 6.29	change	64 1.41	golfer	35 6.19	policy-maker	12 5.2
present	2843 8.36	obstacle	73 5.67	infrastructure	8 1.34	hegemony	22 5.95	educator	28 5.1
address	1548 7.87	threat	202 5.57	environment	27 0.93	validity	33 5.46	future	293 4.68
overcome	652 7.76	dilemma	54 5.55	challenge	12 0.83	quo	15 5.33	millennium	19 4.42
tackle	672 7.4	complexity	75 5.32	future	12 0.62	supremacy	15 5.33	librarian	13 4.14
mount	524 7.32	adventure	95 5.26	competition	10 0.61	lawfulness	9 5.26	designer	50 4.01
relish	304 7.3	joy	75 5.23	economy	9 0.56	unionism	13 5.23	translator	9 3.95
enjoy	932 6.73	pitfall	28 5.09	race	9 0.36	chiel	9 4.77	planner	15 3.87
confront	235 6.65	difficulty	211 5.0	funding	9 0.28	masculinity	8 4.62	promotion	32 3.5
accept	666 6.53	stimulation	31 5.0			dominance	13 4.57	maker	29 3.41
represent	584 6.06	puzzle	46 4.97			capitalism	25 4.51	honour	15 3.23
issue	291 6.02	encouragement	38 4.9			assumption	44 4.45	NHS	42 3.18
highlight	293 6.0	scrutiny	36 4.76			sovereignty	12 4.22	researcher	34 3.06
associate	283 5.82	enjoyment	34 4.62			jurisdiction	20 4.14	Christian	18 3.04
solve	200 5.75	thrill	19 4.6			notion	27 4.11	regulator	10 3.02
outline	176 5.65	prospect	61 4.57			domination	9 4.07	provider	47 2.89
embrace	128 5.56	setback	18 4.56			legitimacy	8 4.01	developer	19 2.89

Figure 2. A sample of the summary of the most common collocations of CHALLENGE in different grammatical relations

As can be seen in Figure 2, this page shows the frequently occurring collocates with CHALLENGE as a noun in various grammatical relations and constructions. For example, the first list on the left illustrates the verbs that take CHALLENGE as an object, and the second list presents the nouns co-appearing with CHALLENGE by *and/or* coordination. The collocates are ranked by their scores of saliency, which represents the significance of the word in a particular relation.

In the present study, the researchers specifically focused on the top 40 collocates in the following four grammatical relations of CHALLENGE:

- (4) a. The nouns following the verb CHALLENGE (abbreviated as CHALLENGE(v.) + N.)
- b. The nouns preceding the verb CHALLENGE (abbreviated as N. + CHALLENGE(v.))
- c. The verbs preceding the noun CHALLENGE (abbreviated as V. + CHALLENGE(n.))
- d. The adjectives preceding the noun CHALLENGE (abbreviated as ADJ. + CHALLENGE(n.)).

These four relations are the most common ones for CHALLENGE as a noun and a verb. The total frequency of their occurrences is listed in Table 1 below:

Table 1

*The Main Grammatical Relations Investigated in the Present Study*

Grammatical Relations	POS*	Raw Frequency	Frequency per Million
1. CHALLENGE N.	V.	38,423	24.6
2. N. CHALLENGE	V.	13,906	8.9
3. V. CHALLENGE	N.	59,840	38.4
4. ADJ. CHALLENGE	N.	73,151	46.9

Note. \*POS = Part of Speech.

As mentioned in Section 1.2, the semantic prosody of CHALLENGE in each grammatical relation was identified with two aspects: (1) collocates; and (2) broad units. We began with the analysis of collocates. Table 2 below shows the accumulated frequency of the top 40 collocates in the four grammatical relations:

Table 2

*The Accumulated Frequency of the Top 40 Collocates in the Four Grammatical Relations*

Grammatical Relations	POS*	Raw Frequency
1. CHALLENGE N.	V.	7,148
2. N. CHALLENGE	V.	642
3. V. CHALLENGE	N.	28,995
4. ADJ. CHALLENGE	N.	29,895

Note. \*POS = Part of Speech.

As can be seen, the top 40 collocates for CHALLENGE as a noun outnumber those for CHALLENGE as a verb. The following steps were carried out for collocate analysis. First, the top 40 collocates in each grammatical relation were categorized into different groups based on their shared senses. For instance, lexical items such as *stereotype*, *preconception*, and *prejudice* were tagged as members of the ‘bias or unfair judgement about someone or something’ group. The researchers consulted several dictionaries and generated the sense category names manually. After the top 40 collocates were classified, the accumulated frequency of each group was counted and converted into a percentage.

Through comparing the percentage of each group, CHALLENGE's preference for particular sets of words was revealed. The next step was to determine the semantic prosody of CHALLENGE. The interaction between CHALLENGE and the collocates from the top sense groups, which accounted for over 50% of total occurrences, was examined to see if their combinations showed a clear tendency for favorable or unfavorable prosody. It should be noted that we distinguished positive/negative collocates from positive/negative prosody, which means that even though we found that CHALLENGE occurred frequently with nouns which had unpleasant meanings, such as *preconception*, *prejudice*, and *discrimination*, we did not label these combinations as having negative prosody. In fact, challenging unproved beliefs or unfair judgments should be assigned favorable prosody.

Besides collocates, broad units were also taken into consideration. We applied Sinclair's (1996) notion of unit of meaning and treated semantic prosody as the feature of the node word and its co-text. In the concordance lines, the immediate co-text of CHALLENGE of around a 6:6 span (i.e., six words to the right and six words to the left of the node word) was treated as the target unit for analysis (see Example (5) below).

(5) ... *is surprising how many do not **challenge** their basic assumptions about the use of ...*

As Stewart (2010) suggested, the notions of co-occurrence and co-selection within the domain of semantic prosody basically correspond to co-occurrence and co-selection within a span of five or six words to the left and five or six words to the right because the text to the left and right of this window appears to lie outside semantic prosody's remit (p. 108).

To avoid causing readers confusion in the following discussion, we redefined the three terms about collocation as follows:

- (6) a. Collocate: this specifically refers to the noun, verb, or adjective serving as a subject, object, or modifier and so on in the four grammatical relations in Table 1.  
b. Co-text: this refers to the 6:6 span of words surrounding CHALLENGE.  
c. Neighboring words/co-occurrence of CHALLENGE/words surrounding CHALLENGE: this refers to words other than a collocate but near CHALLENGE within the span of 6:6.

When scanning each of the concordance lines, we evaluated the meaning of any collocates and its combination with other co-occurrences of CHALLENGE. Different from previous studies, the favorable/unfavorable dichotomy was also employed to label the attitudinal meaning of a broad unit. Consider Example (7) below:

- (7) a. ...*lower duty to support individuals seeking to challenge discrimination than currently applies*,...  
b. ...*and to help prepare young people to challenge discrimination and prejudice and promote*...

In both (7a) and (7b), the collocate *discrimination* is negative, while the action of challenging discrimination is admirable. Moreover, the verb phrases *seeking to* and *to help prepare* interact with CHALLENGE to show a more pleasant attitudinal meaning—‘intending to/planning to dispute something unfair or unreasonable’—thereby identifying CHALLENGE as having positive prosody.

As mentioned before, CHALLENGE is a polysemous word. To prevent the possible difficulty in interpreting its meaning in the concordance lines, the senses of CHALLENGE from the *Longman Dictionary of Contemporary English* (online) listed in Table 3 below were needed. Only the senses of CHALLENGE as a noun and a verb are shown.

Although in most cases the co-text of CHALLENGE facilitated the identification of its meaning, the definitions from the dictionary served as another means of verification. With more understanding of the exact meaning of CHALLENGE, as well as its association with the surrounding environment, its (un)favorable semantic prosody could be discovered.

Table 3

*The Core Senses of CHALLENGE*

Core Senses of CHALLENGE as a Verb	
1.	To refuse to accept something is right or fair Ex. <i>They went to the High Court to <b>challenge</b> the decision.</i>
2.	To invite someone to compete or fight against you Ex. <i>After lunch Carey <b>challenged</b> me to a game of tennis.</i>
3.	To test the skills or abilities of someone or something Ex. <i>I am really at my best when I am <b>challenged</b>.</i>
4.	To stop people and demand proof of who they are Ex. <i>We were <b>challenged</b> by the security guard at the gate.</i>
5.	To state before the start of a court case that a juror is not acceptable Ex. <i>The Appellants have <b>challenged</b> the necessity of some records.</i>
Core Senses of CHALLENGE as a Noun	
1.	Something that tests strength, skill, or ability, especially in a way that is interesting Ex. <i>The company is ready to meet the <b>challenge</b> of the next few years.</i>
2.	When someone refuses to accept that someone or something is right and legal Ex. <i>The president faces a strong <b>challenge</b> from the nationalists.</i>
3.	When someone tries to win something or invites someone to try to beat him/her in a fight or competition Ex. <i>They are ready to mount a <b>challenge</b> for the championship.</i>
4.	A demand from someone such as a guard to stop and give proof of who you are and an explanation of what you are doing Ex. <i>I was met with a <b>challenge</b> when approaching the post.</i>
5.	(In law) a statement made before the start of a court case that a juror is not acceptable Ex. <i>A <b>challenge</b> to a member of the jury should be made before the trial begins.</i>

**RESULTS**

In this section, the results of the collocate analysis of CHALLENGE in different parts of speech will be shown first, followed by a discussion

about the semantic prosody of CHALLENGE. Finally, a collection of concordance lines for each grammatical relation will be displayed to illustrate the semantic prosodies of the broad unit of meaning.

Since the complete lists of the sense categories for each grammatical relation are rather long, as mentioned in the methodology section, only the most dominant sense categories will be presented. The summation of their frequency constitutes over half of the total occurrences. In addition, to analyze the semantic prosody of CHALLENGE, a random selection of 20 concordance lines for each collocate from the top sense groups in each grammatical relation were carefully scanned. The total frequency of the concordance lines under investigation is shown in Table 4 below:

Table 4

*The Frequency of Concordance Lines Scanned for the Grammatical Relations of CHALLENGE*

Grammatical Relations	Frequency of Concordance Lines Scanned
<b>CHALLENGE as a Verb</b>	
1. CHALLENGE N.	340
2. N. CHALLENGE	243
<b>CHALLENGE as a Noun</b>	
3. V. CHALLENGE	694
4. ADJ. CHALLENGE	280
<b>Total</b>	<b>1,497</b>

Readers may notice that the total number of concordance lines scanned for the four grammatical relations are not consistent and not all of them are even numbers. Two factors account for this phenomenon. First, some collocates occurred less than 20 times. Second, some top sense groups contained fewer members. If a sense group had fewer members, it follows that the number of concordance lines for analysis would be lower, too.

Overall, we found that the major senses of CHALLENGE centered on 'to refuse to accept that something is right, fair, or legal' and 'something that tests strength, skill, or ability, especially in a way that is interesting'. The sub-sections below will present how CHALLENGE with these two main senses worked with collocates and co-texts to achieve favorable or unfavorable meanings.

**CHALLENGE as a Verb**

**CHALLENGE(v.) + N.** Table 5 below lists the top two sense groups of nouns as objects of CHALLENGE, along with their frequency and percentages. For example, the largest sense group of [CHALLENGE N.]—‘a feeling/an opinion held by people’—has a frequency of 3,488 and a percentage of 48.81%. Examples of the collocates are given in the column on the right.

Table 5

*The Dominant Sense Categories of the Nouns as Objects of CHALLENGE*

Grammatical Relation	Dominant Sense Groups of Collocates	Collocates
CHALLENGE(v.) + N.	1. ‘a feeling/an opinion held by people’ (3,488, 48.81%)	<i>notion, perception, thinking, belief, attitude, decision, assumption</i>
	2. ‘bias or unfair judgment about someone or something’ (877, 12.27%)	<i>stereotype, preconception, prejudice, myth, injustice</i>

Based on Table 5, it can be seen that the nouns from the top sense group refer to general feelings and opinions that people have about something. Unlike other nouns of ‘thought’ such as *prejudice* and *discrimination*, the nouns in the top sense group appear to have no tendency toward either positive or negative denotation. Without a clear favorable or unfavorable meaning attached, the nouns from the top sense group were treated as neutral collocates. However, their combinations with CHALLENGE were ascribed unfavorable prosody. The descriptions *CHALLENGE a notion* and *CHALLENGE a perception* show a negative attitude—refusing or rejecting an idea.

As far as the broad units are concerned, a close examination of the co-text of CHALLENGE in this grammatical relation showed that CHALLENGE tended to occur with sequences that had favorable meanings. The co-text to the left of CHALLENGE included expressions like *the aim...will be to, attempts to, learn to, need to, so brilliantly and*

*powerfully*, etc., which indicate a need for, a desire for, or success in challenging (see Table 6).

Table 6

*ukWaC Concordances for CHALLENGE with Objects from the Sense Group 'a feeling/an opinion held by people'*

1. education. <b>The aim</b> of that dialogue <b>will be to</b>	<b>challenge</b>	<u>current</u> <i>assumptions</i> relating to 'academic'
2. beautifully artistic endeavour that <b>attempts to</b>	<b>challenge</b>	your <i>assumptions</i> about the world whilst
3. historical development. You <b>will also learn to</b>	<b>challenge</b>	<i>assumptions</i> derived from your own social
4. in which globalisation and technology are	<b>challenging</b>	<u>traditional</u> <i>assumptions</i> anyway, we renegotiate
5. the 'rediscovery' of urban poverty, which	<b>challenged</b>	the prevailing notion that the post-war
6. election campaign. But Booth and Chatterji	<b>challenged</b>	the notion that unions were an entirely
7. they represent. These exercises will also	<b>challenge</b>	your <i>notions</i> of what is required for reading
8. the comparison might serve to support or	<b>challenge</b>	the <i>notion</i> that mathematics is universal
9. questions arise. These are questions that	<b>challenge</b>	<b>the current unearthly notion</b> of human nature
10. work on the edge; to cross borders and to	<b>challenge</b>	their own <i>thinking</i> as they encounter and
11. explaining, <b>promoting positive activities,</b>	<b>challenging</b>	negative <i>thinking</i> , and following up proactively
12. there is any danger of a vote that might	<b>challenge</b>	<u>accepted</u> <i>thinking</i> , the whips drag ministers
13. <b>Future initiative</b> started out with <b>the aim</b> of	<b>challenging</b>	<u>current</u> <i>thinking</i> on school building design
14. transnational flows and interactions that	<b>challenge</b>	<u>traditional</u> mainstream political <i>thinking</i>

Table 6 (Continued)

15. something that <b>so brilliantly and powerfully</b>	<b>challenges</b>	my <i>thinking</i> and <b>gives me such hope</b> for
16. resources by user communities. The fifth theme	<b>challenges</b>	the <u>traditional</u> <i>perception</i> of users as
17. its importance to the regional economy. It	<b>challenges</b>	our <i>perceptions</i> of culture and shows that
18. middle aged and middle class. <b>We need to</b>	<b>challenge</b>	that <i>perception</i> and continue to recruit
19. opposites. Taken as a whole, this collection	<b>challenges</b>	<u>common</u> <i>perceptions</i> and forces the reader
20. that's OK. What we have here is a film that	<b>challenges</b>	our <i>perceptions</i> and <b>encourages us to ask</b>

As for the co-text to the right of CHALLENGE, the collocates from the top sense group were found to be accompanied by adjectives such as *traditional*, *current*, *accepted*, and *common*. Their combinations with these adjectives indicate that the feeling or opinion held by people has existed for a long time or is widely known. According to this observation, the broad units in the grammatical relation [CHALLENGE N.] were associated with a favorable attitudinal meaning of 'intending (needing) to turn down old or prevalent concepts (and trying something new)'.

As can be seen, examining sequences of CHALLENGE of different sizes (i.e., node word with collocates only or node word with co-text of 6:6 span) can result in a different interpretation of prosody. In this case, though the sense analysis showed no clear signs of (un)pleasant prosody, it offered systematic information about CHALLENGE's preferred collocates. An investigation of the co-text, on the other hand, added to our understanding of the conditions in which [CHALLENGE N.] is used to achieve favorable meanings.

In contrast to the nouns from the top sense category, those from the second group (see Table 5) indicate unpleasant meanings attributed to the negative sense of 'bias or unfair judgment about someone or something'. It is interesting to see that the collocates' connection with CHALLENGE conveys favorable prosody. *Challenge prejudice* can be identified as having a positive meaning because rejecting unreasonable opinions is usually viewed as an action of justice or braveness. The evidence from

the concordance lines also suggests that CHALLENGE with this co-text was likely to result in positive prosody.

In Table 7 below, several examples of the lexical sequences preceding CHALLENGE include *regain the initiative is to, take positive measures to, we do hope to, we need to, prepare to, seeking to, we also wanted to*, etc. What is shared by these descriptions is that they all tend to reveal that someone is taking action either out of his/her own volition or out of his/her awareness of necessity, not due to being forced to take action. CHALLENGE with these neighboring words and collocates appears to be characterized by the favorable prosody of ‘needing or desiring to challenge unfair/unreasonable ideas’. A glance at the co-text to the right of CHALLENGE shows that the objects are often followed by prepositional phrases or that-clauses as complements (e.g., preconceptions about, the myth that, the prejudices of), which serve the discourse function of introducing what the unreasonable or wrong ideas are about.

Table 7

*ukWaC Concordances for CHALLENGE with Objects from the Sense Group ‘bias or unfair judgment about someone or something’*

1. every day: That racism and <i>prejudice</i> are	<b>challenged</b>	, that wrongs are put right and healing
2. Government to <b>regain the initiative is to</b>	<b>challenge</b>	the <i>prejudices</i> <u>that</u> the Tories have been
3. system; and— <b>take positive measures to</b>	<b>challenge</b>	social <i>prejudices</i> <u>against</u> women. “The
4. be the major tool which <b>allows us to</b>	<b>challenge</b>	these <i>prejudices</i> ? Is it too much to ask
5. public bodies aware of racial issues and	<b>challenging</b>	the <i>prejudices</i> <u>of</u> individual employees.
6. stronger. Speaking out can be a way of	<b>challenging</b>	HIV <i>prejudice</i> . By telling us about your
7. They’re both very good. I think it’s	<b>challenging</b>	our <i>preconceptions</i> <u>of</u> what a problem *should
8. you want light entertainment, but it will	<b>challenge</b>	your <i>preconceptions</i> and show you an Africa
9. rather about creating a new language that	<b>challenges</b>	<i>preconceptions</i> <u>of</u> beauty. Here Seymour

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Table 7 (Continued)

10. than a front for terrorism, <b>we do hope to</b>	<b>challenge</b>	any <i>preconceptions</i> you may have of the
11. of national and religious identity, and	<b>challenged</b>	our <i>preconceptions</i> about freedom and
12. Jones. 85 mins. J-Cert PG SAFE exists to	<b>challenge</b>	the <i>preconceptions</i> and misconceptions
13. round one stationary dancer: it certainly	<b>challenges</b>	your preconceptions of what a dancer looks
14. is currently disastrous: <b>we need to</b>	<b>challenge</b>	<i>preconceptions</i> <u>about</u> who you are and what
15. and human rights. <b>There is still a need to</b>	<b>challenge</b>	<i>discrimination</i> . The equalisation of the
16. and in our contracts of employment, to	<b>challenge</b>	<i>discrimination</i> and promote equality, and
17. duty to <b>support individuals seeking to</b>	<b>challenge</b>	<i>discrimination</i> than currently applies,
18. <b>prepare</b> young people learners <b>to</b>	<b>challenge</b>	<i>discrimination</i> and prejudice and promote
19. for families and children. The report	<b>challenges</b>	<i>myths</i> about food and poverty, arguing that
20. or eat well is shameful. This report	<b>challenges</b>	the <i>myth</i> <u>that</u> low-income families have
21. or political tradition. <b>We also wanted to</b>	<b>challenge</b>	the <i>myth</i> <u>that</u> the Order is insular and
22. of the answers yourself <b>so that you can</b>	<b>challenge</b>	<i>myths</i> and misperceptions. What is the
23. Press. Ken makes detailed comparisons to	<b>challenge</b>	the <i>myth</i> <u>that</u> Britain is an 'Anglo Saxon
24. such as Yahoo! and Google, has	<b>challenged</b>	another <i>myth</i> <u>that</u> some in TV had accepted

From the current findings, CHALLENGE as a verb has one preferred pattern of sequences with objects: [verbs of 'want' or 'need' + CHALLENGE + nouns of 'thought' (those refer to either 'old/fixed ideas' or 'unfair ideas or attitudes')]. This pattern suggests positive prosody—CHALLENGE is often used when people talk about something unacceptable or unreasonable that they intend to/have to break through.

N. + CHALLENGE(v.). Shifting to the collocates in the subject position of CHALLENGE (e.g., *scholar, lawsuit, activist*), Table 8 below shows that the top three sense groups, making up around 55% of the total frequency, share a similarity—the majority of the group members referring to people of particular identities:

Table 8.

*The Dominant Sense Categories of the Nouns as Subjects of CHALLENGE*

Grammatical Relation	Dominant Sense Groups of Collocates	Collocates
N. + CHALLENGE(v.)	1. ‘a person who believes in or knows a lot about a particular subject’ (155, 24.18%)	<i>scholar, academic, researcher, author, economist, historian, scientist, politician, critic, Christian</i>
	2. (Terms in law) and ‘person/bill striving for rights, benefits, or against something’ (106, 16.66%)	<i>lawsuit, appellant, petition, claimant, defendant, lawyer, applicant, opponent</i>
	3. ‘a group of people who share the same ideas or beliefs or a series of actions intended to achieve a particular result relating to politics or business, or a social improvement’ (100, 15.63%)	<i>comrade, campaigner, campaign, movement, activist</i>

More specifically, the nouns in Group 1 refer to people who have profound knowledge of a subject (e.g., *historian, economist*); those in Groups 2 and 3 mainly deal with someone responsible for or aiming at changes and benefits (e.g., *campaigner, activist, lawyer, applicant*) in the aspects of business, politics, or law. The noun interaction with

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CHALLENGE mainly describes people from a particular background or motivation disagreeing or arguing against something, thereby forming unfavorable prosody.

Focusing on CHALLENGE in broad units with collocates from Group 1, we found that the nouns serving as its objects mainly refer to points of view, ideas, and conventions (e.g., *position, consensus, assumptions, tradition*), as Table 9 below shows. This observation is in line with what we found about the nouns in the object position of the grammatical relation [CHALLENGE N.] above. It should be noted that CHALLENGE seems to occur frequently in sentences with verbs in the passive form (e.g., *...challenged by...*). In Table 9, nine out of the 12 examples are in the passive form and six out of the 12 are in the present perfect tense. The use of the passive voice enables writers to move the objects of CHALLENGE to the beginning of the sentence, fulfilling the purpose of focusing on the thing that the action of challenging is happening to. The operation of foregrounding something other than the subject in the first part of a sentence is called thematization, which serves to draw readers' attention. According to functional grammar, a theory regarding what people do with language to establish communicative relationships, the beginning of a sentence is more prominent than the rest of the sentence (cf. Baldry, Hughes, Burnett, & Collinson, 2011; Stern, 2000). Writers can thematize a sentence element other than the subject by putting it in the front, thereby making it more prominent. In the cases of CHALLENGE as a verb, by means of the passive clause, the state that something is being attacked or questioned is emphasized. Moreover, the present perfect tense implies that the action of challenging was done at some time before but had an influence on the present. Writers make use of this tense to highlight that certain issues have raised much attention and have been disputed for a period of time. In sum, applying the present perfect tense to CHALLENGE in the passive voice creates unfavorable prosody—'an idea has been put into question'. Similarly, when CHALLENGE is in the active form, its combination with the co-text is also qualified as a unit with unfavorable prosody, which expresses 'arguing against a particular view' (e.g., *The Economist challenges the idea of unstructured global interaction...*).

Table 9.

*ukWaC Concordances for CHALLENGE with Subjects from the Sense Group ‘a person who believes in or knows a lot about a particular subject’*

1. secondary and non-Lukan. This <u>position</u> <b>has been</b>	<b>challenged</b>	by several <i>scholars</i> and the bulk of the
2. Alexandrian) original. This <u>consensus</u> <b>has been</b>	<b>challenged</b>	by various <i>scholars</i> , and in section III
3. origins and development. But this <b>has been</b>	<b>challenged</b>	by many <i>scholars</i> on the grounds that the
4. AFO, 2004) <b>have been</b> comprehensively	<b>challenged</b>	by a Sidmouth-based <i>scholar</i> (Wozniak, 2004
5. look at the thinkers who <b>are</b>	<b>challenging</b>	old <u>ideas</u> with their insights into the
6. Christian <u>tradition</u> in particular, <b>have been</b>	<b>challenged</b>	by feminist thinkers. It also aims to
7. and sometimes controversial thinker who	<b>challenges</b>	how designers understand the technological
8. 2500 years to the time when Greek thinkers	<b>challenged</b>	<u>traditions</u> and beliefs based on the gods
9. In the same vein The Economist	<b>challenges</b>	the <u>idea</u> of unstructured global interaction
10. This worldly-wise <u>view</u> <b>has recently been</b>	<b>challenged</b>	by some economists who are sure that happiness
11. compared with the US <b>is</b> now increasingly	<b>challenged</b>	by economists according to a paper by the
12. Contribution The Boston Fed economists	<b>challenge</b>	that <u>assumption</u> , saying Fannie Mae and

Next, we examined the extended sequences of CHALLENGE with its co-text and collocates from the second dominant group (e.g., *lawsuit*, *claimant*, *defender*, *lawyer*) in Table 8. The second sense group includes nouns denoting ‘complaint or claim in a court’, and ‘people striving for interests and rights in law’. It was found that CHALLENGE had a strong negative prosody. In Table 10, the nouns as the objects of CHALLENGE,

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such as *the export-control scheme*, *jurisdiction*, and *the policy*, generally refer to official plans and power. Because they showed no obvious evidence of either positive or negative meaning, we tagged them as neutral surrounding words. However, their co-occurrence with CHALLENGE and the subjects had an unfavorable prosody of 'dissatisfied or disagreeing with the legitimacy and efficiency of policy or official power'. It is interesting to see that, although the nouns in the object position are not conventionally unpleasant in meaning, they can be "tainted" by their co-texts (e.g., *a lawsuit challenge...*) and become part of the meaning unit with negative prosody.

Table 10.

*ukWaC Concordances for CHALLENGE with Subjects from the Sense Group 'person/bill striving for rights, benefits, or against something'*

1. communications about encryption. The <i>lawsuit</i>	<b>challenges</b>	the <u>export-control scheme</u> as an "impermissible
2. have been announced. Monsanto <i>lawsuits</i>	<b>challenge</b>	Syngenta's right to sell GA21 corn and
3. eight of nine board members. A <i>lawsuit</i>	<b>challenging</b>	the <u>policy</u> was brought in December 2004
4. taking an elderly resident by the ear is	<b>challenged</b>	by the <i>Appellant</i> . In no circumstances
5. single registration authority. The <i>Appellant</i>	<b>challenged</b>	the health authority's view as to the number
6. suspended in September while Sharon's <i>lawyers</i>	<b>challenged</b>	Belgium's <u>jurisdiction</u> . The investigating
7. personal histories. The detainees' <i>lawyers</i>	<b>challenged</b>	the Government to produce any evidence
8. Supreme Court, his paper's <i>lawyers</i> having	<b>challenged</b>	the law's constitutionality. A serious
9. until a week from today. His <i>lawyers</i> had	<b>challenged</b>	the planning inspector's recommendation

In contrast to the first two sense groups, the broad units in the third sense group displayed favorable prosody, as the hidden evaluative

meaning of these units was positive—‘refuses or disapproves of something unfair or detrimental’. As shown in Table 11, five out of the eight instances (1 through 5) include objects with unpleasant meanings: *stereotype*, *monopoly*, *inappropriate coverage*, *ban*, and *crime*. Their co-occurrences with CHALLENGE and the human subjects in Group 3 constitute a favorable connotation that implies questioning the existing system, which is usually seen as inadequate.

Table 11.

*ukWaC Concordances for CHALLENGE with Subjects from the Sense Group ‘actions intended or people devoted to achieving a particular result relating to politics or business, or a social improvement’*

1. women’s human rights activists so blatantly	<b>challenge</b>	the <u>stereotypes</u> promoted about Muslim women
2. During the Seventies, New Left activists	<b>challenged</b>	this <u>monopoly</u> by setting up pirate radio
3. supporting an email network of activists	<b>challenging</b>	<u>inappropriate coverage</u> in the Scottish
4. In 1990, a group of 47 women activists	<b>challenged</b>	the <u>ban</u> by driving through the centre of
5. legitimate response? two peaceful activists	<b>challenged</b>	the serious organised <u>crime</u> and police
6. the crime. A Civil Rights campaigner is	<b>challenging</b>	the proposal. Allegations over dirty goings-on
7. attempts to cull the creatures have been	<b>challenged</b>	by <i>campaigners</i> , who call for hedgehogs
8. the WTO became a focus for campaigners	<b>challenging</b>	the roots of a system where wealth and

Based on the findings of [N. CHALLENGE] in this sub-section, it is worth noting that the semantic prosody of CHALLENGE in a particular grammatical relation is not consistent all the time. This result contributes to a new understanding; until now, no studies have discussed the variety of semantic prosody within the same grammatical relation. The collocates from different sense categories can occur in various broad

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units to create distinct prosody—either positive or negative.

The next section will deal with the performance of CHALLENGE as a noun with its collocates in two different grammatical relations—[V. CHALLENGE] and [ADJ. CHALLENGE]. The results are shown in Table 12.

**CHALLENGE as a Noun**

**V. + CHALLENGE(n).** As can be seen in Table 12, the top two sense groups of verbs in [V. CHALLENGE] represent a significant portion of the total instances (80%). Particularly, the first dominant group accounts for almost 50%, suggesting that the verbs denoting 'to come upon, come in front' are important collocates of CHALLENGE.

Table 12.

*The Dominant Sense Categories of the Verbs of CHALLENGE When CHALLENGE is a Subject*

Grammatical Relation	Dominant Sense Groups of Collocates	Collocates
V. + CHALLENGE(n.)	1. 'to come upon, come in front' (14,027, 48.37%)	<i>face, meet, confront, encounter</i>
	2. 'to give, provide, cause' (9,333, 32.19%)	<i>pose, present, mount, issue, set, bring, offer, address</i>

In addition, we noticed that there was a contrast between the two sense categories. Table 13 below lists the specific senses of four verbs from each group to illustrate these differences. According to our observation, the verbs in the top group have a more 'passive' voice in semantic meaning, describing the situations that people are forced to or have no choice but to deal with difficulty or a dilemma. On the other hand, those in Group 2 express motives to initiate actions and the shared meaning implies 'making/causing something to happen'.

Table 13.

*The Definition of the Verbs from the Top Two Sense Groups*

The Verbs from Group 1 and Their Senses	The Verbs from Group 2 and Their Senses
1. <i>face</i> (v.) 'if a difficult situation faces you, it is going to affect you and you must deal with it'	1. <i>pose</i> (v.) 'cause problems'
2. <i>meet</i> (v.) 'to deal with a problem or something difficult that you have to do'	2. <i>present</i> (v.) 'give something to someone, cause something to happen'
3. <i>confront</i> (v.) 'if a problem, difficulty, etc. confronts you, it appears and needs to be dealt with'	3. <i>issue</i> (v.) 'to officially produce something'
4. <i>encounter</i> (v.) 'to experience something, especially problems or opposition'	4. <i>set</i> (v.) 'to make something start happening'

Even though the two groups have contrasting meanings, their combinations with CHALLENGE both resulted in unfavorable prosody. For example, *face (a) challenge(s)* or *meet (a) challenge(s)* means that there is something tough that has to be dealt with. In these phrases, CHALLENGE has a negative connotation. Similarly, *present (a) challenge(s)* or *pose (a) challenge(s)* also possesses negative meanings used to express causing someone trouble or giving someone difficulty.

An interesting phenomenon was discovered in the analysis of semantic prosody of broad units in Group 1. We found that the sequences with the verbs from Group 1 did not necessarily have consistent prosody. The concordance lines in Table 14 below exemplify this phenomenon:

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Table 14.

*ukWaC Concordances for CHALLENGE with Verbs from the Sense Group 'to come upon, come in front'*

1.	of historic assets <i>face</i> <u>major</u> financial	<b>challenges</b>	in securing their upkeep. At 70 privately
2.	at The New York Times <i>faced</i> an <u>enormous</u>	<b>challenge</b>	. He would have to create the job from scratch
3.	public-sector organisation was <i>facing</i> a <u>major</u>	<b>challenge</b>	in shifting its culture to enable it to
4.	most long-term refugees <i>face</i> <u>uphill</u>	<b>challenges</b>	upon repatriating to Somaliland.” Report
5.	continue its discussion, <i>facing</i> a <u>major</u>	<b>challenge</b>	. Not only are developing countries faced
6.	practice is being developed to <i>meet</i> the	<b>challenge</b>	of today’s adolescents, in particular those
7.	accepted strategies of intervention to <i>meet</i> the	<b>challenges</b>	of an adolescent population whose childhood
8.	services that <b>enable</b> the ISC to <i>meet</i> this	<b>challenge</b>	by retrieving channel lists in real time
9.	, Caleb was more than <b>ready to</b> <i>meet</i> the	<b>challenge</b>	. He wanted that mountain. He was committed
10.	<b>appropriately skilled staff</b> —to <i>meet</i> the	<b>challenge</b>	of preserving complex and varied electronic
11.	groundwork to <b>enable us</b> to <i>confront</i> the	<b>challenge</b>	of globalisation,” he wrote. “This can
12.	century awaits us. Let us <i>confront</i> its	<b>challenge</b>	with confidence, and together give our
13.	them, and ways of <b>helping them</b> <i>confront</i> the	<b>challenges</b>	they face, particularly in countering drugs
14.	World Assembly on Ageing <i>confronts</i> the	<b>challenge</b>	of a rapidly ageing world. Health could
15.	infinite. So each of us must <i>confront</i> the	<b>challenge</b>	in his or her own way. I may try to ignore
16.	Chinese elites were <i>confronting</i> two	<b>challenges</b>	: how to secure personal safety; and, given

In the examples with *face* (1 through 5), CHALLENGE as a noun is emphasized by adjectives modifying the degree of seriousness. The sequences such as *face major financial **challenges***, *faced an enormous **challenge***, and *face uphill **challenges*** are associated with the negative prosody of ‘running into an extremely worrying situation’.

*Confront* and *meet*, different from *face*, were more likely to occur with *to*-infinitives and other lexical items with pleasant meanings, as shown in Table 14. These expressions include *enable...to meet*, *ready to meet*, *helping them (to) confront*, *let us confront...with confidence*, *must confront...in his or her own way*, *strategies of...to meet...*, and *appropriately skilled staff...to meet*. These sequences show the favorable prosody of ‘being prepared to deal with difficulty’. This finding provides evidence that, even though the collocates from the same sense category tended to have similar prosody, when considering the frequent neighboring words with each collocate, prosody was not always consistent. More specifically, the semantic prosody of CHALLENGE with collocates from the same sense group may have been diversified due to differences in the surrounding words of each collocate.

The findings on broad units in Group 2 are similar to those in Group 1. Table 15 below displays the collection of concordance lines for CHALLENGE and verbs from the sense group ‘to give, provide, cause’:

Table 15.

*ukWaC Concordances for CHALLENGE with Verbs from the Sense Group ‘to give, provide, cause’*

1.	school and home environments that <i>pose</i> a	<b>challenge</b>	for learners and educational planners.
2.	the emergence of SARS <i>posed</i> <u>considerable</u>	<b>challenges</b>	in understanding the factors determining
3.	diversification of routes and methods <i>pose</i> <u>major</u>	<b>challenges</b>	for our counter-drug programmes.
4.	Securing control systems <i>poses</i> <u>significant</u>	<b>challenges</b>	, including technical limitations, perceived
5.	competition policy, <i>presenting</i> <u>important</u>	<b>challenges</b>	for policymakers. The issues raised are
6.	Britain. That of course <i>presents</i> a <u>huge</u>	<b>challenge</b>	to the United States in the south of Iraq

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Table 15. (Continued)

7.	brain damage by <i>presenting</i> a physiological	<b>challenge</b>	to auditory neurons in the brainstem. Factors
8.	current adversaries <i>present</i> a <u>significant</u>	<b>challenge</b>	to our government and law enforcement
9.	Reformers considered this they <i>presented</i> a <u>great</u>	<b>challenge</b>	. It was that those of us to whom God gives
10.	choosing accurate procedures, <i>setting</i> <u>adequate</u>	<b>challenges</b>	, and letting the student act from freedom
11.	your own pace where you can <i>set</i> <b>your own</b>	<b>challenges</b>	and Communication Skills for learners who
12.	mind as they do the task. 2. <i>Set</i> a <u>simple</u>	<b>challenge</b>	every day. For example, write their first
13.	flexible and versatile— <i>set</i> <u>achievable</u>	<b>challenges</b>	so that the teachers are pushed into thinking
14.	operational research techniques <i>set</i> the	<b>challenge</b>	for the Navy to overcome. Essentially quantitative
15.	organisations, and the raised stakes <i>bring</i> <u>fresh</u>	<b>challenges</b>	. This new political and public priority
16.	initiatives. However, being a pioneer <i>brings</i>	<b>challenges</b>	as well as opportunities, and it is clear
17.	programme will <i>bring</i> <u>exciting</u> professional	<b>challenges</b>	for our staff while improving the service
18.	surges in school enrolment also <i>brings</i> <u>huge</u>	<b>challenges</b>	for the education infrastructure, from
19.	IT systems and software. It does <i>bring</i>	<b>challenges</b>	, dilemmas and possible misunderstandings
20.	instance. A member has brought an <u>interesting</u>	<b>challenge</b>	to the Trust's collection policy in that
21.	Daily Telegraph. They <i>issued</i> an anonymous	<b>challenge</b>	to readers, asking if anyone could solve
22.	and the Fawcett Society are <i>issuing</i> a	<b>challenge</b>	to both candidates, asking you to set out
23.	leadership candidates. We are <i>issuing</i> a	<b>challenge</b>	to you to explain how, if elected, you
24.	its sixth series. The show, which <i>issues</i>	<b>challenges</b>	to participants to 'fake it' as professionals

Table 15. (Continued)

25. member, Billy Armstrong has <i>issued</i> a direct	<b>challenge</b> to the Sinn Fein Leadership. Mr Armstrong
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For the sequences of the verbs *pose* and *present*, negative prosody was found. The two verbs co-occurred with adjectives that denote ‘important in effect’ as modifiers of CHALLENGE; the expressions include *pose* major **challenges**, *poses* significant **challenges**, *presenting* important **challenges**, *present* a significant **challenge**, etc. In these expressions, CHALLENGE is viewed as a difficult problem to deal with, requiring much attention or of extremely bad consequences. Moreover, in examples 2 and 6, we found sequences containing adjectives denoting ‘large in number or degree’ (e.g., *posed* considerable **challenges**, *presents* a huge **challenge**), both of which show a comparatively unpleasant prosody of ‘causing a great deal of difficulty’.

In contrast to *pose* and *present*, *set* and *bring*, along with their co-texts, showed pleasant prosody. For example, the sequences *set* adequate **challenge**, *set* achievable **challenge**, *set* simple **challenge**, and *you can set your own* **challenge** are characterized by the positive prosody of ‘making a task suitable for someone’s capacity’. *Bring* CHALLENGE, as seen in examples 15, 17, and 20, was found with adjectives with pleasant meanings, such as *fresh*, *exciting*, and *interesting*. However, *issue* a **challenge**, which expresses inviting someone for a fight, seemed to have neutral prosody because no concrete criteria or clues could be referred to in evaluating whether the act of asking for a competition is favorable or not.

These observations are in line with our findings on CHALLENGE in the Group 1 context. There is a chance that collocates with similar senses can still result in different prosodies. Overall, in terms of the distinction between favorable and unfavorable, semantic prosodies for [CHALLENGE N.] were not as consistent as those for the two grammatical relations of CHALLENGE as a verb.

**ADJ. + CHALLENGE(n).** Considering the adjectives as modifiers of CHALLENGE, they mainly shared the senses of ‘importance in effect’ and ‘great in size, degree, and amount’ (see Table 16). This result overlaps with our findings on the frequent words in the broad units of [V. CHALLENGE]. The adjectives in Group 1, which denote ‘being fundamental or pivotal’ (e.g., *serious*, *significant*, *key*), can be labeled

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positive collocates, as they usually emphasize something having important meaning or worth. However, their interaction with CHALLENGE showed unfavorable prosody. As indicated in the discussion of [V. CHALLENGE] above, the combinations of CHALLENGE with these adjectives can mean difficulty leading to very worrying results. As for the adjectives in Group 2 (e.g., *enormous*, *tremendous*), they are used to enhance the level of difficulty, so their co-occurrences with CHALLENGE highlight the strong intensity of difficulty, creating negative prosody.

Table 16.

*The Dominant Sense Categories of Adjectives as the Modifiers of CHALLENGE*

Grammatical Relation	Dominant Sense Groups of Collocates	Collocates
Adjectives as the modifiers of CHALLENGE	1. 'very important, and have a lot of influence; severe in effect' (9,832, 32.89%)	<i>major, key, serious, significant</i>
	2. 'extremely large in size, degree, and amount' (5,712, 19.11%)	<i>big, enormous, huge, considerable, great</i>

We turn now to the semantic prosody of the sequences with CHALLENGE and adjectives from the top two sense groups. Table 17 below shows a random collection of broad units with *big*, *key*, *enormous*, *tremendous*, and *significant*:

Table 17.

*ukWaC Concordances for CHALLENGE with Adjectives from the Top Two Sense Groups*

1. problems he has already faced, his <i>biggest</i>	<b>challenge</b>	lies ahead. The defence secretary must
2. area. Computer crime is one of his <i>biggest</i>	<b>challenges</b>	. “The results of this year’s survey again
3. Oxford offers some pointers. But the <i>biggest</i>	<b>challenges</b>	are in the areas of policy. Can the NHS
4. milestone (Slide 9,10) was a much <i>bigger</i>	<b>challenge</b>	and this shows that this was also
5. from ‘user-friendly’. The <i>big</i> technical	<b>challenge</b>	for the future was to achieve a seamless
6. carried with them <i>big</i> organisational	<b>challenges</b>	for libraries, changing their roles in
7. equation: Martin Briggs One of the <i>key</i>	<b>challenges</b>	to the east midlands is the government’s
8. decades—that is expected to <b>present</b> a <i>key</i>	<b>challenge</b>	to any American occupation of Iraq. “In
9. development. The NTA will <b>address</b> this <i>key</i>	<b>challenge</b>	by leading a national recruitment drive
10. last without our having <b>resolved</b> the <i>key</i>	<b>challenges</b>	it presented to us in the 14 years before
11. dominated by a discussion about the <i>key</i>	<b>challenges</b>	facing the SSP in the next period and
12. endeavour, and <b>to identify</b> <i>key</i> technical	<b>challenges</b>	to create the technological
13. Friel 2004: 213) is to highlight the <i>key</i>	<b>challenge</b>	to maritime archaeologists. We must
14. reform that we offer. He <b>faces</b> an <i>enormous</i>	<b>challenge</b>	. Improving our schools, colleges and
15. industry successfully meet the enormous	<b>challenges</b>	ahead ensuring not only a prosperous
16. “The publishing business <b>faces</b> <i>enormous</i>	<b>challenges</b>	, and to survive we need to have the

Table 17. (Continued)

17. decent place to live. <b>This is</b> an <i>enormous</i>	<b>challenge</b>	for Habitat for Humanity. So we are
18. than Blair, but <b>there are</b> <i>enormous</i>	<b>challenges</b>	ahead. Clare Short is Labour MP for
19. and Labour. <b>This is</b> a <i>tremendous</i>	<b>challenge</b>	to the government. The movement has
20. Fulfilling this demand <b>poses</b> <i>tremendous</i>	<b>challenges</b>	for future hard disk technology. To
21. said, "Our society <b>faces</b> <i>tremendous</i>	<b>challenges</b>	in the coming decades. The issue of
22. its armed forces will not face <i>serious</i>	<b>challenges</b>	in the next two decades. The sum total
23. smuggling or trafficking <b>pose</b> a <i>serious</i>	<b>challenge</b>	to EU and member states' asylum
24. hiring practices. But <b>there is</b> now a <i>serious</i>	<b>challenge</b>	to the ability of academe to live up to
25. scale. Three issues are seen as <i>serious</i>	<b>challenges</b>	(average >5): unemployment, the
26. here, but <b>there are</b> some <i>significant</i>	<b>challenges</b>	. One challenge is that the recording
27. where service delivery <b>presents</b> <i>significant</i>	<b>challenges</b>	. The work will include a training
28. electronic journals, has <b>posed</b> a <i>significant</i>	<b>challenge</b>	to the information profession. Issues
29. worldwide are <b>facing</b> <i>significant</i> market	<b>challenges</b>	to increase revenue. For digital service

The four typical patterns of sequences that were generated are shown below:

- (8) a. *(this is) a(n) ADJ. challenge to*  
 b. *there (BE) ADJ. challenge(s)*  
 c. *face/meet (a) ADJ challenge(s)*  
 d. *post/present (a) ADJ challenge(s) to/for*

On the whole, these patterns appear to have a more unpleasant prosody. Examples (8a) and (8b) assert the existence of trouble or serious

challenges (e.g., *this is an enormous challenge, there are some significant challenges*), while (8c) and (8d) have negative prosody—‘causing or suffering from an extremely undesirable situation’ (e.g., *faces tremendous challenges, poses a serious challenge*). A careful examination of the co-text of CHALLENGE showed that *big* tended to occur in the superlative form with *challenge(s)*, as seen in examples 1 through 3 in Table 17. From this we can infer that speakers tend to use this form to stress that the difficulty is to a degree greater than that of anything it is being compared to. Although most of the patterns seem to display negative prosody, some cases with the adjective *key* as the modifier served as exceptions. Based on examples 9, 10, and 12 in Table 17, the sequences with *key* either showed an intention to deal with difficulty (e.g., *will address this key challenge, endeavor...to identify key technical challenges*) or a finished action of solving problems (e.g., *having resolved the key challenge*). These instances suggest a more favorable meaning, as they exemplify that *key challenge(s)* can also occur in contexts that describe the situation in which people aim to achieve the goal of dealing with the difficulty or the serious problem has been successfully solved. Because *key challenge(s)* can occur in either favorable or unfavorable environments, the broad units with them were thus labeled as having neutral prosody. In sum, our analysis of the co-text of CHALLENGE in the grammatical relation of [ADJ. CHALLENGE] reconfirms that CHALLENGE with collocates from the same sense category may not always result in the same prosody. Moreover, the variety of the words habitually surrounding CHALLENGE and each of its collocates can lead to differences in prosody

In the next section, our preliminary conclusions will be summarized and discussed in detail. The implication of our analysis of CHALLENGE on the dispute of semantic prosody identification is presented as well. Our aim is not geared towards finding a precise definition of semantic prosody but reconsidering some of the phenomena often noted under the heading of semantic prosody. Finally, promising directions for future research and pedagogical implications about corpus-driven learning will be suggested.

## DISCUSSION AND CONCLUSION

This paper has explored the semantic prosody of CHALLENGE as a verb and a noun through investigating its performances in four

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grammatical relations. Unlike previous studies on semantic prosody, which focused merely on the collocates of or the long sequences before/after node words, this study examined both of these phenomena, hoping to analyze in depth how CHALLENGE interacts with surrounding environments in different layers. The corpus data showed that although CHALLENGE is perceived as unpleasant in meaning, it can also be used positively in some contexts.

Table 18 below summarizes the semantic prosodies of CHALLENGE with its preferred sense categories of collocates and its co-text:

Table 18.

*The Semantic Prosody of the Phraseological Units Containing CHALLENGE in the Four Grammatical Relations*

Grammatical Relations	Semantic Prosody of CHALLENGE with Collocates from Top Sense Groups	Semantic Prosody of CHALLENGE in Broad Units with Collocates from Top Sense Groups
CHALLENGE + N.	CHALLENGE + Group 1: unfavorable e.g., <i>challenge a notion</i>	(favorable) ‘intending to turn down some old or prevalent concepts’ e.g., <i>We need to challenge that <u>perception</u>.</i>
	CHALLENGE + Group 2: favorable e.g., <i>challenge discrimination</i>	(favorable) ‘needing or desiring to challenge unfair/unreasonable ideas’ e.g., <i>We also want to challenge the <u>myth</u> that...</i>
N. + CHALLENGE	CHALLENGE + Group 1: unfavorable e.g., <i>the economist challenged</i>	(unfavorable) ‘arguing against a particular view’ e.g., <i>This <u>consensus</u> has been challenged by various <u>scholars</u>.</i>
	CHALLENGE + Group 2: unfavorable e.g., <i>the appellant challenged</i>	(unfavorable) ‘dissatisfaction or disagreement toward the legitimacy and efficiency of policy or official power’ e.g., <i>The detainee’s <u>lawyer</u> challenged the <u>Government</u>...</i>
	CHALLENGE + Group 3: unfavorable e.g., <i>activists challenged</i>	(favorable) ‘refuses or disapproves of something unfair or detrimental’ e.g., <i>...New Left <u>activist</u> challenged this <u>monopoly</u>.</i>

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Table 18. (Continued)

V. + CHALLENGE	CHALLENGE + Group 1: unfavorable e.g., <i>face a challenge</i>	(unfavorable) 'running into (serious) difficulty' e.g., ... <i>Refugees <u>face uphill challenges</u></i> ...
		(favorable) 'being prepared to deal with difficulty' e.g., ... <i>that <u>enable us to confront the challenge of globalisation.</u></i>
	CHALLENGE + Group 2: unfavorable e.g., <i>pose a challenge</i>	(unfavorable) 'causing a great deal of difficulty' e.g., ... <i>the emergence of SARS <u>posed considerable challenges in...</u></i>
		(favorable) 'making a task suitable for someone's capacity' e.g., <i>Programme will <u>bring exciting professional challenges for...</u></i>
Adjectives as the modifiers of CHALLENGE	CHALLENGE + Group 1 or Group 2: unfavorable e.g., <i>a serious challenge or enormous challenges</i>	(unfavorable) 'causing or suffering from an extremely undesirable situation' e.g., ... <i>our society <u>faces tremendous challenges...</u></i>

According to Table 18, several major findings are shown. First, we uncovered evidence suggesting that semantic prosody and syntactic structure are interdependent (see Bednarek, 2008; Hunston, 2007; Partington, 2004). Focusing on CHALLENGE with collocates, it was found that both the subject and the object occurred with CHALLENGE as a verb to create unfavorable prosody, and the preference for particular sets of words was inextricably bound to the grammatical environment in which CHALLENGE occurred. For example, as can be seen in Table 18, for the construction [CHALLENGE N.], the objects referring to thoughts or ideas served as something being questioned and CHALLENGE

carried the sense of refusing or disputing. The grammatical relation [N. CHALLENGE], which indicates the state that a person disagrees with or is opposed to something, tended to occur with animate subjects referring to people who are knowledgeable in a particular academic field or who strive for rights or social improvement. Moreover, the semantic prosody of CHALLENGE with its co-text was found to be distinctive in different grammatical relations. For instance, [CHALLENGE + N.] showed favorable prosody, expressing the need or intention to refuse old or unfair ideas, while [ADJ. CHALLENGE] was likely to occur with the negative prosody of ‘causing or suffering from an extremely undesirable situation’.

Second, it is shown in Table 18 that, even in the same grammatical relation, the semantic prosody of CHALLENGE with collocates can differ from that of CHALLENGE with co-text. Among the four relations, only [ADJ. CHALLENGE] had consistent negative prosody across the two different units (node word + collocates, node word + co-text). The semantic prosody of the two units with [CHALLENGE N.] was found to contrast with each other. Our concordance evidence reflected that CHALLENGE as a verb occurred with objects to express the negative prosody of rejecting an idea; on the other hand, a more favorable prosody was found in its broad units with sequences expressing desire or need, including *we hope*, *attempt to*, *want to*, and *need to*. Similarly, in the grammatical relation of [V. CHALLENGE], the units with collocates had negative prosody—‘causing someone trouble or giving someone difficulty’, whereas the units with co-text had the positive prosody of ‘making a task suitable for someone’s capacity’ (e.g., *set adequate challenge*, *bring exciting professional challenge*). According to these results, we hold the position that the two units—[node word + collocates] and [node word + co-text]—in determining semantic prosody are equally important. As stated at the beginning of this paper, they are regarded as analysis methods that complement each other. In this study, each unit contributed to a better understanding of semantic prosody in different aspects. The analysis of [node word + collocates] provided a systematic guide of the classification of collocates and it demonstrated how their re-occurrence with the node word constitutes a particular prosody, whereas the analysis of [node word + co-text] was more concerned about the evaluative attitude of the speaker/writer in the extended contexts. Based on our observation, we suggest that future research on semantic prosody will need to specify the purpose first and then considers

seriously whether choosing one or both can benefit the investigation.

Another important finding was that collocates from the same sense category that occurred in the broad units with CHALLENGE did not necessarily share the same prosody. Table 18 displays that, for the grammatical relation of [V. CHALLENGE], the broad units with verbs of the same senses were found to have more than one form of prosody. In addition to the unfavorable prosody describing the intensity of difficulty or causing and meeting trouble (e.g., *pose a **huge challenge**, face a **tremendous challenge***), some collocates from the top two sense groups also occurred with CHALLENGE and its co-text to express positive meanings (e.g., *set **simple challenges**, ready to meet a **challenge**, bring an **exciting challenge***). This finding, to a certain extent, echoes Partington's (2004) view that items belonging to the same semantic set may have different degrees of prosody. Partington provided corpus evidence to demonstrate that in the HAPPEN set, *set in* had the worst prosody, followed by *happen*, then *occur*, and *take place*. According to the results of [V. CHALLENGE], *face*, compared with *meet* and *confront*, had a higher probability of occurring with CHALLENGE, forming negative prosody. Even though *meet* and *confront* shared a similar sense with *face*, their co-occurrences with CHALLENGE did not show a definite negative prosody; instead, the prosody was rather favorable. In future studies, more attention should be paid to the performances of specific collocates from the same semantic category in interacting with the node word. As evidenced in the current study, the generalized statement that 'X has a positive or negative prosody when occurring with collocates with sense Y' can sometimes be misleading if the broad sequences with a particular collocate and a node word are not checked and interpreted adequately. Considering the view that a word with a particular prosody needs not completely reflect the phenomenon observed, we support the explanatory use rather than the predictive use of semantic prosody, a distinction made by Hunston (2007). This predictive line of argument assumes a uniformity of meaning, and an intolerance of individual usage (Hunston, 2007. p. 261). If a word has a given semantic prosody, it is taken as a prediction that the meaning of that semantic prosody must always be presented when that word is used. The explanatory use of semantic prosody, in contrast, allows more flexibility: even if the word is often used positively, it is not necessarily wrong when used negatively. After careful investigation, our exploration of CHALLENGE suggests that semantic prosody is a discourse function of

a sequence; the attitudinal meaning can be altered by its immediate co-text.

Apart from the above-mentioned discussions, the favorable or unfavorable prosody perspective, by scholars such as Louw (1993), that semantic prosody is contingent upon a consistent set of collocates is also not well-supported in the case of CHALLENGE. The major senses of CHALLENGE throughout the four different grammatical relations were found to be relatively negative: 'to dispute the truth or validity of something', 'to defy boldly', 'something that tests a person's ability and needs great effort', and 'an act of refusing'. Moreover, as reported in this paper, while the broad units of CHALLENGE in some occasions did have favorable prosody, the combinations of CHALLENGE and collocates consistently showed unfavorable prosody, except for CHALLENGE as a verb with collocates from the sense group of 'bias or unfair judgment about someone or something'. Such clearly unfavorable prosody can be attributed to the coloring of the strong negative sense of CHALLENGE to its collocates. It is clear that collocates such as *economist*, *perception*, *enormous*, *face*, *pose*, and so on, are not, in isolation, definite indications of something undesirable. However, when they occurred with CHALLENGE, the whole unit tended to display rather negative prosody. It appears that the negative "aura" of CHALLENGE can permeate collocates. This observation suggests that for words with strong negative (or positive) meanings, a consistent series of collocates themselves may not have been able to help determine whether the semantic prosody was favorable or not; instead, the sense of the node word played a more decisive role. Further research on words with negative meanings like ATTACK, BLAME, and DISPUTE is needed to gain more clarification of the association between favorable and unfavorable meanings of node words with semantic prosody.

Some pedagogical implications may be considered for ESL/EFL learning and teaching. The results of our study can prevent learners from taking an over-simplistic view that words like CHALLENGE have a negative semantic prosody. ESL/EFL teachers should make semantic prosodic information explicit for learners, giving information about the regular contexts in which CHALLENGE occurs and indicating the discourse function of its frequent sequences. With a command of its semantic prosody, learners will be able to use CHALLENGE in effective communication. Moreover, to develop students' autonomy and independence, the concordance lines for CHALLENGE listed in this

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paper can be useful materials for inductive data-driven learning. Through data-driven learning, students can discover frequent patterns and observe a large variety of the use of CHALLENGE by themselves. Making a student a linguistic researcher through data-driven learning is believed to benefit his/her development of the ability to see patterning in the target language and to form generalizations about language forms and use.

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英語中 'CHALLENGE' 一字之語意韻探究：  
以語料庫為本

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本研究以探討 CHALLENGE 一字之語言表現為中心。CHALLENGE 通常被歸類為 *dispute*、*defy*、*confrontation* 或 *contest* 等字之近義詞，具有負面涵義。但根據字典釋義，CHALLENGE 一字卻亦具有正向的意義，例如可用以表示「鼓舞、促進從事具有挑戰性競爭性之事」。本研究試圖觀察 CHALLENGE 這個同時具有正向及負面意義的字與其鄰近的搭配詞組所形成之特定語意，透過收藏約十五億字的 ukWaC 線上英文語料庫，我們分析 CHALLENGE 在作為動詞與名詞時，其在四個不同句型結構中的語意韻。本研究的目標詞組分為兩組，第一個詞組包含 CHALLENGE 與其左右最鄰近的搭配詞，第二個詞組的範圍則延伸涵蓋 CHALLENGE 與其左右搭配詞周邊鄰近詞。研究結果顯示，CHALLENGE 除了描述「高難度」或「引起、面臨困擾」等較負面的語意韻，也可與其鄰近字詞共同呈現正向的意思，例如 *set a simple challenge*、*ready to meet a challenge*、*bring on exciting challenge* 等。此外，本研究也發現了在不同句式中 CHALLENGE 與周邊字組所形成的語意韻具有獨特的意義，例如當 CHALLENGE 作為動詞並與受詞一同出現時，通常會帶有較具正向意思的語言韻，亦即「需要（想要）質疑或挑戰不合理（不公平）的概念」，但當 CHALLENGE 作為名詞並與形容詞一同出現，則較傾向出現於具有負面意的語意韻情境，用來表達「導致或蒙受極度艱困的狀態」。整體言之，透過語料庫資料分析本研究鎖定的句型結構可得知，雖然

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CHALLENGE 普遍被視為負面意義較強的字，但其語意韻並非一致性地偏向負面概念。本研究具體呈現出 CHALLENGE 如何與其周邊環境互動而形成正面或負面的語意連結，使我們對於 CHALLENGE 的用法有了新的認識。研究結果可以作為語言教學的基礎，幫助第二語言學習者更精確的理解與使用詞彙，避免錯誤的語意韻認知過度延伸。

**關鍵詞：**語意韻、語法關係、語料庫、搭配詞