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Collocation and Semantic Prosody: On the Usage of CAUSE-Words

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Abstract

As an important yet intricate linguistic feature in English language, synonymy poses a great challenge for second language learners. Using the 100 million-word British National Corpus (BNC) as data and the software Sketch Engine (SkE) as an analyzing tool, this paper explores the collocational behavior and semantic prosodies of near synonyms GIVE RISE TO, BRING ABOUT, AROUSE, RESULT IN, LEAD TO and CAUSE. The results show that these near synonyms differ in their collocational behavior and semantic prosodies. The pedagogical implications of the findings are also discussed.

Keywords: *collocation, semantic prosody, near synonym*

1. Introduction

Any natural language consists of a considerable number of synonymous words. English is particular rich in synonyms due to historical reasons, which enables English speakers “to convey meanings more precisely and effectively for the right audience and context” (Liu & Espino 2012: 198), but also constitute a thorny area for EFL (English as a Foreign Language) learners because of their subtle nuances and variations in meaning and

usage. Synonyms are not completely interchangeable; rather, they differ in shades of meaning and vary in their collocations and semantic prosodies. From the literature available, it would appear that both collocation and semantic prosody are inaccessible to a speaker's conscious introspection (Hunston 2002: 142; Louw 1993: 173; Partington 1998: 68). However, as the size of corpora has grown and tools for corpora analysis have been developed, collocations and semantic prosodies have been addressed much more easily and frequently by linguists (Hunston 2002; Louw 1993, 2000; Partington 1998; Schmitt & Carter 2004; Sinclair 1991; Stubbs 1995, 1996, 2001; Xiao & Mcenery 2012).

This paper explores the collocational behavior and semantic prosodies of near synonyms GIVE RISE TO, BRING ABOUT, AROUSE, RESULT IN, LEAD TO and CAUSE in British National Corpus. While these words have a very similar denotational meaning, their collocational behavior and semantic prosodies differ markedly. The paper is structured as follows. Section two gives an overview of related work by introducing corpus studies of collocation, semantic prosody and near synonyms. Section 3 introduces corpus data and tools used in this study. The results of this study are presented and analyzed in Section 4. The final section summarizes major findings and pedagogical implications of this study.

2. Related Work: Collocation, Semantic Prosody and Near Synonymy

Collocation has been studied for at least five decades. The word collocation was first used as a technical term by Firth (1957) when he said 'I propose to bring forward as a technical term, meaning by collocation, and apply the test of collocability' (Firth 1957: 194). According to Firth (1968: 181), 'collocations of a given word are statements of the habitual or customary places of that word.' Firth's research on collocation, however, is largely intuition-based. It is in sharp contrast with most corpus linguists' belief that the only way to reliably identify the collocates of a given word is to study patterns of co-occurrence in a corpus. For example, Hunston (2002, p. 68) argues, 'Collocation may be observed informally in any instance of language, but it is more reliable to measure it statistically, and for this a corpus is essential.' Sinclair operationalized the idea of Firth, proposing that a collocation is a co-occurrence pattern that exists between two items that frequently occur in proximity to one another, but not necessarily adjacently or, indeed, in any fixed order. Node and collocates are two notions closely related to collocation. A node is an item whose total pattern of co-occurrence with other words is under examination; and a collocate is any one of the items which appears with the node within a specified span (Sinclair *et al.*, 2004, p. 10).

The collocational meaning arising from the interaction between a given node and its typical collocates might be referred to as semantic prosody, 'a form of meaning which is established through the proximity of a consistent series of collocates' (Louw 2000: 57). Both individual words and phrases can have semantic prosodies. Michael Stubbs (1996: 176) states that semantic prosody is a particular collocational phenomenon and classifies it into three categories: negative prosody, positive prosody and neutral prosody. The node word bears a strong negative prosody if its collocates are mainly of strong negative semantic characteristics. The node word bears a strong positive prosody if its collocates are mainly of strong positive semantic characteristics. If both positive and negative collocates exist in the context, the node word can be said to bear a neutral or mixed prosody. Some words have a predominantly negative prosody. For example, Wei (2002a) found that *incidence* typically collocates with words referring to diseases or defects, such as *infections*, *HIV*, *injury*, *colon cancer*, *defects*,

disruption, cracking, and so on. A few words have a positive prosody. For example, Stubbs (1995) found that *provide* mainly collocates with words related to services or help, such as *facilities, information, services, aid, assistance, help, support, care, food, money, nourishment, protection, security*, and so on. Many words are neutral or mixed in this respect. The main collocates of *probability of* can be divided into three categories: neutral collocates, such as *percent, change, occurrence* and *prototype structure*; positive collocates, such as *success, survival, acquisition, and winning*; negative collocates, such as *failure, accidents, error, loss, malfunction, and deficiency* (Wei 2002b).

In this paper, near synonyms refer to lexical pairs that have very similar cognitive meanings or denotational meanings, but which may differ in collocations or semantic prosodies. Synonymous words, therefore, are not collocationally interchangeable (Tognini-Bonelli 2001: 34). For example, Halliday (1976: 73) observed that although *strong* and *powerful* share similar denotational meanings, tea is typically described as *strong* rather than *powerful* whereas a car is more likely to be described as *powerful* than *strong*. In addition to different collocational behavior, near synonyms may also differ in semantic prosodies. For example, Tognini-Bonelli (2001: 18-24) notes that *fickle* is negative whereas *flexible* is positive. Other sets of synonyms that have attracted attention include *absolutely, completely* and *entirely* (Partington 1998), *big, large* and *great* (Biber et al. 1998), *quake* and *quiver* (Atkins & Levin 1995), *principal, primary, chief, main* and *major* (Liu 2010), and *actually, genuinely, really, and truly* (Liu & Espino, 2012).

3. Method

3.1 Corpus Data: BNC

The British National Corpus (BNC) is a 100 million word collection of samples of written and spoken language from a wide range of sources, which is designed to represent a wide cross-section of British English from the later part of the 20th century, both spoken and written (Aston & Burnard, 1998). The written part of the BNC (90%) includes extracts from regional and national newspapers, specialist periodicals and journals for all ages and interests, academic books and popular fiction, published and unpublished letters and memoranda, school and university essays, among many other kinds of text. The spoken part (10%) consists of orthographic transcriptions of unscripted informal conversations and spoken language collected in different contexts, ranging from formal business or government meetings to radio shows and phone-ins.

BNC is monolingual, synchronic, general and sample-based by nature. It deals with modern British English, covers British English of the late twentieth century, includes many different styles and varieties instead of being limited to any particular subject field, genre or register, and that it contains many samples which allows for a wider coverage of texts within the 100 million limit.

3.2 Corpus Tool and Analytic Procedures

The Sketch Engine (SkE) is a leading corpus tool, widely used in lexicography, language teaching, translation and the like (Kilgarriff *et al.*, 2004, 2014). It includes two different things: the software, and the web service. The web service includes, as well as the core software, a large number of corpora pre-loaded and 'ready for use', and tools for creating, installing and managing users' own corpora. Corpora in SkE are often annotated with

additional linguistic information, the most common being part of speech information (for example, whether something is a noun or a verb), which allows large-scale grammatical analyses to be carried out.

The span (the number of words left and right of the search word) is (-5, 5), the minimum frequency of each collocate being set 5 and minimum frequency in given range (in our case -5, 5) 3. Of seven measures to calculate the strength of collocation (T-score, MI, MI3, log likelihood, min. sensitivity, and LogDice), I choose the default one *logDice* which is considered more reliable than the frequently used MI (mutual information) measure.

4. Results and Analysis

4.1 The Frequency of GIVE RISE TO, BRING ABOUT, AROUSE, RESULT IN, LEAD TO and CAUSE in BNC

Table 1: Frequencies of GIVE RISE TO, BRING ABOUT, AROUSE, RESULT IN, LEAD TO and CAUSE per million words in BNC

	give rise to	bring about	arouse	result in	lead to	cause
Total	734	757	1,407	2,523	5,195	20,030
Per million	6.53	6.74	12.52	22.50	46.20	178.29

As is shown in table 1, the frequency of GIVE RISE TO in BNC is the lowest among the CAUSE-words, followed by BRING ABOUT, AROUSE, RESULT IN and LEAD TO, and the frequency of CAUSE is the highest.

4.2 The Collocates and Semantic Prosodies of GIVE RISE TO in BNC

Table 2: The top 50 collocates of GIVE RISE TO in BNC

Rank	Collocates	Freq.	logDice	Rank	Collocates	Freq.	logDice
1	liability	3613	7.61464	26	inevitably	2555	5.90153
2	dipole	112	7.27549	27	transform	917	5.89584
3	vibration	436	7.12964	28	disputes	1469	5.89475
4	breach	3130	7.08412	29	resentment	955	5.86301
5	symmetric	344	6.92586	30	delays	1036	5.79543
6	IR	359	6.90592	31	stretching	1115	5.73243
7	estoppel	93	6.89322	32	molecular	1166	5.69318
8	Raman	175	6.75683	33	situations	3802	5.66015
9	modes	1176	6.68561	34	commitments	1272	5.61486
10	damages	2158	6.67207	35	conflict	5647	5.53036
11	nuisance	945	6.60854	36	uncertainty	2103	5.52985
12	destined	771	6.44445	37	obligation	2162	5.50015
13	inference	482	6.33703	38	circumstances	10156	5.49617
14	bands	2177	6.30006	39	varying	1745	5.30942
15	crystals	536	6.27435	40	duty	7575	5.30147
16	conflicts	1395	6.26597	41	controversy	1778	5.29034

17	complexes	551	6.25741	42	rocks	2686	5.26022
18	instability	568	6.23845	43	doubts	1941	5.19964
19	motions	619	6.18302	44	mechanisms	1961	5.18889
20	difficulties	6638	6.05905	45	problems	26466	5.17557
21	fluctuations	753	6.04677	46	errors	1991	5.17292
22	hazard	787	6.01416	47	claim	11098	5.17003
23	sensation	1316	5.99859	48	genes	2017	5.15922
24	flows	1444	5.91121	49	criminal	4012	5.10943
25	populations	1452	5.90592	50	transaction	2156	5.08811

Table 2 lists the top 50 collocates of GIVE RISE TO in BNC automatically generated by the SkE. Further examination suggests that 31 out of 50 (62%) collocates of GIVE RISE TO are neutral: *dipole, vibration, symmetric, IR, Raman, modes, destined, inference, bands, crystals, complexes, motions, fluctuations, sensation, flows, populations, inevitably, transform, stretching, molecular, situations, commitments, obligation, circumstances, varying, duty, rocks, mechanisms, claim, genes* and *transaction*. Of the above collocates, *sensation* always appear with words of unpleasant meanings. For instance, *sensation of harassment (pain)*. These negative collocations render the occurrences of GIVE RISE TO negative meanings. When the other 30 words collocates with GIVE RISE TO, the meanings of the occurrences can be positive (1), neutral (2) or negative (3).

(1) A systematic search for the pair of NTPs that led to the formation of stable initiated complexes (to be shown and discussed below) indicated that only the simultaneous presence of GTP and UTP could give rise to stable **complexes**, indicating that these were the first two NTPs incorporated at both promoters.

(2) Subsequent layers of the same crystal will copy the same flaw, and if the crystal breaks in two it will give rise to a sub-population of altered **crystals**.

(3) These inequalities **inevitably** give rise to resentment.

19 out of 50 (38%) significant collocates of GIVE RISE TO are negative: *liability, breach, estoppel, damages, nuisance, conflicts, instability, difficulties, hazard, disputes, resentment, delays, conflict, uncertainty, controversy, doubts, problems, errors* and *criminal*. When these negative companies collocate with GIVE RISE TO, the occurrences show negative meanings, as shown in (4) to (7)

(4) It is not thought likely that this would give rise to any greater risk of **breach** of confidentiality of clients' affairs than that involved with the rest of the staff.

(5) Solid manure stores, carefully sited and tended, are less likely to give rise to **nuisance** problems than is liquid storage in the form of a slurry.

(6) Reason: 'To ensure that the operation of the plant does not give rise to an environmental **hazard** or danger to public health'.

(7) In addition, the making of false statements (whether in adverts or otherwise) which are made either knowingly or recklessly may give rise to a **criminal** prosecution under section 14(1) Trade Descriptions Act 1968.

From the above analysis, we can see that 60% collocates of GIVE RISE TO are neutral, while 40% are negative.

4.3 The Collocates and Semantic Prosodies of BRING ABOUT in BNC

Table 3: The top 50 collocates of BRING ABOUT in BNC

Rank	Collocates	Freq.	logDice	Rank	Collocates	Freq.	logDice
1	downfall	323	7.92318	26	harmony	1066	5.75286
2	improvements	2281	7.43109	27	recovery	3602	5.71757
3	reconciliation	626	7.37377	28	emergence	1200	5.65053
4	renaissance	200	7.09762	29	sanctions	1254	5.61127
5	desired	1641	7.09431	30	mechanisms	1961	5.59167
6	change	30334	6.97061	31	collaboration	1301	5.57794
7	changes	18220	6.62093	32	hopefully	1469	5.46472
8	lasting	1246	6.61702	33	equilibrium	1601	5.38161
9	renewal	967	6.57038	34	tragedy	1615	5.37307
10	transformations	325	6.50548	35	reform	4982	5.32077
11	unity	2249	6.44637	36	thereby	2601	5.28661
12	redistribution	389	6.42257	37	fundamental	4368	5.26163
13	withdrawal	1930	6.41557	38	revolutionary	1827	5.24957
14	revolution	3321	6.32828	39	shift	3855	5.15075
15	improvement	3916	6.2693	40	desirable	2068	5.12093
16	realization	537	6.24734	41	intervention	3067	5.09913
17	reduction	4690	6.17372	42	significant	11830	5.08079
18	undesirable	611	6.16711	43	helping	4104	5.07489
19	helped	7356	6.10144	44	transition	2234	5.03855
20	collapse	2480	5.92452	45	flexible	2269	5.02177
21	peace	7507	5.89427	46	attempting	2330	4.99297
22	efforts	5363	5.88012	47	outcome	3587	4.91519
23	peaceful	1556	5.82445	48	sufficient	5831	4.89934
24	transformation	1638	5.77419	49	dramatic	3696	4.87944
25	destruction	2241	5.77214	50	reforms	2716	4.823

Table 3 lists the top 50 collocates of BRING ABOUT in BNC automatically generated by the SkE. Further examination suggests that 17 out of 50 (34%) collocates of BRING ABOUT in BNC are positive: *improvements, reconciliation, renaissance, desired, renewal, unity, improvement, peace, peaceful, harmony, recovery, collaboration, hopefully, equilibrium, desirable, significant* and *flexible*. When these favourable companies collocate with BRING ABOUT, the occurrences show positive meanings, as shown in (8) to (11).

(8) You may be the one person to bring about **improvements** which will benefit many others as well as yourself.

(9) Therefore, monetarists have resorted to the claim that governments can exert control over the money stock if they are determined enough, and in so doing will bring about the **desired** effect on money incomes and prices

(10) In this chapter, I shall attempt to separate the parts that make up the whole, then to explore some of the ways in which we may bring about **harmony** to mind-body-spirit

(11) It dramatically increased awareness of the Bank in the marketplace and helped bring about a **significant** increase in sales - particularly Gold 90 Accounts.

27 out of 50 (54%) collocates of BRING ABOUT are neutral: *change, changes, lasting, transformations, redistribution, withdrawal, revolution, realization, reduction, helped, efforts, transformation, emergence, mechanisms, reform, thereby, fundamental, revolutionary, shift, intervention, helping, transition, attempting, outcome, sufficient, dramatic* and *reforms*. 2 of the above collocates (*lasting* and *efforts*) always appear with words of pleasant meanings. For instance, *lasting peace (reconciliation), efforts to bring about a ceasefire (improvements, enhanced standards, a general peace)*. These positive collocations render the occurrences of BRING ABOUT positive meanings, as shown in (12).

(12) The NATO leaders deplored the fighting in Yugoslavia and called on all parties to co-operate with international **efforts** to bring about a ceasefire.

Besides, although 4 other collocates are neutral (*redistribution, transition, attempting, outcome*), these words always appear in longer co-texts of pleasant meanings. The extended contexts render the occurrences of BRING ABOUT positive meanings, as shown in (13) and (14).

(13) Like most Labour activists, my main political concern is to bring about a **redistribution** of wealth and power in society that will end the twin scourges of mass poverty and mass unemployment.

(14) Shakespeare produced a series of outstanding tragic works. Shakespeare tried to bring about a **transition**. When BRING ABOUT collocates with *change, changes, transformations, withdrawal, revolution, realization, reduction, helped, transformation, emergence, mechanism, reform, thereby, fundamental, revolutionary, shift, intervention, helping, sufficient, dramatic* and *reforms*, the meanings of the occurrences can be positive (15), neutral (16) or negative (17).

(15) Community work is essentially concerned with affecting the course of social change through the two processes of analysing social situations and forming relationships with different groups to bring about some desirable **change**.

(16) This is not to deny, of course, that individuals are causal subjects; they fill various social roles, engage in the work of production, and **thereby** bring about changes in the social world.

(17) If we find out who killed the Daine projection, I figure we can bring about some sort of **dramatic** crisis and finish the whole thing off.

6 out of 50 (12%) collocates of BRING ABOUT are negative: *downfall, undesirable, collapse, destruction, sanctions* and *tragedy*. When these unpleasant companies collocate with BRING ABOUT, the occurrences show negative meanings, as shown in (18) to (20).

(18) When an agreement was drawn up in 1922 between the Vatican and the Soviet government for a Catholic famine relief mission, some Orthodox leaders in Western Russia declared that the Communists hoped that Catholic propaganda would bring about the **downfall** of the whole Orthodox Church.

(19) The main reason these managers have power is because they possess rewards desired by employees and

have the ability to bring about **undesirable** outcomes for those that do not comply with directives.

(20) It is these economic stresses which bring about the **tragedy** of Margaret and her family and lead eventually to the Ruined Cottage, which remains as a symbol of these afflictions.

From the above analysis, we can see that 46% significant collocates of BRING ABOUT are positive, 42% are neutral and 12% are negative.

4.4 The Collocates and Semantic Prosodies of AROUSE in BNC

Table 4: The top 50 collocates of AROUSE in BNC

Rank	Collocates	Freq.	logDice	Rank	Collocates	Freq.	logDice
1	suspicious	578	9.65979	26	sensations	437	6.73634
2	suspicion	1540	9.28232	27	stimuli	873	6.65254
3	curiosity	1011	9.18667	28	envy	689	6.55154
4	passions	245	8.83356	29	contemporaries	818	6.46537
5	hostility	1299	8.72734	30	fury	901	6.41253
6	emotions	1821	8.6655	31	hatred	976	6.3664
7	controversy	1778	8.45039	32	revulsion	206	6.34447
8	sexually	963	8.18165	33	instincts	635	6.32616
9	indignation	391	8.09471	34	fears	3106	6.31956
10	resentment	955	8.04213	35	emotionally	656	6.3114
11	feelings	5081	7.89103	36	slides	707	6.27617
12	interest	26490	7.5268	37	scorn	338	6.23099
13	opposition	7374	7.48479	38	among	19304	6.18545
14	anger	3445	7.2792	39	unease	400	6.18062
15	jealousy	622	7.18337	40	widespread	3158	6.16553
16	ire	39	7.08711	41	admiration	913	6.14202
17	anxiety	2476	7.07704	42	memories	2336	6.13002
18	sympathy	2022	7.06378	43	emotion	1446	6.1067
19	expectations	3121	7.02527	44	anxieties	498	6.10442
20	excitement	2453	6.99251	45	fierce	1463	6.09813
21	considerable	9260	6.90454	46	laughter	1959	6.09054
22	antagonism	259	6.88279	47	criticism	4405	6.08014
23	wrath	276	6.86814	48	Curiosity	58	6.06828
24	enthusiasm	2830	6.85806	49	commoners	101	6.02654
25	passion	1910	6.76377	50	strong	15314	6.01502

Table 4 lists the top 50 collocates of the verb AROUSE in BNC automatically generated by the SkE. Further examination suggests that 10 out of 50 (20%) collocates of AROUSE in BNC are positive: *curiosity*, *passions*, *interest*, *sympathy*, *excitement*, *enthusiasm*, *passion*, *admiration*, *laughter* and *Curiosity*. When these pleasant companies collocate with AROUSE, the occurrences show positive meanings, as shown in (21) and (22).

(21) Her heart clenched inside her as she thought of Guido and the dizzy, consuming **passions** he aroused in her.

(22) I have to admit that in my own university tutorials references to Dennis Potter's television series *The*

Singing Detective or to the film Dead Poets Society arouse **enthusiasm** from students who have little to say about writers such as Spenser, Milton and Pope.

17 out of 50 (34%) significant collocates of AROUSE in BNC are neutral: *emotions, sexually, feelings, expectations, considerable, sensations, stimuli, contemporaries, instincts, emotionally, slides, among, widespread, memories, emotion, commoners* and *strong*. When these words collocates AROUSE, the meanings of the occurrences can be positive (23), neutral (24), or negative (25).

(23) Hence the American edition contains several additional sentences of description, in which we find that Michell now has a 'smile of amused friendliness and pleasure', which often 'aroused **feelings** of warmth, and sometimes more, in many women'.

(24) Studies which use arousing **stimuli** as the items to be remembered often produce results which can be described simply in terms of von Restorff effects.

(25) But here too the 'rolling programme' aroused intense opposition from the **commoners**, whose rights it threatened.

23 out of 50 (46%) significant collocates of AROUSE are negative: *suspicious, suspicion, hostility, controversy, indignation, resentment, opposition, anger, jealousy, ire, anxiety, antagonism, wrath, envy, fury, hatred, revulsion, fears, scorn, unease, anxieties, fierce* and *criticism*. When these unfavorable companies collocate with AROUSE, the occurrences show negative meanings, as shown in (26) to (29).

(26) The gaps are bound to undermine trust and arouse **suspicious**.

(27) He was a powerfully built man, who had aroused **resentment** at the firm because he had constantly called the administration staff morons!

(28) John was not universally popular with his new colleagues any more than he had been at the Wells; his ambition aroused suspicion, scorn, **envy** or fear in some, and his sense of fun (including a rather observant line in mimicry) left barbs in some of its victims.

(29) Since its submission for debate at the end of May the plan, and especially the swinging price rises it entailed, had aroused **fierce** opposition among politicians and the public.

From the above analysis, we can see that 20% collocates of AROUSE are positive, 34% are neutral and 46% are negative.

4.5 The Collocates and Semantic Prosodies of RESULT IN in BNC

Table 5: The top 50 collocates of RESULT IN in BNC

Rank	Collocates	Freq.	logDice	Rank	Collocates	Freq.	logDice
1	loss	11122	7.43384	26	delay	3050	5.87769

2	reduction	4690	7.39307	27	dismissal	1409	5.86631
3	Failure	413	6.9398	28	poorer	863	5.8596
4	inevitably	2555	6.68996	29	formation	3687	5.85905
5	may	111435	6.47798	30	pregnancy	1456	5.84916
6	increase	16661	6.44481	31	necessarily	5597	5.82009
7	losses	3696	6.39753	32	lower	11429	5.81678
8	savings	2608	6.37542	33	injury	4515	5.80401
9	likely	22925	6.22272	34	glider	426	5.79592
10	improvement	3916	6.15473	35	significant	11830	5.7759
11	changes	18220	6.11909	36	eventually	7244	5.7463
12	COSE	330	6.1067	37	reductions	1210	5.71884
13	prosecution	1817	6.08645	38	greater	13772	5.7083
14	failure	7267	6.06483	39	structural	2541	5.69394
15	increased	12655	6.0645	40	alteration	682	5.67582
16	activation	534	6.00706	41	conviction	1974	5.67261
17	being	86073	5.99967	42	consumer's	69	5.66015
18	saving	2209	5.96169	43	error	3358	5.64808
19	will	245313	5.94825	44	considerable	9260	5.64551
20	severe	4404	5.94242	45	could	156553	5.63353
21	improvements	2281	5.9399	46	would	240948	5.62625
22	infections	694	5.93346	47	employers	3555	5.60054
23	unnecessary	1805	5.92052	48	kernel	202	5.58796
24	higher	15008	5.90238	49	accumulator	216	5.58057
25	closure	1879	5.89606	50	deaths	2322	5.56507

Table 5 lists the top 50 collocates of RESULT IN in BNC automatically generated by the SkE. Further examination suggests that 4 out of 50 (8%) collocates of RESULT IN in BNC are positive: *savings, improvement, saving* and *improvements*. When these pleasant companies collocate with RESULT IN, the occurrences show positive meanings, as shown in (30) and (31).

(30) The new Home Delivered Readers Club offers discount vouchers and a card which can result in big **savings** for the shopper.

(31) Use of the intelligent training system can result in significant **improvements** of up to 50% in speed together with qualitative improvements in how the fault-finder tackles a fault.

31 out of 50 (62%) collocates of RESULT IN are neutral: *reduction, inevitably, may, increase, likely, changes, COSE, increased, activation, being, will, higher, closure, formation, pregnancy, necessarily, lower, glider, significant, eventually, reductions, greater, structural, alteration, consumer's, considerable, could, would, employers, kernel* and *accumulator*. Although 3 collocates are neutral (*COSE, employers* and *kernel*), these words always appear in longer co-texts of positive meanings. The extended contexts render the occurrences of RESULT IN pleasant meanings, as shown in (32) and (33). Besides, of the above collocates, *consumer's* always appears with words of unpleasant meanings. For instance, *result in injury (damage) to the consumer's life or property*.

(32) It's worth remembering that Unix Labs has maintained from the beginning that **COSE** would eventually result in an agreement on the kernel, namely System V.4 or its descendent.

(33) The agreement will also result in **employers** working more closely than before with students and teachers in schools and colleges, to broaden their understanding of the world of work.

When RESULT IN collocates with *reduction, inevitably, may, increase, likely, changes, increased, activation, being, will, higher, closure, formation, pregnancy, necessarily, lower, glider, significant, eventually, reductions, greater, structural, alteration, considerable, could and would*, the meanings of the occurrences can be positive (34), neutral (35) or negative (36).

(34) By contrast, legend has it that in some cases, a single observation **may** result in a great discovery and here we've got one or two examples.

(35) The marathon will result in the **closure** of a large number of London streets on Sunday.

(36) The declining number of school leavers, many of whom enter nursing, will result in an even **greater** shortage of students of nursing than was experienced in the late 1960s.

15 out of 50 (30%) significant collocates of RESULT IN are negative: *loss, Failure, losses, prosecution, failure, severe, infections, unnecessary, delay, dismissal, poorer, injury, conviction, error and deaths*. When these unfavorable companies collocate with RESULT IN, the occurrences show negative meanings, as shown in (37) to (40).

(37) Decommissioning the station will cost £220 million and will result in the **loss** of 490 jobs over the next two years.

(38) The new athletic demands on untrained muscles and tendons produce the inflammation, pain and weakness that can result in **severe** and permanent disability.

(39) A mis-diagnosis can result in **unnecessary** component removal and systems disturbance with the associated expansion of departure delay time.

(40) Neither side will compromise which will result in the **deaths** of yet more people, unfortunately.

From the above analysis, we can see that 14% significant collocates of RESULT IN are positive, 54% are neutral and 32% are negative.

4.6 The Collocates and Semantic Prosodies of LEAD TO in BNC

Table 6: The top 50 collocates of LEAD TO in BNC

Rank	Collocates	Freq.	logDice	Rank	Collocates	Freq.	logDice
1	inevitably	2555	7.53945	26	will	245313	6.53718
2	confusion	2714	7.51015	27	changes	18220	6.52925
3	reduction	4690	7.34368	28	chaos	1268	6.51194
4	likely	22925	7.32922	29	higher	15008	6.50507
5	may	111435	7.25588	30	would	240948	6.47241

6	loss	11122	7.21537	31	outcomes	866	6.43466
7	increase	16661	7.16922	32	losses	3696	6.40543
8	increased	12655	7.12429	33	substantial	6037	6.40265
9	greater	13772	7.0742	34	prices	9216	6.39457
10	conclusion	4364	7.06276	35	frustration	1285	6.33822
11	ultimately	2489	7.04655	36	rapid	3376	6.32707
12	eventually	7244	7.04127	37	deterioration	720	6.27719
13	could	156553	6.96574	38	depression	1989	6.27689
14	necessarily	5597	6.85025	39	tends	2412	6.27681
15	improvement	3916	6.84661	40	collapse	2480	6.26397
16	improvements	2281	6.83239	41	damage	8057	6.26027
17	conflict	5647	6.80511	42	efficiency	3492	6.23729
18	can	224417	6.79664	43	disaster	2648	6.23274
19	improved	4631	6.73761	44	severe	4404	6.23076
20	problems	26466	6.73608	45	rise	10224	6.21686
21	might	58844	6.69867	46	eventual	1010	6.20814
22	formation	3687	6.63822	47	inefficient	572	6.20683
23	creation	4394	6.63082	48	serious	11716	6.20225
24	increases	4172	6.56152	49	further	32318	6.19721
25	difficulties	6638	6.55693	50	conclusions	2048	6.17763

Table 6 lists the top 50 collocates of LEAD TO in BNC automatically generated by the SkE. Further examination suggests that 4 out of 50 (8%) collocates of LEAD TO in BNC are positive: *improvement*, *improvements*, *improved* and *efficiency*. When these pleasant companies collocate with LEAD TO, the occurrences show positive meanings, as shown in (41) and (42).

(41) Er this is a strategic issue and it can lead to pos a positive environmental **improvement**.41

(42) It should lead to a greater **efficiency** among the police and give a much-needed boost to the fight against crime.

30 out of 50 (60%) significant collocates of LEAD TO are neutral: *inevitably*, *reduction*, *likely*, *may*, *increase*, *increased*, *greater*, *conclusion*, *ultimately*, *eventually*, *could*, *necessarily*, *can*, *might*, *formation*, *creation*, *increases*, *will*, *changes*, *higher*, *would*, *outcomes*, *substantial*, *prices*, *rapid*, *tends*, *rise*, *eventual*, *further* and *conclusions*. When LEAD TO collocates with these words, the meanings of the occurrences can be positive (43), neutral (44) or negative (45).

(43) Quite apart from the help to me, I think it would be of benefit to the Society to encourage research, which would **inevitably** lead to a better understanding of the BCR's difficulties and the important part it played in the district's life.

(44) All the narrow streets **eventually** seem to lead to the harbour.

(45) The continued addictive use of any substance or behaviour **tends** in time to lead to problems and to damaging consequences of use.

16 out of 50 (32%) significant collocates of LEAD TO are negative: *confusion, loss, conflict, problems, difficulties, chaos, losses, frustration, deterioration, depression, collapse, damage, disaster, severe, inefficient* and *serious*. When these negative companies collocate with LEAD TO, the occurrences show negative meanings, as shown in (46) to (49).

(46) At the top of the backswing, deliberately trying to push from the inside of the right foot, and trying to force the hips to drive forward, will lead to a great deal of **confusion** in your golf swing.

(47) There are now two breeds of cat available that do not appear to cause allergic responses, which with an ordinary cat would lead to breathing **difficulties** and an asthmatic condition.

(48) Past experience in Germany and other countries in the inter-war years suggests that hyper-inflation can ultimately lead to the **collapse** of the economic and political system as well.

(49) Take care not to draught-proof rooms too efficiently if they contain fuel-burning appliances, since lack of an adequate air supply could lead to **inefficient** combustion and a build-up of dangerous fumes.

From the above analysis, we can see that 8% significant collocates of LEAD TO are positive, 60% are neutral and 32% are negative.

4.7 The Collocates and Semantic Prosodies of CAUSE in BNC

Table 7: The top 50 collocates of CAUSE (verb) in BNC

Rank	Collocates	Freq.	logDice	Rank	Collocates	Freq.	logDice
1	damage	8057	10.46198	26	problem	28091	7.38814
2	problems	26466	9.57333	27	suffering	4132	7.34644
3	harm	2813	8.95516	28	cancer	3668	7.31301
4	injury	4515	8.67895	29	which	361203	7.31144
5	trouble	8488	8.62248	30	accident	5746	7.277
6	death	18411	8.38435	31	grievous	282	7.27492
7	by	486725	8.20863	32	stress	4591	7.27038
8	distress	1433	8.20289	33	anxiety	2476	7.2699
9	pain	6727	8.19926	34	fall	10517	7.251
10	concern	9486	8.18971	35	embarrassment	1234	7.23858
11	loss	11122	8.16043	36	delay	3050	7.23356
12	bodily	903	8.09772	37	can	224417	7.20413
13	severe	4404	8.01585	38	chaos	1268	7.17616
14	serious	11716	7.99408	39	great	39575	7.17028
15	difficulties	6638	7.91923	40	fire	12143	7.15572
16	confusion	2714	7.91912	41	inconvenience	421	7.10638
17	disease	8534	7.87051	42	among	19304	7.10283
18	pollution	3322	7.70791	43	widespread	3158	7.09882
19	disruption	860	7.6829	44	changes	18220	7.09876
20	deaths	2322	7.68117	45	delays	1036	7.0968

21	may	111435	7.61773	46	controversy	1778	7.06316
22	considerable	9260	7.60482	47	rise	10224	7.0459
23	injuries	2441	7.5215	48	driving	6021	7.01745
24	likely	22925	7.47365	49	This	110097	7.01606
25	offence	3685	7.46649	50	stir	923	7.00268

Table 7 lists the top 50 collocates of the verb CAUSE in BNC automatically generated by the SkE. Further examination suggests that 35 out of 50 (70%) collocates of CAUSE are negative: *damage, problem, harm, injury, trouble, death, distress, pain, concern, loss, sever, serious, difficulties, confusion, disease, pollution, disruption, death, injuries, offence, problem, suffering, cancer, accident, grievous, stress, anxiety, fall, embarrassment, delay, chaos, fire, inconvenience, delays* and *controversy*. These examples of unpleasant company collocate with CAUSE so frequently that the typical use of this word shows a negative affective meaning. As shown in (50) to (54).

- (50) While HCFCs break down much more quickly in the stratosphere and are therefore not as dangerous as CFCs, they will still cause great **damage** to the ozone layer because of the large amounts being released into the atmosphere, according to the report.
- (51) Does he recognise, for example, that insisting on veterinary reports may cause problems in that the examinations may cause **distress** to animals as well as additional cost to the farmer, who may not be compensated?
- (52) But even where there is no real warfare, man's inhumanity to children has caused **serious** deprivations of rights and of benefits generally.
- (53) The criticisms contained in the report are expected to cause considerable **embarrassment** to the government, which maintains that since energy saving reduces costs it will come about naturally if market forces are allowed to function without interference.
- (54) The best-known example is *Hollier v Rambler Motors (AMC) Ltd [1972] 2 QB 71* where a garage took cars for repair on terms that "the company is not responsible for damage caused by **fire** to customers' cars on the premises".

15 out of 50 (30%) collocates of CAUSE in BNC are neutral: *by, bodily, may, considerable, likely, which, can, great, among, widespread, changes, rise, driving, This* and *stir*. Four of the above neutral collocates (*bodily, considerably, great* and *widespread*) tend to appear with words of unfavorable meanings. For instance, *bodily harm (injury), considerably controversy (embarrassment, inconvenience, delay, damage, problem, grief, etc.), great damage (frustration, uncertainty, panic, problems, hardship, fear, poverty, etc.), widespread damage (air pollution, environmental damage, unintentional death, devastation, error, fears, etc.)*. These negative collocations render the occurrences of CAUSE negative meanings, as shown in (55) and (56). In these two examples, *bodily* and *widespread* appears quite neutral. Nevertheless, the neutrality is immediately trades off by *harm* and *air pollution*.

(55) In Miller, in 1954, the wife had petitioned for divorce, after which her husband attacked and raped her, causing her actual bodily **harm**.

(56) The burning oil wells of Kuwait continue to cause **widespread** air pollution, notably in the form of “black rain”, which has been reported as far away as Bulgaria, Afghanistan and Pakistan.

Besides, eight other neutral collocates (*by, may, likely, which, can, among, driving and This*) are always used in constructions of negative meanings. For instance, *salination (black rain, degeneracy, soil erosion, illnesses, acid rain, etc.) caused by, may cause disastrous environmental consequences (allergic reactions, minor stomach upsets, adverse effects, damage, etc.), likely to cause death (problems, harm, financial loss, pollution, danger, etc.), which causes disease (mental and physical retardation, cancer, dangerous levels of pollution, acid rain, etc.), can cause mental and physical retardation (high blood pressure, cancer, loss, headaches, death, flooding, haemorrhage, difficulties, etc.), cause skin disease (deaths, controversy, concern, disquiet, outcry, frustration, panic, etc.) among, causing death by reckless driving, this may cause confusion (problems, difficulty, stress, uncertainty, etc.)*. The seemingly neutral occurrences of CAUSE are often offset by these negative constructions, as shown in (57) and (58).

(57) Viruses are carried in the seawater from sewage outfalls, and while some **may** only cause minor stomach upsets, others, including coxsachie and echo viruses, could lead to hepatitis, meningitis and quasi-paralytic disorders.

(58) Defence experts indicated that the incident, which occurred during naval exercises some 80 miles west of Izmir, might have been caused by excessive stress **among** junior officers prompted by a long spell at sea.

However, when CAUSE collocates with *changes, rise and stir*, the meanings of the occurrences can be positive (59), neutral (60) or negative (61). In (59), *stir* appears neutral, but the extended context *marvelously done and approval* renders the sentence positive meaning. In (61), *rise* appears neutral, but its neutrality is offset by *catastrophic*.

(59) They are marvellously done, and they have caused a **stir** of approval in this country, while also raising doubts.

(60) Such movements would cause **changes** both in the projected area and in the reflected light received by the camera.

(61) Glaciologists meeting to discuss the impact of global warming on the Antarctic ice sheet have concluded that they are not sure whether rising temperatures could cause a catastrophic **rise** in sea levels.

From the above analysis, we can see that 6% significant collocates of CAUSE are neutral, and the remaining 94% are negative.

4.8 Summary

Table 8: Distribution of CAUSE-words across meaning categories in BNC

Synonyms	Positive	Neutral	Negative
CAUSE	0%	6%	94%
AROUSE	20%	34%	46%
LEAD TO	8%	60%	32%
RESULT IN	14%	54%	32%
GIVE RISE TO	0%	60%	40%
BRING ABOUT	46%	42%	12%

From the above analysis, we can see that the collocations of CAUSE, AROUSE, LEAD TO, RESULT IN, GIVE RISE TO and BRING ABOUT are quite different. Besides, as can be seen from table 8, the semantic prosodies of these near synonyms also vary. The semantic prosody of CAUSE is typically negative. The semantic prosodies of AROUSE, LEAD TO, RESULT IN and GIVE RISE TO are typically neutral and negative. And the semantic prosodies of BRING ABOUT are typically positive and neutral.

5. Conclusion

This paper has explored the usage of GIVE RISE TO, BRING ABOUT, AROUSE, RESULT IN, LEAD TO and CAUSE in British National Corpus with SkE. The results show that these near synonyms differ in their collocational behavior and semantic prosodies.

This study has a number of pedagogical implications. First, since near synonyms usually differ in their collocations and semantic prosodies, the traditional practice of explaining meanings to learners by offering synonyms should be used with caution. Teaching synonyms in this way can be a potential trap for learners which emphasizes the denotational meaning of words rather than their usage (Tognini-Bonelli 2001: 34). In practice, vocabulary, including synonyms, should be taught in a context that provides cues from which the learner can recall meaning and usage. Second, as there exist a huge number of synonyms in English, it would be unlikely for teachers to teach the collocational behaviour and semantic prosody of all the synonyms to students. It might be more promising to teach students how to use corpora and corpus tools to conduct their own research.

References

- Atkins, B., & Levin, B. (1995). Building on a corpus: A linguistic and lexicographical look at some near-synonyms. *International Journal of Lexicography*, 8(2), 85–114.
- Aston, G., & Burnard, L. (1998). *BNC Handbook: Exploring the British National Corpus with SARA*. Edinburgh: Edinburgh University Press.
- Biber, D., Conrad, S., & Reppen, R. (1998). *Corpus Linguistics: Investigating Language Structure and Use*. Cambridge, UK: Cambridge University Press.
- Firth, J. (1957). *Papers in Linguistics*. Oxford: Oxford University Press.
- Firth, J. (1968). *Selected Papers of J. R. Firth 1952–1959*. F. R. Palmer (ed.). London: Longman.
- Hunston, S. (2002). *Corpora in Applied Linguistics*. Cambridge: Cambridge University Press.
- Kilgarriff, A., Rychly, P., Smrz, P., & Tugwell, D. (2004). *The Sketch Engine*. Proc Euralex, Lorient, France.
- Kilgarriff, A., Baisa, V., Bušta, J., Jakubíček, M., Kovář, V., Michelfeit, J., Rychlý, P. & Suchomel, V. (2014). “The Sketch Engine: Ten years on”. *Lexicography*, 1, 7–36.
- Liu, D. (2010). Is it a chief, main, major, primary, or principal concern? A corpus-based behavioral profile study of the near-synonyms. *International Journal of Corpus Linguistics*, 15(1), 56–87.
- Liu, D., & Espino, M. (2012). Actually, Genuinely, Really, and Truly: A corpus-based Behavioral Profile study of near-synonymous adverbs. *International Journal of Corpus Linguistics*, 17(2), 198–228.
- Louw, B. (1993). ‘Irony in the text or insincerity in the writer? The diagnostic potential of semantic prosodies’ in M. Baker, G. Francis, & E. Tognini-Bonelli (eds.): *Text and Technology: In Honour of John Sinclair*. Amsterdam: John Benjamins, pp. 157-76.
- Louw, B. (2000). ‘Contextual prosodic theory: Bringing semantic prosodies to life’ in C. Heffer, H. Sauntson, and G. Fox (eds.): *Words in Context: A Tribute to John Sinclair on his Retirement*. Birmingham: University of Birmingham.
- Partington, A. (1998). *Patterns and Meanings*. Amsterdam: John Benjamins.
- Schmitt, N., & Carter, R. (2004). ‘Formulaic sequences in action: An introduction’ in N. Schmitt (ed.): *Formulaic Sequences*. Amsterdam: John Benjamins, pp. 1-22.
- Sinclair, J. (1991). *Corpus, Concordance, Collocation*. Oxford: Oxford University Press.
- Sinclair, J., Jones, S., Daley, R. & Krishnamurthy, R. (2004). *English Collocational Studies: The OSTI Report*. London: Continuum.
- Stubbs, M. (1995). Collocations and semantic profiles: On the cause of the trouble with quantitative methods. *Function of Language*, 2, 1–33.
- Stubbs, M. (1996). *Text and Corpus Linguistics*. Oxford: Blackwell.

Stubbs, M. (2001). *Words and Phrases*. Oxford: Blackwell.

Tognini-Bonelli, E. (2001). *Corpus Linguistics at Work*. Amsterdam: John Benjamins.

Wei, N. (2002a). Research methods in studies of semantic prosody. *Foreign Language Teaching and Research*, 34, 300-307.

Wei, N. (2002b). A Corpus-driven Study of Semantic Prosodies in Specialized Texts. *Modern Foreign Languages* 25, 165-175.

Xiao, R., & T, McEnery. (2006). Collocation, semantic prosody, and near synonymy: A crosslinguistic perspective. *Applied Linguistics*, 27(1), 103-129

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