

A Comparison between NNS and NS Adverbs in Their Adverbial Collocations

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1. Introduction

NNS still find collocations a problem despite years of formal instruction. Their lexis still sounds 'foreign' despite the impeccable English some of them may have (Hasselgren, 1994). This results from the fact that their collocational knowledge does not develop in line with their vocabulary knowledge (Bahns & Eldaw, 1993), or even their grammatical knowledge.

Various studies have been conducted to investigate aspects of collocations produced by NNS with diverse L1 backgrounds (eg Biskup, 1992; Bahns & Eldaw, 1993; Hasselgren, 1994; Farghal & Obiedat, 1995; Granger, 1998; Siyanova & Schmitt, 2008). Some collocation studies have made use of corpora of NNS writing (eg Zhang, 1993; Granger, 1998; Lorenz, 1999; Nesselhauf, 2004; Richter, 2007; Siyanova & Schmitt, 2008; Satriawan, 2008). Despite the increasing number of collocation studies with various L1 backgrounds, very few studies have been conducted on collocation use by Indonesian students, much less those based on corpora or those compared against NS collocations.

Therefore, this research will use the corpus-based approach and native judgement approach: (1) to compare the types and tokens of the degree, aspect and manner adverbs in NNS adverbial collocations to those of NS; and (2) to examine the nativelikeness of the NNS adverbial collocations.

2. Theoretical Framework

This research adopted an integrated approach combining syntactic and semantic categorisations of adverbs of degree, aspect and manner (Greenbaum, 1970; Quirk, Greenbaum, Leech, & Svartvik, 1985; Allerton, 1987), and included a new subcategory 'excessivisers' under amplifiers. Syntactically, the adverbs will fall into adjective, adverb, and lexical verb modifiers. Semantically, they will be classified into degree, aspect, and manner adverbs. The degree adverbs will be subcategorized into amplifiers (excessivisers, maximisers, and boosters), downtoners (approximators, compromisers, diminishers, and minimisers), and emphasisers.

3. Methodology

3.1. Data

The data were collected from a learner corpus (LC) and two reference corpora (LOCNESS and BNC). LC is comprised of 49 English essays totalling 31,197 words written by Indonesian undergraduates majoring in TEFL. The essays were written under timed conditions without any reference tools. The Louvain Corpus of Native English Essays (LOCNESS) (Granger, Sanders & Connor, 2002) subset used for this research is made up of 30,109 words with an average essay length of 330 words while the written part of the BNC consists of 90% of the nearly 100-million-word corpus.

3.2. Procedure

First, the adverbial collocations in LC were selected in two steps: only those containing an adverb adjacent to an adjective, a verb, or another adverb; and only those containing a degree adverb, an aspect adverb, or a manner adverb in adjacent position.

The LC essays were then wordprocessed. Only minor orthographic mistakes were corrected. The LC and LOCNESS essays were then assigned the part-of-speech information by using the TreeTagger for English POS tagger. The tags were explained in the Penn Treebank Tagset, described in Marcus, Santorini, and Marcinkiewicz (1993). All the tagged adverbs, verbs, and adjectives as well

as all the instances of adverbs adjacent to a verb, an adjective or another adverb were coded for ease of extraction.

3.2.1. Study 1

The adverbial collocations in LC and LOCNESS were compared in terms of types and tokens. The tokens revealed any overuse or underuse of the collocations, while the types indicated the distribution.

3.2.2. Study 2

The nativelikeness of NNS adverbial collocations was determined using statistical analyses (frequency count and MI) and native intuition judgements. The frequencies of the adverbs, their collocates, and the collocations extracted from LC and LOCNESS in BNC were automatically counted with a specially designed software by Hetterle (2007). The raw frequencies were then classified into five groups (Siyanova & Schmitt, 2008). The MI (mutual information) cores were divided into five bands, as modified from Siyanova and Schmitt (2008).

The native intuition judgement was conducted by presenting two panels of ten native judges each with the adverbial collocations found in LC, one panel without context and the other within context made up of the NNS own sentences. The judges rated the acceptability of the collocations on a five-point scale, slightly modified from Nesselhauf (2004), and suggested native expressions for the collocations rated '0' or '1'.

Each panel's judgement was averaged to obtain a final score. The final scores of both panels were averaged as well, and classified into three categories. To figure out whether the collocations received similar ratings without and within context, the scores of the collocations within context were subtracted by the ones without context. The collocations with a score difference of at least 2 between the panels were particularly analysed.

The collocations in LC were then analyzed and classified into those containing adverbs of degree, aspect, and manner, and their subcategories as detailed in Section 2.

4. Findings and Analysis

4.1. Study 1

The types and tokens of NNS and NS modifiers in their adverbial collocations are presented in Table 1. The chi-square tests resulted in a significant underuse in tokens only of NNS collocations, while Granger (1998) reported a statistically significant underuse of amplifiers by NNS in the numbers of both types and tokens in her NS and NNS corpora (147).

Table 1

Types and Tokens of Adverbial Collocations in LC and LOCNESS

Types/Tokens	NNS (LC)	NS (LOCNESS)
Types	55	75
Tokens	228 -**	270

Notes:

- underuse
- + overuse
- * significant

Chi-square value (tokens): 5.23, significant at $p < .05$ (df = 1)

Table 2 shows that of the collocations extracted from LC and LOCNESS, only 23 of them overlap. Collocations with adjective modifiers make up the majority of both NNS and the NS collocations. The data shows that only one of the collocations with adverb modifiers occurs in both corpora, and none of the collocations with lexical verb modifiers overlap. Only a small proportion of

the adverbial collocations overlap. The majority of the collocations diverge in L1 and L2, as reported by Farghal and Obiedat (1995).

Table 2
Distribution of Adverbial Collocations in LC and LOCNESS

Collocations	LC only	LOCNESS only	Overlap
With adjective modifiers	167	120	22
With adverb modifiers	28	7	1
With lexical verb modifiers	52	78	0
Total	247	205	23

The tokens of the modifiers in the adverbial collocations found in the LC and LOCNESS corpora are tabulated in Table 3 as follows:

Table 3
Distribution of Modifiers in the Adverbial Collocations in the LC and LOCNESS

Semantic classification	Syntactic classification	Adjective modifiers		Adverb modifiers		Lexical verb modifiers	
		LC	LOC-NESS	LC	LOC-NESS	LC	LOC-NESS
Degree adverbs							
Amplifiers							
	Excessivisers	5	12	--	1	--	--
	Maximisers	7 -*	28	--	3	1	3
	Boosters	100	93	6	14	18	16
Downtoners							
	Approximators	3	10	1	2	--	--
	Compromisers	5	9	--	1	1	--
	Diminishers	14	11	--	3	1	1
	Minimisers	--	--	--	--	--	--
	Emphasisers	8	1	1	5	6	--
Aspect adverbs							
		--	6	--	--	--	--
Manner adverbs							
		1	8	--	2	50 +*	28
Total		143	178	8	31	77	48

Notes:

- underuse
- + overuse
- * significant

The only subcategory which bears a statistically significant underuse of adverbial collocations by NNS is the maximisers (chi-square 13.37 at $p < .05$). In addition, NNS overused manner adverbs modifying lexical verbs (chi-square 5.46).

4.1.1. Degree Adverbs

4.1.1.1. Amplifiers

NS used more amplifiers to modify adjectives and lexical verbs in terms of types and tokens than NNS. NNS, on the other hand, used mainly adverbs of simple forms (see Appendix B).

4.1.1.2. Downtoners

NNS generally used fewer downtoners in their essays than NS (see Appendix C). The subcategories of minimisers and approximators modifying lexical verbs did not occur in both corpora at all.

4.1.1.3. Emphasisers

NNS used the emphasisers to premodify adjectives, adverbs and lexical verbs in the LC, while NS used them to premodify adjectives and adverbs in the LOCNESS.

4.1.2. Aspect adverbs

NNS did not produce any collocation containing aspect adverbs at all, while NS premodified their adjectives with the aspect adverbs *ecologically*, *environmentally*, *medically*, *physically*, *sexually*, and *socially*.

4.1.3. Manner adverbs

The manner adverbs found in both LC and LOCNESS are mainly lexical verb modifiers (see Appendix D), which were a productive subclass with NNS using nearly twice as many modifiers as NS. Only the lexical verb modifiers *carefully*, *live*(pt), and *together*(pt) occurred in both corpora. NNS produced only one manner adverb as adjective modifier, and none as adverb modifier.

4.2. Study 2

4.2.1. Statistical analyses

4.2.1.1. Analysis of raw frequencies of occurrence

Table 4 shows that 67% of the adverbial collocations in the LC corpus occur at least six times in the BNC, which means that they are relatively frequent collocations. The results were higher than Satriawan's (2008) findings with adjective-noun combinations (49.1%).

Table 4

Distribution of Raw Frequencies of NNS Adverbial Collocations in BNC

Categories	Ranges	Occurrences in BNC	
zero frequency	0	43	19%
low frequency	1-5	31	14%
medium frequency	6-20	26	11%
high frequency	21-100	53	23%
very high frequency	>100	75	33%
	Total	228	100%

4.2.1.2. Analysis of collocational strength (MI-scores)

Since the collocations with zero frequencies (see Table 4) cannot be taken into account for MI-score calculation, only 185 of the collocations can have MI-scores. Table 5 shows that 57% of the collocations have a significant association. This is slightly below the findings of Satriawan's (2008) (66.1%) and Siyanova and Schmitt's (2008) (75.4%), and well below Richter's (2007) (85.2%). Nearly 30% of the combinations have low MI-scores and thus are more likely to co-occur at random while 14% of the collocations have mutually avoiding collocates.

Table 5

Distribution of MI Scores for NNS Adverbial Collocations

Categories	Ranges	Raw frequency	Relative frequency
negative association	≤ 0	26	14%
low association	$0 > \text{ and } < 3$	53	29%
medium association	3-4.99	52	28%

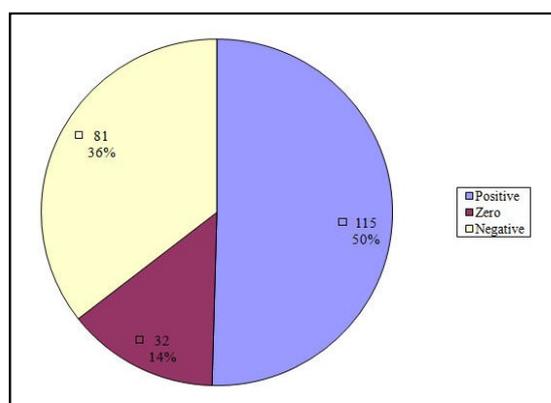
high association	5-6.99	47	25%
very high association	≥ 7	7	4%
Total		185	100%

Hunston (2002) maintained that the top collocates on the MI-score list tend to be less frequent but restricted combinations (74).

4.2.2. NS judgements

A comparison of the NS judgements of NNS collocations without and within context yielded various results. As shown in Figure 2, only 32 out of 228 collocations (14.04%) had no difference in the average final ratings. This could mean that with or without context the NS judges may have similar understanding of the collocations in their mental lexicon.

Figure 2
Types of Differences of Native Intuition Judgements of Collocations



Slightly over half of the collocations have their difference score in the positive, which means more collocations within context were judged nativelike than those without context. The differences in the negative denote a higher score when the collocations were presented without context. It was likely that NS would use the collocations themselves in other contexts.

Table 6 shows that almost three quarters of the 228 collocations were ‘relatively acceptable’ without context and slightly lower within context. Similarly, the ‘relatively unacceptable’ collocations were rated slightly lower within context. In addition, when put within context, the collocations rated ‘questionable’ doubled. It could be the case that within the context they were written, some of the collocations may have confused NS even more.

Table 6
Native Judges’ Ratings of Collocations Without and Within Context

Categories	Criteria	Collocations Without Context		Collocations Within Context	
		Raw frequency	Relative frequency	Raw frequency	Relative frequency
relatively unacceptable	0-1.5	45	19.74%	37	16.23%
questionable	>1.5 and ≤ 2.5	14	6.14%	28	12.28%
relatively acceptable	> 2.5 and ≤ 4	169	74.12%	163	71.49%
Total		228	100%	228	100%

5. Limitations

The interpretations of this research are limited by three major constraints—corpora lengths, polysemy/homonymy, and NS judgements. First, due to the limited lengths of the corpora used (except for BNC), caution should be made when making generalisations from the findings.

Second, since the frequency and meaning of individual words were not checked in their respective contexts, the conclusion drawn should be treated with approximation.

Third, the fact that more than one sentence were presented for some of the collocations within context confused some NS judges. Also, as the NS judges were two different groups of people, their individual differences could have affected the judgements.

Selected references:

- Allerton, D.J. (1987). 'English intensifiers and their idiosyncracies'. In R. Steele & T. Threadgold (Eds.). *Language topics: Essays in honour of Michael Halliday 2* (pp. 15-31). Amsterdam: Benjamins.
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- Nesselhauf, N. (2004). *Collocations in a Learner Corpus*. Amsterdam: John Benjamins.
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APPENDIX A

NNS Overuse and Underuse of Overlapping Adverbial Collocations

Collocations	Frequencies in LC	Frequencies in LOCNESS	Significance of overuse/underuse
Many more	5	1	-
More attractive	5	1	-
More compatible	1	1	-
More convenient	1	1	-
More expensive	13	3	-
More important	1	3	-
More interesting	21	1	-
More likely	1	4	-
More often	7	2	-
Most important	6	8	0.36 (not significant)
Much better	6	1	-
Much more	3	5	-
So much	16	5	5.38 (significant)
Too long	1	1	-
Too many	2	5	-
Too much	6	2	-
Very big	3	1	-
Very dangerous	1	1	-
Very different	1	2	-
Very difficult	1	2	-
Very expensive	1	3	-
Very important	7	3	-
Very large	1	1	-

APPENDIX B

Types and Tokens of Amplifiers in the LC and LOCNESS

Amplifiers	Adjective modifiers		Adverb modifiers		Lexical verb modifiers	
	LC	LOCNESS	LC	LOCNESS	LC	LOCNESS
Excessivisers	too (5)	excessively (1) overly (1) too (10)	--	too (1)	--	--
Maximisers	most (7)	completely (3) extremely (3) most (17) perfectly (1) quite (3) totally (1)	--	most (3)	extremely (1)	completely (1) extremely (1) perfectly(pt) (1)
Boosters	further (1) more (56) more(pt) (1) much (5) so (12) very (25)	considerably (1) extraordinarily (1) incredibly (1) more (39) more(pt) (1) much (9) so (8) very (33)	more (3) much (1) so (1) very (1)	more (10) so (2) very (2)	highly (3) more (9) more(pt) (4) much(pt) (2)	Exponentially(p t) (1) greatly (4) greatly(pt) (3) more(pt) (2) much(pt) (1) notoriously (3) significantly(pt) (1) tremendously(pt)) (1)

Note:

(pt) postmodifier

APPENDIX C

Types and Tokens of Downtoners in the LC and LOCNESS

Downtoners	Adjective modifiers		Adverb modifiers		Lexical verb modifiers	
	LC	LOCNESS	LC	LOCNESS	LC	LOCNESS
Approximators	almost (2) virtually (1)	almost (3) basically (1) potentially (1) practically (2) predominantly (1) seemingly (1) virtually (1)	almost (1)	almost (1) nearly (1)	--	--
Compromisers	pretty (1) enough(pt) (4)	enough(pt) (5) fairly (2) moderately (1) rather (1)	--	fairly (1)	enough(pt) (1)	--
Diminishers	just (1) less (5) relatively (2) quite (6)	just (1) less (7) relatively (3)	--	less (1) little (1) slightly (1)	less(pt) (1)	little(pt) (1)
Minimisers	--	--	--	--	--	--

Note:

(pt) postmodifier

APPENDIX D

Types and Tokens of Manner Adverbs in the LC and LOCNESS

Adjective modifiers		Adverb modifiers		Lexical verb modifiers	
LC	LOCNESS	LC	LOCNESS	LC	LOCNESS
widely(pt) (1)	drastically (1) easily (1) increasingly (5) peacefully (1)	--	interestingly (1) rapidly (1)	actively(pt) (1) audiolily(pt) (1) audioly(pt) (1) audio-visually(pt) (1) automatically(pt) (1) best(pt) (1) carefully(pt) (1) clearly (1) clearly(pt) (1) closely(pt) (1) commonly (1) differently(pt) (1) directly (2) directly(pt) (4) easily (3) easily(pt) (4) exaggerately(pt) (1) fast(pt) (1) faster(pt) (1) fastly(pt) (3) glamorous(pt) (1) happily(pt) (1) healthy(pt) (1) live(pt) (1) longer(pt) (2) necessarily (1) nicely(pt) (1) quickly(pt) (1) shortly(pt) (1) strictly (1) suddenly (1) together(pt) (2) twice(pt) (1) unconsciously (1) well(pt) (2) wisely(pt) (1)	better(pt) (1) carefully(pt) (1) correctly(pt) (1) directly(pt) (2) drastically(pt) (1) gradually(pt) (1) effectively (1) efficiently(pt) (2) firmly (1) hard(pt) (1) indirectly(pt) (1) live(pt) (1) negatively(pt) (1) openly (1) rapidly(pt) (1) readily (1) regularly (2) right (1) slowly (1) smoothly(pt) (1) surely (1) threefold(pt) (1) together(pt) (3)

Note:

(pt) postmodifier

APPENDIX E

Results of the Native Intuition Judgements

No.	Collocation	Final Judgement		Different Score	
		Without Context	Within Context	Positive	Negative
1	almost everyday	3.60	1.40		-2.20
2	almost many	0.30	0.40	0.10	
3	almost most	0.30	0.70	0.40	
4	built together	3.70	4.00	0.30	
5	care enough	3.70	3.90	0.20	
6	carried easily	3.70	3.10		-0.60
7	changing fastly	0.40	0.70	0.30	
8	clearly seen	3.00	3.90	0.90	
9	commonly used	4.00	3.80		-0.20
10	communicate directly	3.70	3.40		-0.30
11	communicate easily	3.80	3.80	0.00	
12	concentrate well	3.20	3.00		-0.20
13	definitely decrease	2.60	2.60	0.00	
14	directly grab	1.90	1.90	0.00	
15	directly see	1.80	2.00	0.20	
16	easily damage	2.80	1.50		-1.30
17	easily enjoyed	2.90	2.90	0.00	
18	easily get	2.70	3.60	0.90	
19	even nonstop	0.60	2.50	1.90	
20	exactly different	0.80	1.60	0.80	
21	experience audio-visually	2.30	3.50	1.20	
22	explain more	2.90	3.30	0.40	
23	extremely bothered	3.00	1.50		-1.50
24	further better	0.30	0.40	0.10	
25	gives more	3.50	0.80		-2.70
26	happened live	2.50	3.20	0.70	
27	highly detailed	2.90	3.90	1.00	
28	highly increasing	0.50	1.50	1.00	
29	highly interested	3.20	1.60		-1.60
30	immediately turn	3.10	3.70	0.60	
31	interesting enough	3.50	3.70	0.20	
32	introduced shortly	2.80	1.20		-1.60
33	just like	3.70	3.70	0.00	
34	know fastly	0.30	0.60	0.30	
35	know much	2.90	3.80	0.90	
36	knowing much	2.10	4.00	1.90	
37	last longer	3.90	4.00	0.10	
38	less attractive	4.00	3.80		-0.20
39	less entertain	0.40	0.80	0.40	
40	less handy	3.10	3.30	0.20	
41	less interesting	3.80	3.60		-0.20
42	less variable	3.00	2.30		-0.70
43	like best	2.90	4.00	1.10	
44	listen carefully	3.90	4.00	0.10	
45	live glamorous	0.50	1.30	0.80	
46	live happily	3.80	3.80	0.00	
47	live healthy	1.70	2.40	0.70	
48	live longer	3.90	3.90	0.00	
49	live together	4.00	3.90		-0.10

50	look closely	3.80	4.00	0.20	
51	look differently	2.50	1.90		-0.60
52	many more	3.90	3.50		-0.40
53	mature enough	3.60	3.90	0.30	
54	more accessible	3.90	3.70		-0.20
55	more actively	2.70	3.70	1.00	
56	more affordable	4.00	4.00	0.00	
57	more attracting	0.50	1.30	0.80	
58	more attractive	4.00	3.80		-0.20
59	more better	0.10	0.30	0.20	
60	more busy	0.60	2.60	2.00	
61	more cheap	0.70	1.30	0.60	
62	more cheaper	0.30	0.90	0.60	
63	more clear	1.20	3.20	2.00	
64	more clearly	3.60	3.70	0.10	
65	more compatible	3.80	3.80	0.00	
66	more complicated	3.90	3.90	0.00	
67	more convenient	4.00	4.00	0.00	
68	more creative	3.90	4.00	0.10	
69	more curious	3.60	3.80	0.20	
70	more decrease	0.20	0.70	0.50	
71	more delicious	3.40	3.10		-0.30
72	more developed	3.80	3.90	0.10	
73	more easy	0.60	2.10	1.50	
74	more economical	3.90	3.80		-0.10
75	more educated	3.70	2.80		-0.90
76	more effective	4.00	3.80		-0.20
77	more enjoy	0.30	1.20	0.90	
78	more enjoyable	3.70	3.60		-0.10
79	more entertain	0.20	1.00	0.80	
80	more exciting	3.90	3.80		-0.10
81	more expensive	4.00	3.80		-0.20
82	more famous	3.50	3.50	0.00	
83	more favourable	3.40	3.30		-0.10
84	more feel	0.40	0.60	0.20	
85	more flexible	3.90	3.90	0.00	
86	more give	0.50	0.40		-0.10
87	more handy	1.60	3.20	1.60	
88	more important	3.90	3.90	0.00	
89	more interactive	3.40	4.00	0.60	
90	more interested	3.20	3.70	0.50	
91	more interesting	3.80	4.00	0.20	
92	more likeable	3.40	1.30		-2.10
93	more likely	3.90	3.90	0.00	
94	more live	0.30	0.70	0.40	
95	more lively	3.40	3.40	0.00	
96	more longer	0.10	0.60	0.50	
97	more loud	0.80	1.60	0.80	
98	more modern	3.80	3.10		-0.70
99	more needed	2.50	3.00	0.50	
100	more often	4.00	3.70		-0.30
101	more perfect	2.70	2.30		-0.40
102	more popular	3.80	3.90	0.10	
103	more portable	3.90	3.90	0.00	
104	more prefer	0.40	1.00	0.60	

105	more reachable	3.10	3.00		-0.10
106	more real	2.80	3.40	0.60	
107	more reasonable	3.60	4.00	0.40	
108	more relax	0.40	0.90	0.50	
109	more relaxed	3.40	3.90	0.50	
110	more satisfied	3.70	1.10		-2.60
111	more satisfying	3.90	4.00	0.10	
112	more simple	1.30	2.50	1.20	
113	more spectacular	3.60	3.20		-0.40
114	more suitable	3.70	3.90	0.20	
115	more terrible	2.30	2.10		-0.20
116	more thin	0.50	1.70	1.20	
117	more traditional	3.60	3.90	0.30	
118	more understand	0.30	0.70	0.40	
119	more useful	3.80	3.80	0.00	
120	more varies	0.40	0.70	0.30	
121	more various	1.50	1.40		-0.10
122	most efficient	4.00	3.90		-0.10
123	most favorite	1.90	2.30	0.40	
124	most healthful	0.80	1.70	0.90	
125	most important	4.00	3.80		-0.20
126	most popular	4.00	3.90		-0.10
127	most productive	4.00	3.90		-0.10
128	most wanted	4.00	3.20		-0.80
129	much better	3.90	4.00	0.10	
130	much cheaper	4.00	3.60		-0.40
131	much different	2.30	3.70	1.40	
132	much expensive	0.60	0.50		-0.10
133	much joyful	1.20	0.50		-0.70
134	much more	3.70	3.50		-0.20
135	necessarily need	3.00	4.00	1.00	
136	need well	0.50	2.10	1.60	
137	notice clearly	2.60	2.60	0.00	
138	offered audiolly	0.30	2.20	1.90	
139	participate actively	3.30	3.40	0.10	
140	presented audioly	0.90	1.40	0.50	
141	presented easily	2.70	3.60	0.90	
142	pretty sure	3.60	3.90	0.30	
143	quite boring	4.00	3.90		-0.10
144	quite cheap	4.00	3.90		-0.10
145	quite expensive	4.00	3.90		-0.10
146	quite impossible	3.10	3.20	0.10	
147	quite mobile	3.40	3.20		-0.20
148	quite satisfied	3.90	2.40		-1.50
149	reachable widely	0.80	1.30	0.50	
150	ready enough	2.30	2.20		-0.10
151	really concern	1.30	1.40	0.10	
152	really find	1.40	3.30	1.90	
153	really fun	3.40	3.90	0.50	
154	really good	3.50	3.20		-0.30
155	really hard	3.90	3.60		-0.30
156	really interested	4.00	3.60		-0.40
157	really means	3.20	3.00		-0.20
158	really need	4.00	3.90		-0.10
159	really needed	4.00	3.40		-0.60

160	really see	3.70	3.90	0.20	
161	really useful	3.80	4.00	0.20	
162	regenerate faster	3.40	3.80	0.40	
163	relatively hard	4.00	3.70		-0.30
164	relatively short	4.00	4.00	0.00	
165	see directly	2.60	3.50	0.90	
166	seen directly	2.40	3.70	1.30	
167	served fastly	0.40	0.50	0.10	
168	show directly	3.10	2.50		-0.60
169	sitting nicely	3.20	3.20	0.00	
170	so busy	3.70	4.00	0.30	
171	so convenient	3.70	3.90	0.20	
172	so delicious	3.70	3.90	0.20	
173	so dependable	3.60	1.90		-1.70
174	so different	3.70	3.70	0.00	
175	so excited	3.90	3.80		-0.10
176	so expensive	3.90	3.90	0.00	
177	so healthy	3.70	3.70	0.00	
178	so important	3.90	3.90	0.00	
179	so intense	3.60	3.70	0.10	
180	so much	3.80	3.90	0.10	
181	so popular	3.80	3.90	0.10	
182	so variously	1.80	1.20		-0.60
183	spread(s) quickly	3.90	3.90	0.00	
184	spreaded easily	0.40	1.50	1.10	
185	strictly limited	3.80	3.70		-0.10
186	suddenly get	3.60	3.80	0.20	
187	talked exaggerately	1.60	0.80		-0.80
188	think twice	4.00	3.50		-0.50
189	think wisely	3.60	3.60	0.00	
190	too expensive	4.00	4.00	0.00	
191	too long	4.00	3.90		-0.10
192	too many	4.00	3.90		-0.10
193	too much	4.00	3.10		-0.90
194	too spacious	3.70	3.00		-0.70
195	unconsciously develop	3.60	3.40		-0.20
196	various enough	1.00	1.50	0.50	
197	very affordable	3.60	3.90	0.30	
198	very big	3.50	3.90	0.40	
199	very boring	3.60	2.10		-1.50
200	very cheap	3.90	3.80		-0.10
201	very compact	3.60	3.70	0.10	
202	very dangerous	3.80	3.90	0.10	
203	very different	3.70	4.00	0.30	
204	very difficult	3.70	3.90	0.20	
205	very easy	3.70	3.10		-0.60
206	very effective	3.90	4.00	0.10	
207	very expensive	3.90	3.60		-0.30
208	very famous	3.60	4.00	0.40	
209	very funny	3.90	2.00		-1.90
210	very handy	3.90	3.80		-0.10
211	very important	3.90	3.90	0.00	
212	very interesting	3.90	4.00	0.10	
213	very large	3.40	3.50	0.10	
214	very much	3.70	3.80	0.10	

215	very profitable	3.70	3.90	0.20	
216	very real	3.40	4.00	0.60	
217	very related	1.40	1.50	0.10	
218	very rich	3.90	3.90	0.00	
219	very seldom	2.90	2.10		-0.80
220	very useful	3.80	3.70		-0.10
221	very well-known	3.90	3.80		-0.10
222	very young	3.60	3.90	0.30	
223	virtually limitless	3.70	3.70	0.00	
224	wanted more	3.60	3.20		-0.40
225	waste fast	1.00	1.00	0.00	
226	work automatically	3.30	3.70	0.40	
227	work more	3.80	3.60		-0.20
228	works less	3.60	3.90	0.30	

APPENDIX F

List of top ten adverbial collocations in the LC based on raw frequencies of occurrence, MI-scores, and native intuition judgements

Raw Frequencies	MI-scores	Native intuition judgements	
		Without context	Within context
so much	participate actively	more affordable	more affordable
much more	strictly limited	more convenient	more convenient
very much	virtually limitless	relatively short	relatively short
too much	commonly used	too expensive	too expensive
most important	listen carefully	live together	last longer
more likely	live happily	most efficient	listen carefully
more important	relatively short	most popular	more creative
too many	most important	most productive	more satisfying
just like	too much	quite boring	much better
very different	most popular	quite cheap	very effective