

Corpora, phraseology and academic discourse

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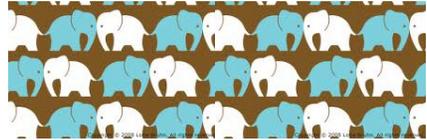
Presentation outline

1. Introduction
2. Corpus analysis and phraseology
3. Phraseology and academic corpora (2 case studies)
 - 3.1 The phraseological profile of book reviews
 - 3.2 Textual distribution of phraseological items
4. Concluding thoughts

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1. Introduction

- A major finding of corpus–linguistic research:
Language is highly patterned. 
- To a high degree, language is made up of fixed or semi–fixed units (clusters, phrases, chunks, lexical bundles, n–grams, collocational frameworks, formulaic sequences, multi–word units...)
- Meaning–carrying unit in language is not the word in isolation but a larger unit (phrase)
"the normal carrier of meaning is the phrase" (Sinclair 2005)
"Language as phraseology" (Hunston 2002: 137)
- We need **phraseological items** to locate meaning

1. Introduction

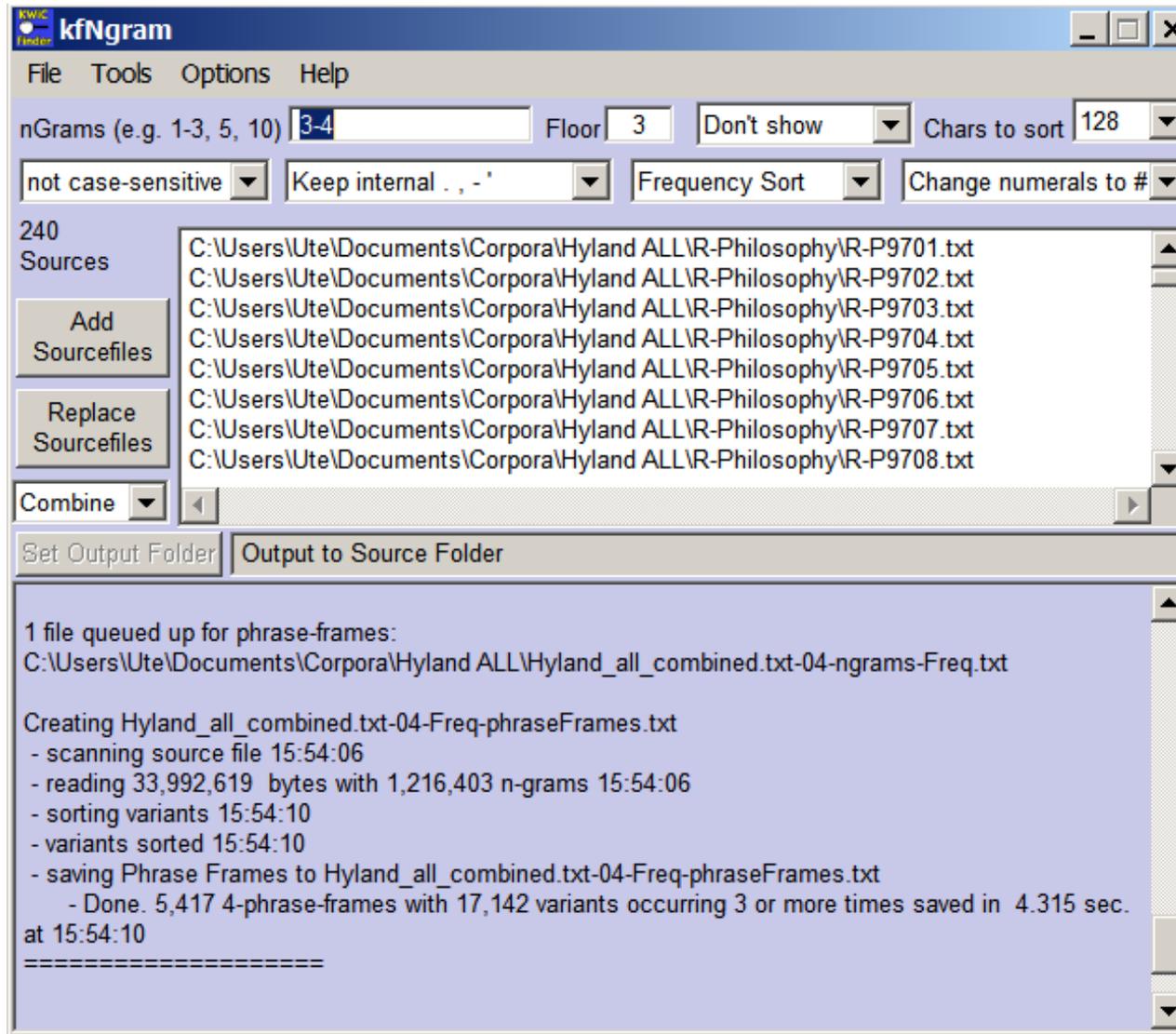
This talk will...

- ... emphasize the importance of phraseology in language research
- ... focus on corpus methodology in research on phraseology
- ... present tools and techniques for phraseological analyses of language
- ... work with corpora of academic discourse and highlight aspects of different text types
- ... consider the implications of two case studies for language pedagogy and linguistic description

2. Corpus analysis and phraseology

- How can corpus tools that help with phraseological analyses?
- Several concordance packages automatically extract repeated word sequences from corpora:
 - **kfNgram**
 - **Collocate**
 - **ConcGram**
 - **AntConc**
 - **WordSmith Tools**
- Look at examples of the types of lists these tools produce...

2. Corpus analysis and phraseology



kfNgram

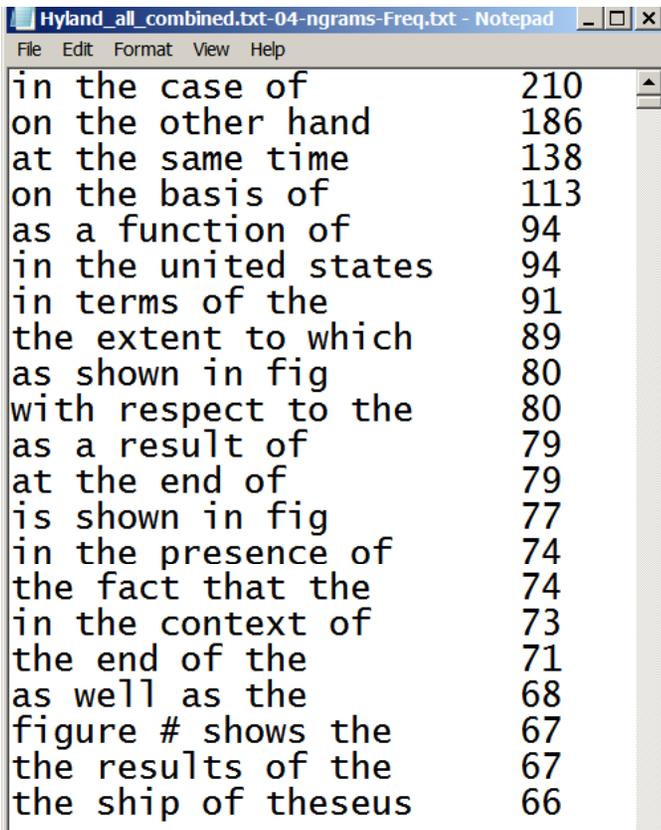


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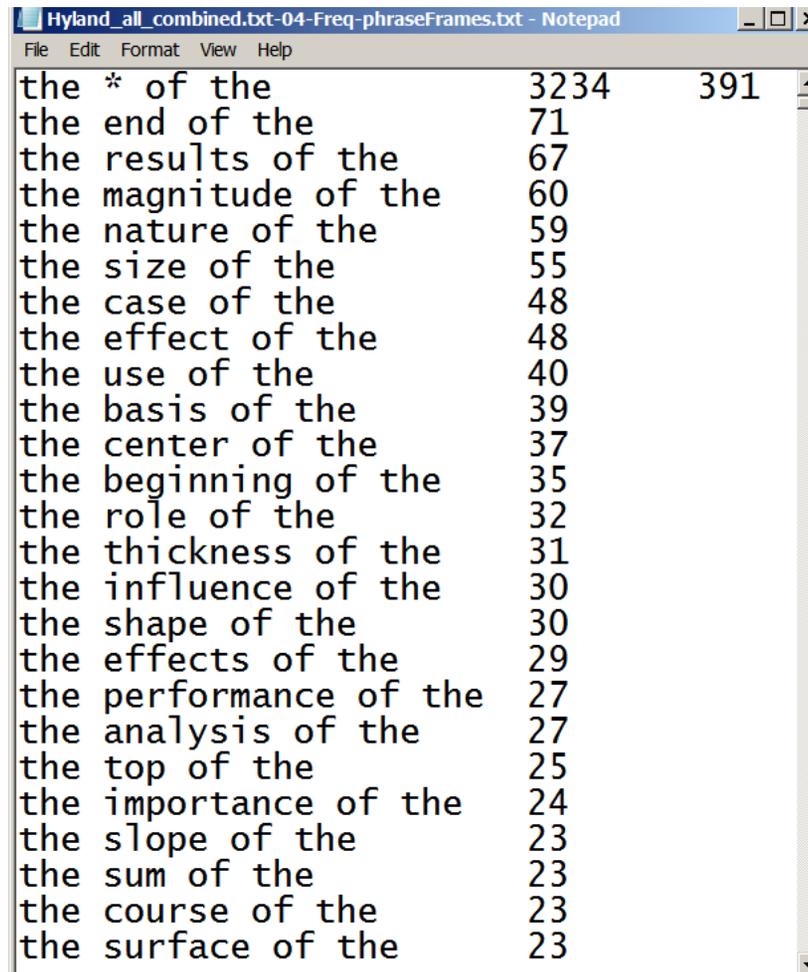
2. Corpus analysis and phraseology

kfNgram



Hyland_all_combined.txt-04-ngrams-Freq.txt - Notepad

in the case of	210
on the other hand	186
at the same time	138
on the basis of	113
as a function of	94
in the united states	94
in terms of the	91
the extent to which	89
as shown in fig	80
with respect to the	80
as a result of	79
at the end of	79
is shown in fig	77
in the presence of	74
the fact that the	74
in the context of	73
the end of the	71
as well as the	68
figure # shows the	67
the results of the	67
the ship of theseus	66



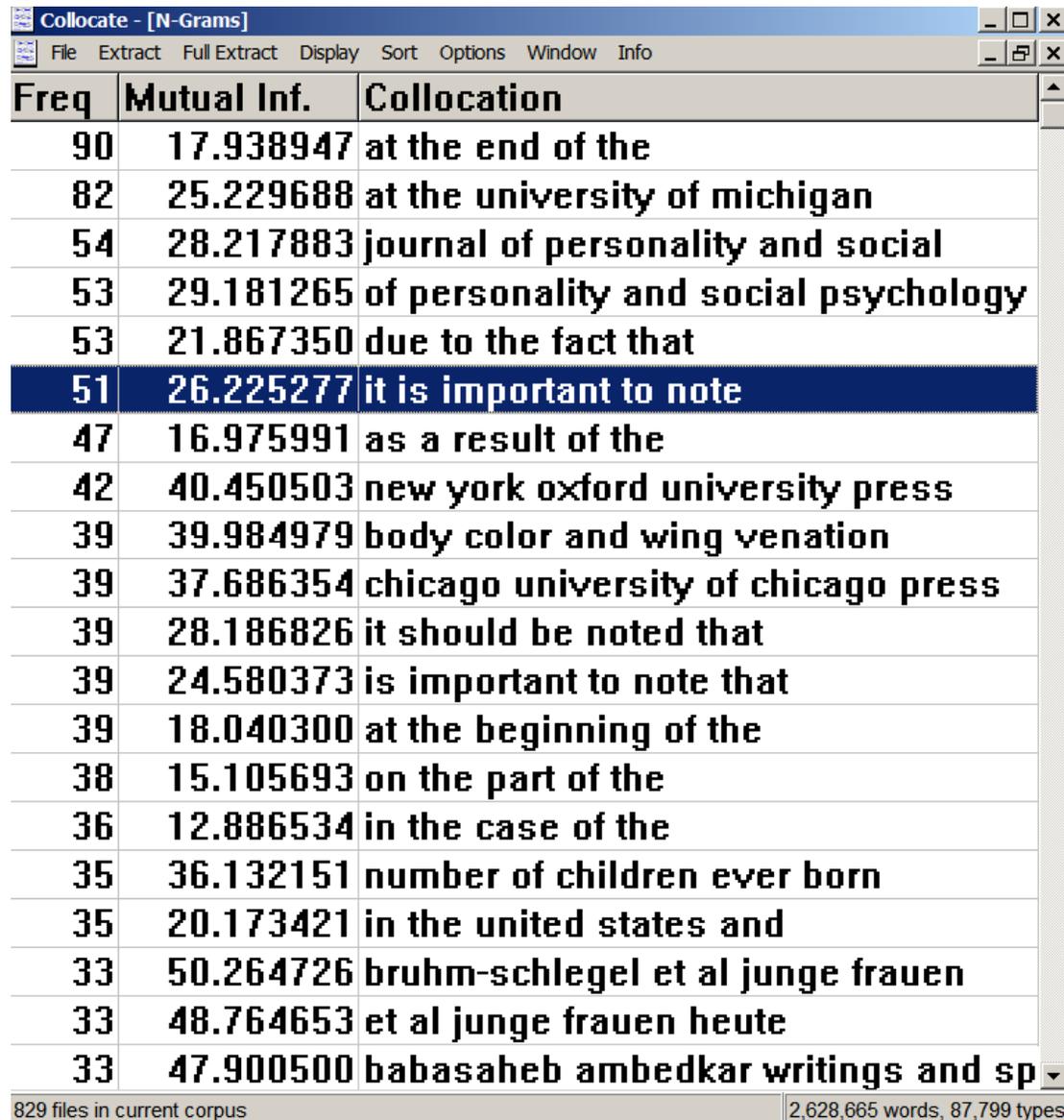
Hyland_all_combined.txt-04-Freq-phraseFrames.txt - Notepad

the * of the	3234	391
the end of the	71	
the results of the	67	
the magnitude of the	60	
the nature of the	59	
the size of the	55	
the case of the	48	
the effect of the	48	
the use of the	40	
the basis of the	39	
the center of the	37	
the beginning of the	35	
the role of the	32	
the thickness of the	31	
the influence of the	30	
the shape of the	30	
the effects of the	29	
the performance of the	27	
the analysis of the	27	
the top of the	25	
the importance of the	24	
the slope of the	23	
the sum of the	23	
the course of the	23	
the surface of the	23	



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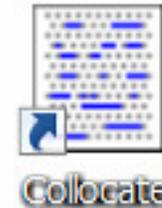
2. Corpus analysis and phraseology



Freq	Mutual Inf.	Collocation
90	17.938947	at the end of the
82	25.229688	at the university of michigan
54	28.217883	journal of personality and social
53	29.181265	of personality and social psychology
53	21.867350	due to the fact that
51	26.225277	it is important to note
47	16.975991	as a result of the
42	40.450503	new york oxford university press
39	39.984979	body color and wing venation
39	37.686354	chicago university of chicago press
39	28.186826	it should be noted that
39	24.580373	is important to note that
39	18.040300	at the beginning of the
38	15.105693	on the part of the
36	12.886534	in the case of the
35	36.132151	number of children ever born
35	20.173421	in the united states and
33	50.264726	bruhm-schlegel et al junge frauen
33	48.764653	et al junge frauen heute
33	47.900500	babasaheb ambedkar writings and sp

829 files in current corpus 2,628,665 words, 87,799 types

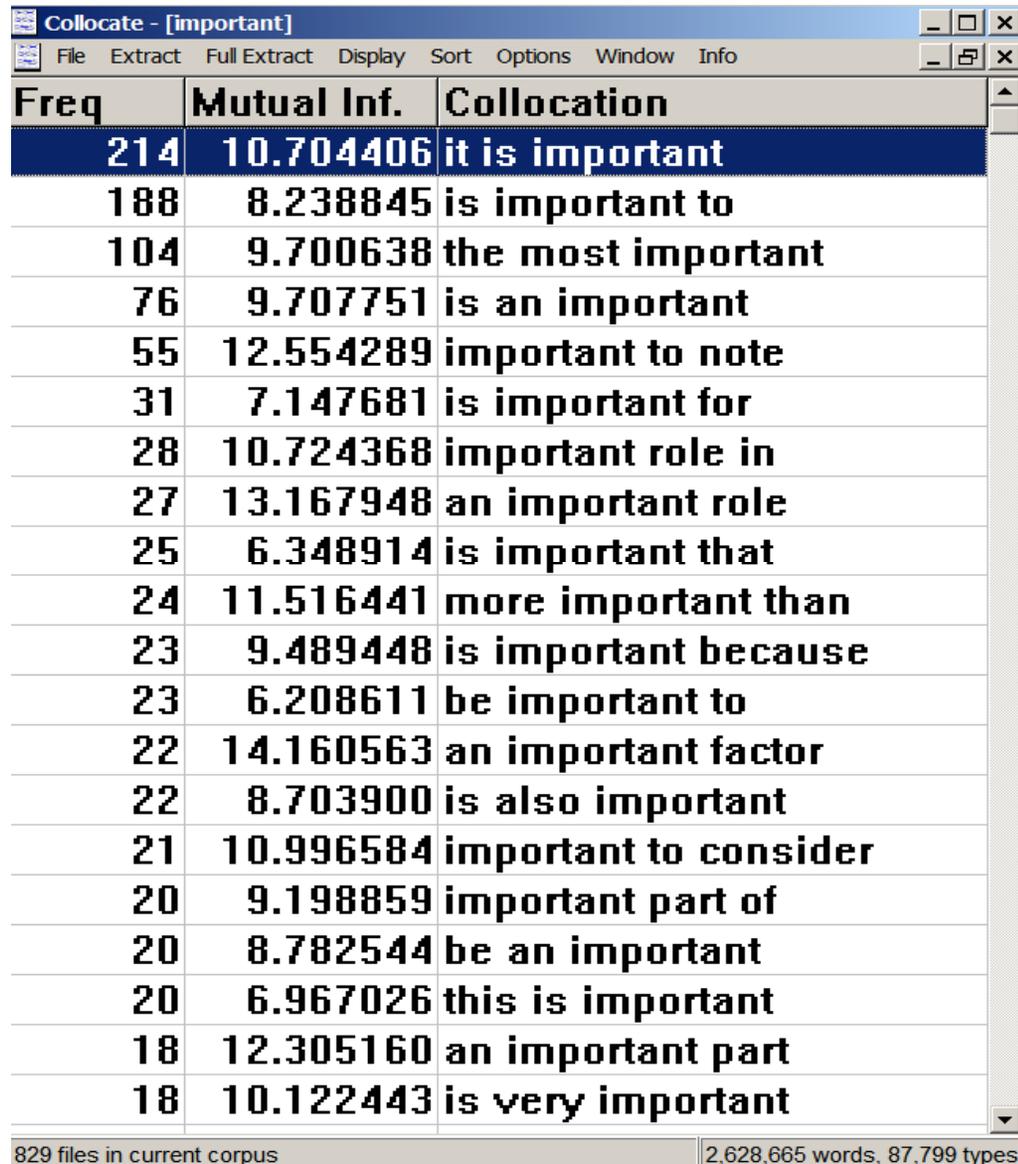
Collocate



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2. Corpus analysis and phraseology



The screenshot shows the Collocate software window titled "Collocate - [important]". The menu bar includes File, Extract, Full Extract, Display, Sort, Options, Window, and Info. The main window displays a table with three columns: Freq, Mutual Inf., and Collocation. The table lists various phrases associated with the word "important", such as "it is important", "is important to", and "the most important". The status bar at the bottom indicates "829 files in current corpus" and "2,628,665 words, 87,799 types".

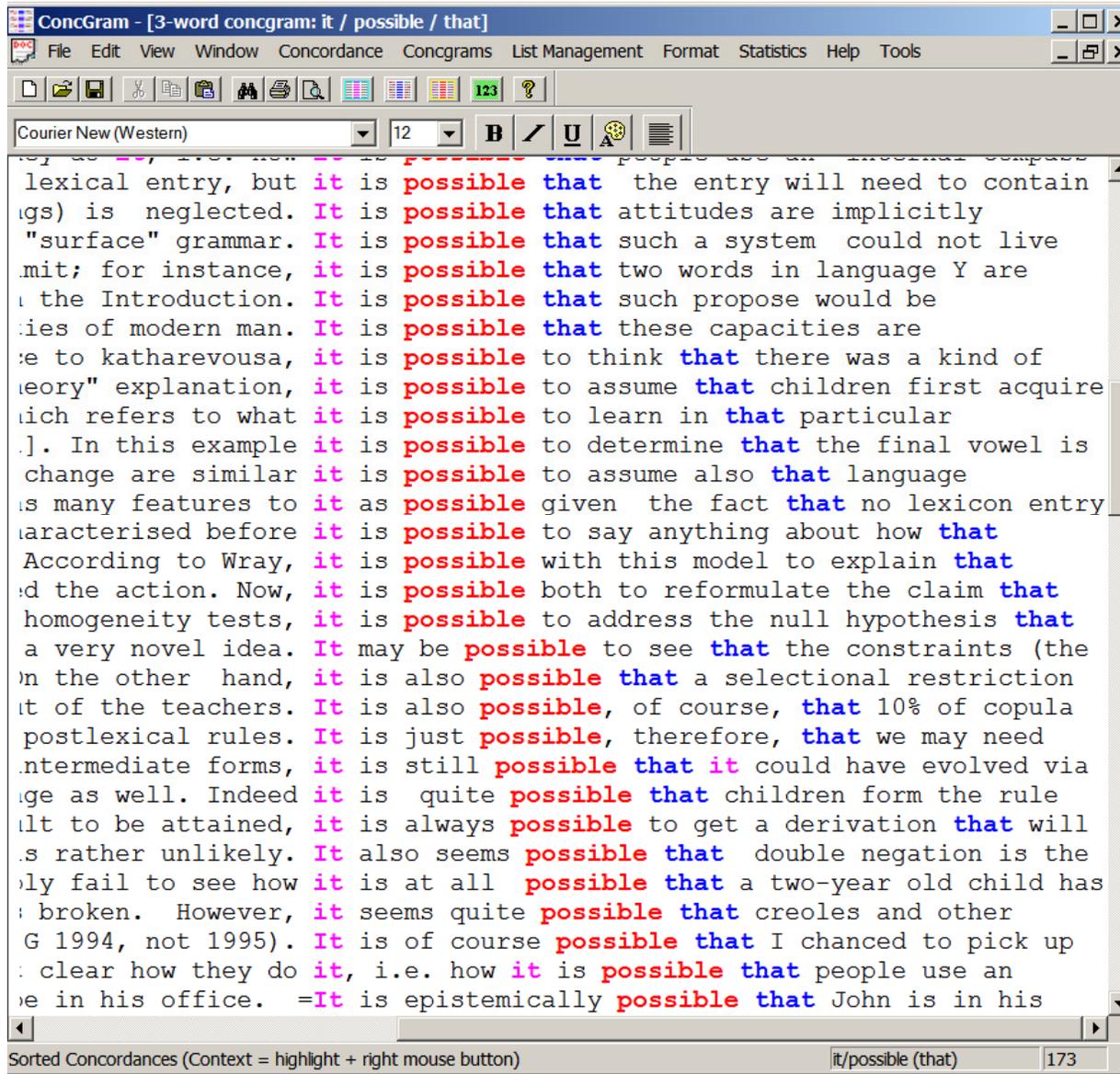
Freq	Mutual Inf.	Collocation
214	10.704406	it is important
188	8.238845	is important to
104	9.700638	the most important
76	9.707751	is an important
55	12.554289	important to note
31	7.147681	is important for
28	10.724368	important role in
27	13.167948	an important role
25	6.348914	is important that
24	11.516441	more important than
23	9.489448	is important because
23	6.208611	be important to
22	14.160563	an important factor
22	8.703900	is also important
21	10.996584	important to consider
20	9.198859	important part of
20	8.782544	be an important
20	6.967026	this is important
18	12.305160	an important part
18	10.122443	is very important

Collocate

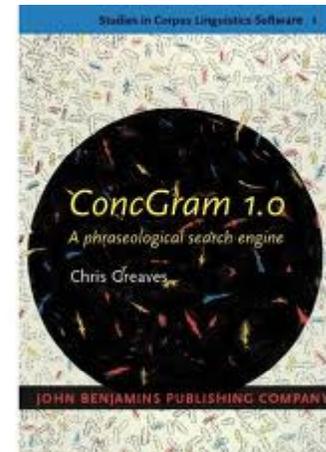


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2. Corpus analysis and phraseology



ConcGram



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2. Corpus analysis and phraseology

The screenshot shows the AntConc 3.2.1w (Windows) 2007 interface. The main window displays a concordance table for the search term 'important'. The table has three columns: Rank, Freq, and Cluster. The top 16 results are as follows:

Rank	Freq	Cluster
1	386	is important
2	383	important to
3	278	an important
4	215	is important to
5	153	it is important
6	151	most important
7	109	it is important to
8	95	It is important
9	94	important for
10	94	the most important
11	92	important in
12	83	is an important
13	83	more important
14	75	It is important to
15	70	are important
16	63	important to note

Below the table, the search term 'important' is entered in the search field. The interface also shows the total number of files processed (829) and a progress bar. The search term position is set to 'On Left', and the cluster size is set to a minimum of 2 and a maximum of 5. The minimum cluster frequency is set to 1.

AntConc



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2. Corpus analysis and phraseology

The screenshot shows the AntConc 3.2.1w (Windows) 2007 interface. The main window displays a table of N-grams with the following data:

Rank	Freq	N-gram
1	993	as well as
2	948	in order to
3	698	the United States
4	499	the number of
5	478	the fact that
6	473	one of the
7	441	in terms of
8	392	due to the
9	386	be able to
10	376	part of the
11	368	that it is
12	357	in the United
13	349	the U S
14	349	there is a

Additional interface details include: Corpus Files list on the left, menu bar (File, Global Settings, Tool Preferences, About), tabs (Concordance, Concordance Plot, File View, N-grams, Collocates, Word List, Keyword List), status bar (Total No. of N-Grams Types: 13074, Total No. of N-Grams Tokens: 292479), search options (Search Term, Word, Case, Regexp, N-Grams), N-Gram Size (Min. Size: 3, Max. Size: 4), Min. N-Gram Frequency (10), and a progress bar for Files Processed (829).

AntConc



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2. Corpus analysis and phraseology

WordList

N	Word	Freq.	%	Texts	% err
1	EFFECTS OF RABIES	12	0.00	11	0.27
2	IS RABIES AND	11	0.00	11	0.27
3	FROM THE RABIES	7	0.00	5	0.12
4	IS RABIES				
5	THE RABIES				
6	SMALLPOX AND R				

frequency alphabetical statistics
6 Type-in RABIES

Concord

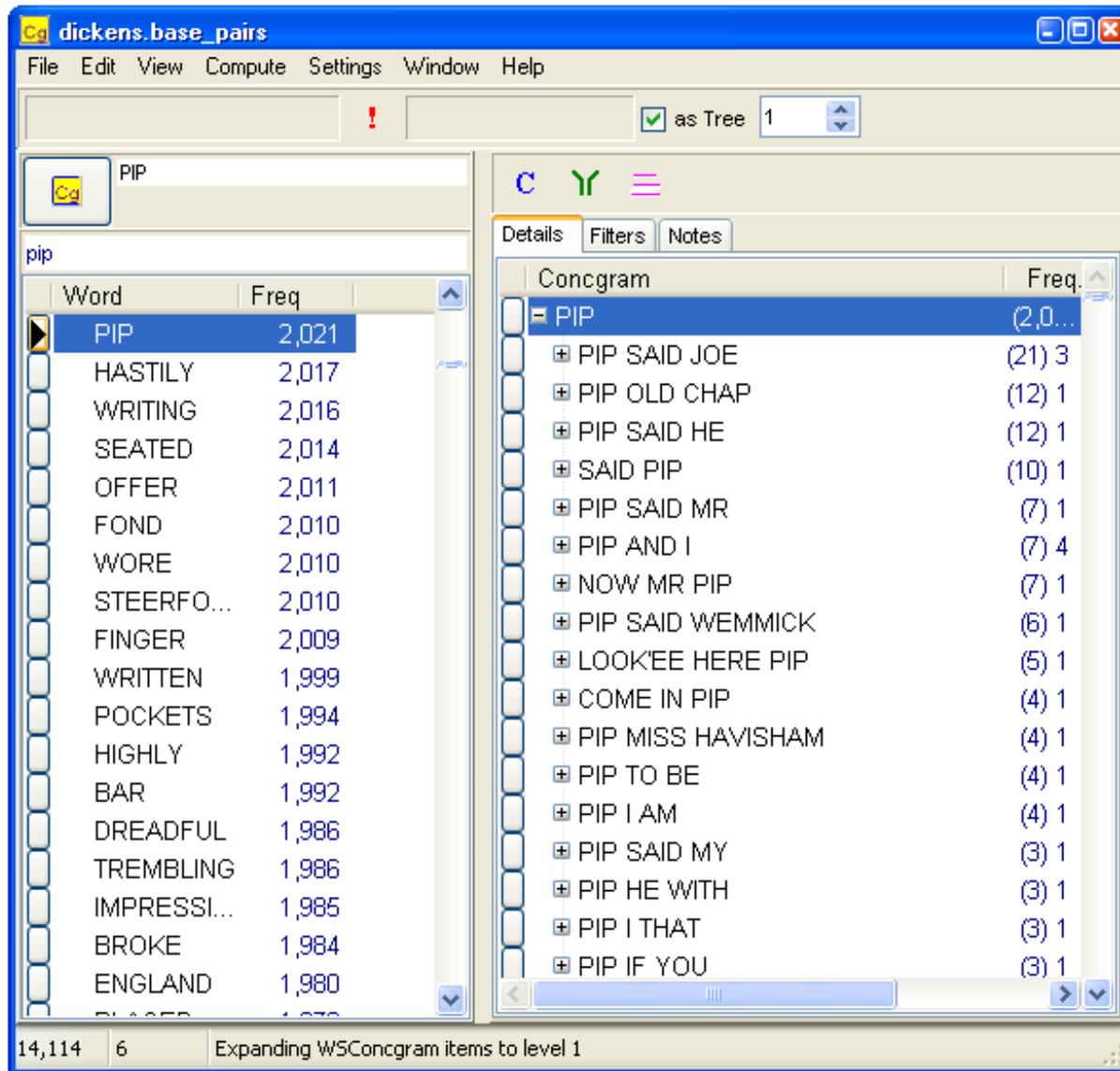
	Cluster	Freq.	Length
1	WITH OBSTRUCTIVE JAUNDICE CAUSED BY	3	5 aundice caused (3)
2	WHICH MAY BE CAUSED BY	3	5 be caused (32),may
3	WHERE DAMAGE IS CAUSED TO	4	5 d to (7),where dam:
4	WHERE ANY DAMAGE IS CAUSED	5	5 ed (15),where any i
5	WAS NOT THE CAUSE OF	3	5 (384),not the cause
6	WAS A MAJOR CAUSE OF	3	5 e (34),a major caus
7	TO IDENTIFY THE CAUSE OF	3	5 tify the cause (6),ide
8	TO HAVE BEEN CAUSED BY	6	5 n caused (23),have
9	TO FURTHER THE CAUSE OF	3	5 the cause of (384)
10	TO BE THE CAUSE OF	6	5 e of (384),be the ca
11	TO BE A MAJOR CAUSE	3	5 major cause (34),tc
12	THERE IS REASONABLE CAUSE TO	5	5 33),there is reasona
13	THE SINGLE MOST IMPORTANT CAUSE	4	5),single most impor
14	THE PLAINTIFF NEVER HAD ANY	3	5 aintiff never had (3),l
15	THE OFFENCE OF CAUSING DEATH	4	5 ausing (11),offence
16	THE NATURE OF THE CAUSE	4	5 e (45),nature of the
17	THE MOST IMPORTANT CAUSE OF	5	5 0),most important c
18	THE MOST COMMON CAUSE OF	7	5 (10),the most comr
19	THE FACT THAT THE CAUSE	3	5 use (32),the fact the
20	THE DATE WHEN THE CAUSE	3	5 en the cause (10),tl
21	THE DAMAGE WAS CAUSED BY	5	5 d (11),the damage v
22	THE BREACH IS CAUSED BY	3	5 ch is caused (3),bre
23	THE ACCRUAL OF THE CAUSE	6	5 5),accrual of the (7)
24	THAT THEY ARE CAUSED BY	3	5 ey are caused (5),t
25	THAT THE INJURY WAS CAUSED	3	5 was caused (5),th
26	THAT MAY BE CAUSED BY	3	5 ay be caused (32),
27	SUDDEN DEATH OF WHICH THE	3	5 th of which the (3),d
28	SUCH AS WOULD CAUSE A	8	5 ould cause a (18),s
29	SUCH A WAY AS TO	5	5 way as to (5),

WordSmith
Tools
Cluster
function



Ute Römer (uro)

2. Corpus analysis and phraseology



The screenshot shows the WordSmith Tools interface. The main window is titled 'dickens.base_pairs'. The left pane shows a list of words and their frequencies for the search term 'pip'. The right pane shows the 'Concgram' function results for 'PIP', listing various phrases and their frequencies.

Word	Freq
PIP	2,021
HASTILY	2,017
WRITING	2,016
SEATED	2,014
OFFER	2,011
FOND	2,010
WORE	2,010
STEERFO...	2,010
FINGER	2,009
WRITTEN	1,999
POCKETS	1,994
HIGHLY	1,992
BAR	1,992
DREADFUL	1,986
TREMBLING	1,986
IMPRESSI...	1,985
BROKE	1,984
ENGLAND	1,980

Concgram	Freq.
PIP	(2,021) 1
PIP SAID JOE	(21) 3
PIP OLD CHAP	(12) 1
PIP SAID HE	(12) 1
SAID PIP	(10) 1
PIP SAID MR	(7) 1
PIP AND I	(7) 4
NOW MR PIP	(7) 1
PIP SAID WEMMICK	(6) 1
LOOK'EE HERE PIP	(5) 1
COME IN PIP	(4) 1
PIP MISS HAVISHAM	(4) 1
PIP TO BE	(4) 1
PIP I AM	(4) 1
PIP SAID MY	(3) 1
PIP HE WITH	(3) 1
PIP I THAT	(3) 1
PIP IF YOU	(3) 1

WordSmith
Tools
Concgram
function



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3. Phraseology and academic corpora

- How can **corpora** of **academic discourse** be used in **phraseology** research?
- Present findings from two case studies on:
 - ...the phraseological profile of book reviews in linguistics
 - ...the distribution of phraseological items across student papers

Establishing the phraseological profile of a text type

The construction of meaning in academic book reviews

Ute Römer
University of Michigan

Investigating the interaction between phraseological items and textual position

Matthew Brook O'Donnell & Ute Römer

1. Introduction

Words and phrases are not distributed randomly across a text. Instead, they are connected to its structure and associated with particular textual positions. Michael Hoey (2005) refers to this phenomenon as “textual colligation” (see Section 2 below).

Focusing on advanced student writing from different academic disciplines, this paper identifies the most common phraseological items in the Michigan Corpus of Upper-level Student

Starting from the observation that meaning does not primarily reside in individual words but in the phrase, this paper focuses on the examination of recurring phrases in language. It introduces a new analytical model that leads corpus researchers to a profile of the central phraseological items in a selected text or text collection. In this paper, the model is applied to a 3.5-million word corpus

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Case study #1



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3.1 The phraseological profile of book reviews

- How can we uncover the phraseological profile of a text or text type?
 - Development of the Phraseological Profile Model (PP Model)
- PP Model summarizes the underlying procedure of text/corpus analysis and consists of **4 central steps**:
 1. identification of phraseological items
 2. determination of item–internal variation
 3. examination of functions of the identified items
 4. analysis of the distribution of items across texts
- Application of the model to a 3.5 million word corpus of linguistic book reviews: **Book Reviews In Linguistics Corpus** (BRILC); 1,500 texts, 3.5 mio words

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Step 1: Identification of phraseological items

- Take a corpus-driven approach (fully automatic extraction of items)
- Work with whole texts, not samples
- Use phraseological search engines to extract **candidate** item lists
- Tools: *Collocate* (Barlow 2004), *ConcGram* (Greaves 2009), *kfNgram* (Fletcher 2002–7)
- Extract lists of **n-grams**, **p-frames**, **concgrams**
- Manually filter/'weed' the lists for interesting and meaningful items

Step 1: Identification of phraseological items

Hits	4-gram
562	on the other hand
442	at the end of
428	on the basis of
411	as well as the
356	at the same time
330	the end of the
301	of the book is
288	in the case of
268	the fact that the
226	on the one hand
216	a wide range of
215	in the context of
214	the rest of the
207	in terms of the
206	to the study of

Figure 1. Extract of a BRILC 4-gram list (*Collocate* output)

it would be * to	101	10
it would be interesting to	44	
it would be useful to	14	
it would be nice to	11	
it would be better to	9	
it would be possible to	5	
it would be helpful to	5	
it would be fair to	4	
it would be difficult to	3	
it would be necessary to	3	
it would be good to	3	
it * be interesting to	58	3
it would be interesting to	44	
it will be interesting to	8	
it might be interesting to	6	

Figure 2. Example p-frames in BRILC, with numbers of tokens and numbers of variants (*kfNgram* output)

**ConcGram output for
it+be+interesting:
constituency variation**

59 children's grammars in any particular case. It would be interesting to know if the children in
60 UK and US communities, all speakers of English, it would be interesting to know how they interact
61 arguments that are really consistent. It would be interesting to know if there are
62 . In fact, it might be interesting to see if such an account
63 ldwide and it would be interesting to see if, when and how it
64 s reader. It would be interesting to determine if his
65 s respect it would be interesting to know by which methods the
66 to me that it would be interesting to examine such problems in
67 phora, and it would be interesting to see how his theory can
68 calisation it would be very interesting to have a survey of the
69 with respect to semantic transparency; again, it would be very interesting to see this pursued in
70 French. Finally, from a theoretical standpoint, it would be very interesting to expand this analysis
71 directions for future research, noting that it would be especially interesting to follow the
72 explains the shift from OV to VO in English. It would be particularly interesting to see if this
73 didn't find this book as exciting as I had hoped it might be, although Part 4 was quite interesting,
74 "baron" is solved very elegantly in the paper, it would be interesting to discuss the
75 for beginners in semantics. In my opinion, it would be interesting to see how this ontological
76 However, only noun derivatives are discussed, it would be interesting at least to mention verbal
77 work is felt most positively" (p. 22). It should be noted that some interesting results
78 The authors also prove a pumping lemma. It would be interesting to see further
79 as occasionally appear in Linguist List reviews: it wouldn't be very interesting, I didn't make a
80 detailed account is given on this work, though it seems to be very interesting for the linguist's
81 few, oblique, and confined to the endnotes. It would also be interesting to set Haiman's view
82 a translation of a book title was omitted. It would also be interesting to see if some of the
83 future generative work on corpora. Maybe it would also be interesting to test the analyses in
84 restricted to the second definition. Of course, it would also be interesting to find out that
85 (as entries or sub-entries, for instance). So, it should also be interesting to find, among the
86 those that are involved in dictionary-making and it should also be interesting to all dictionary
87 of identity between a constituent and its copy. It might however be interesting to seek a connection
88 language community and their self-perception. It might prove to be interesting to compare the
89 mind, Mel'cuk's criteria seem fairly reasonable. It would, however, be interesting to study the
90 discourse analysis, rhetoric, semantics, etc. It would certainly be very interesting to see what
91 successfully manages to carry out the action. It would most certainly be interesting to look at
92 "AND SYNTACTIC THEORY" by Alison Henry). It seems to me that it would be interesting to
93 interesting topic for their theses. Summing up, it must be said that this book is indeed a very
94 interesting (and reasonably persuasive as far as it goes), but it seems to be unnecessary. Given the
95 been interesting to know. Having said that, it must be stressed that this criticism of too
96 the paper is quite interesting and substantial. It seems to be specially valuable, first of all, due
97 very easy and yet very interesting to read. It would be enlightening for both the professor or
98 very straightforward but very interesting, and it would be still more interesting to see it applied
99 is highly stimulating, original and interesting. It must be read by anyone interested in time, tense
100 paper gives us an idea how interesting it might be if such a theory was successfully

Step 1: Identification of phraseological items

- Manual 'weeding': requires to go back and forth between lists and concordances
- Important to look at wider context of items
- Procedure resulted in a **database of around 8,000 phraseological items** (freq of occurrence in BRILC ≥ 20)
- Results reported on here are based on subsets of high-frequency items

Step 2: Determination of item-internal variation

- This step examines **how variable** (or fixed) a repeatedly occurring sequence of words is
 - Where in an item does variation occur? What are the most frequent variants in a * slot in a p-frame?
 - **P-frame**: n-gram with one internal variable slot, e.g. A*CD, AB*D
- Step 2 also measures the **degrees of variation** of common word sequences: VPR (variant/p-frame ratio – a TTR for p-frames)
- Items with low VPRs (e.g. *on the * hand, a * range of*) have few variants per p-frame; low degree of variation

Step 2: Determination of item-internal variation

Span	P-frame types	Examples from BRILC
3	A*C	<i>the * of, a * job</i>
4	A*CD	<i>the * that the, the * of language</i>
	AB*D	<i>at the * of, on the * hand</i>
5	A*CDE	<i>the * of the book, at * end of the</i>
	AB*DE	<i>in the * of the, the first * of the</i>
	ABC*E	<i>the book is * into, it would be * to</i>
6	A*CDEF	<i>the * part of the book, the * of the book is</i>
	AB*DEF	<i>at the * of the book, the first * of the book</i>
	ABC*EF	<i>in the first * of the, the book is * into three</i>
	ABCD*F	<i>it would have been * to, book is divided into * parts</i>

Variant-type distribution

- Is the distribution of variants per p-frame Zipfian?



- i.e. does a small number of variants (types) account for a large share of p-frame tokens?

Step 2: Determination of item-internal variation

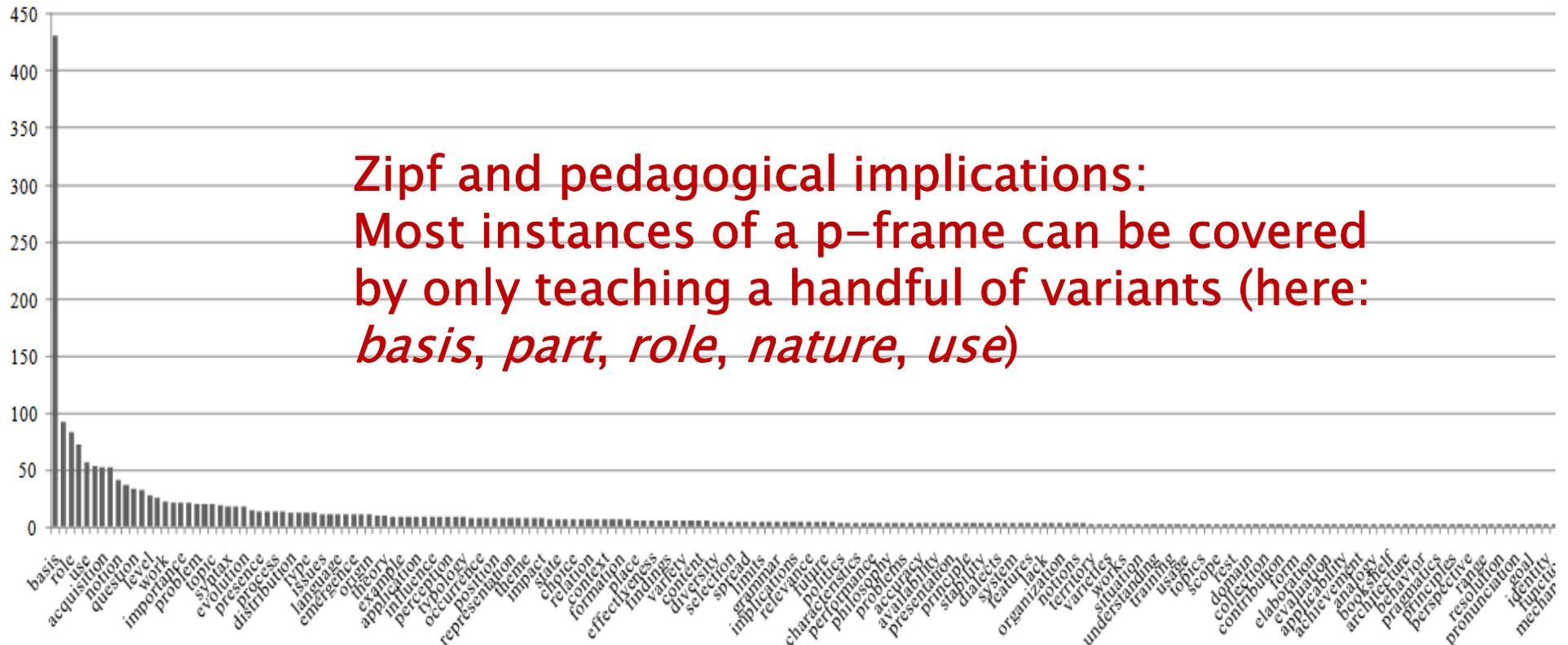


Figure 4. Variant type distribution for the p-frame *on the * of*, following Zipf's law

basis 431, part 92, role 83, nature 73, use 57

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Step 3: Examination of functions of the items

- What **meanings** are expressed by the most frequent phraseological items in our text collection?
- Need to look at items in context (concordance analysis)
- Assigned one meaning to each item (while not all items were monofunctional, one meaning always dominated)
- P-frames were only assigned a function if variants were semantically related
- The examined items convey 4 functions:
 1. **express EVALUATION**
 2. **refer to the STRUCTURE of the book under review**
 3. **refer to the CONTENT of a book**
 4. **organize the DISCOURSE**

Step 3: Examination of functions of the items

Examples...

- Expressing evaluation:
*it would be * to, it is * that, a wide range of, it is not clear*
- Referring to the structure of a book:
*in the * chapter, in the first part, the * of the book*
- Referring to a book's content:
*the history of, the * of English, the relationship between * and*
- Organizing the discourse:
*in order to, with respect to, with * to the*

Step 4: Analysis of the distribution of items across texts

- Where in a text (here a book review) does an item most commonly occur?
- Are there any **relations between phraseol. items and text structure**? (cf. "textual colligation", Hoey 2005)
- Knowing where in a text an item most commonly occurs and which position(s) it avoids, facilitates text processing and production
- Textual distribution of items can be observed in corpus tools (WordSmith Tools "dispersion plot", AntConc "concordance plot", MonoConc Pro "distribution of hits")
- But: hard to evaluate results systematically (other than eyeballing bar code lists)

Step 4: Analysis of the distribution of items across texts

- Division of each file into four parts of equal size (Q1 / Q2 / Q3 / Q4); **THANKS to Matthew B. O'Donnell!**
- Quarters correspond with structural elements (introduction, summary of contents, critical evaluation)
- Retrieval of n-gram/p-frame lists from 'quartered' version of BRILC
- Compute shares of item occurrence across quarters (for top-300 phraseological items, >200 hits)
- **Each text quarter prefers different n-grams**
- Selected high-frequency items show interesting textual distributions...

Step 4: Analysis of the distribution of items across texts

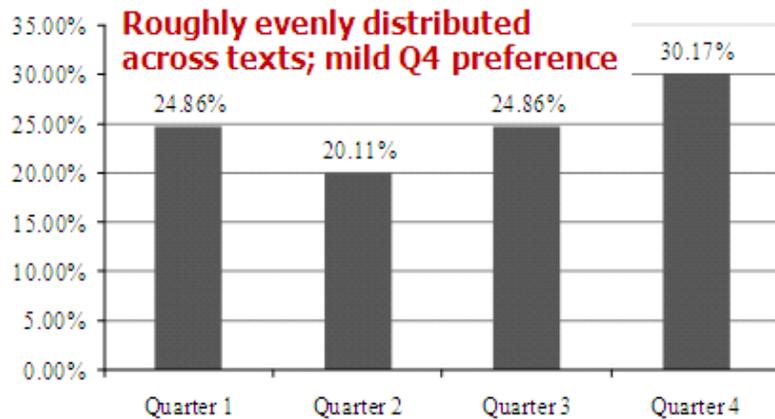


Figure 5. At the same time across texts

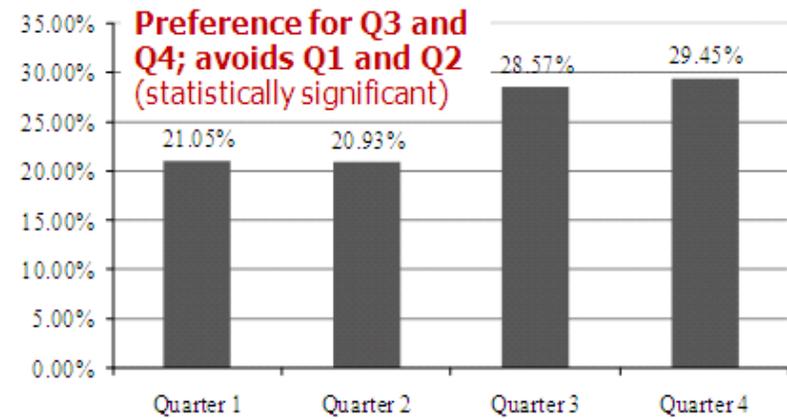


Figure 6. On the * hand across texts

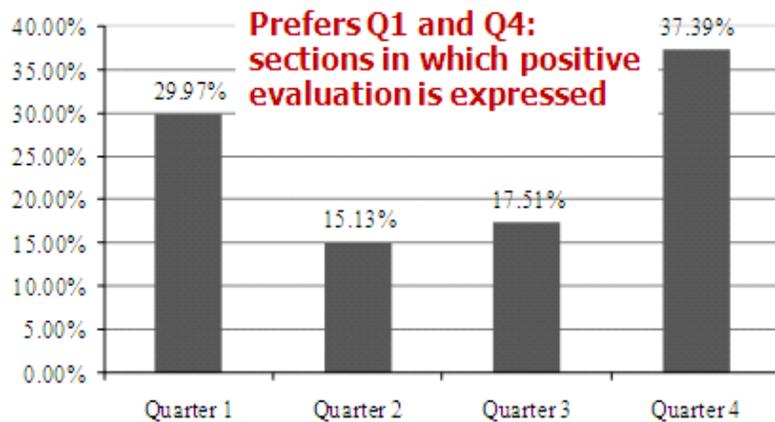


Figure 7. A * range of across texts

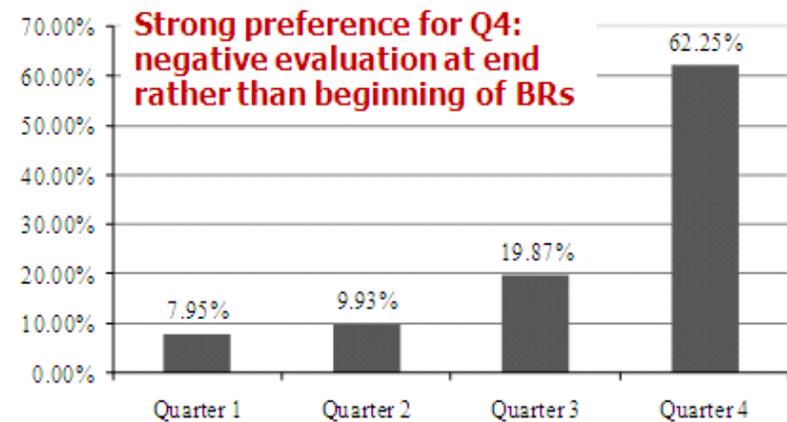


Figure 8. It would have been across texts

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3.1 The phraseological profile of book reviews

- Study has put forward a new model for text and corpus analysis
- 4 steps (I-V-F-D) help establish the phraseological profile of a text/text collection:
 - What are the central phraseological items?
 - How variable are they? What type(s) of variation do they allow?
 - What functions do they most commonly express?
 - How are items distributed across texts? How does their occurrence relate to text structure?
- Analyses show: a lot of important information about the co-selection and textual distribution of words / phrases has not yet been captured

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3.1 The phraseological profile of book reviews

- Outcome: a text-type specific inventory of items, their variation, functions and textual distribution
- Findings have implications for creation of text-type or genre specific reference works
- Also: implications for pedagogical practice – What do learners (or in this case novice academic writers) need to know about the use of common phrases in a particular text type?
- Still: need to find out a lot more about patterns in the language of book reviews

Case study #2



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3.2 The textual distribution of phraseological items

- Focus on phraseology of student academic writing
- Paper identifies common phraseological items in MICUSP and relates them with text structure
- Analysis is based on Hoey's (2005) observations on **textual colligation**
 - Words and phrases may carry with them associations for occurrence at a specific location in a text or textual unit
 - Preference for or avoidance of textual positions
- Which items do typically occur at the beginning or end of a text, paragraph, or sentence?

3.2 The textual distribution of phraseological items

MICUSP

- Michigan Corpus of Upper-level Student Papers
- 829 A-graded papers; around **2.6 million words**
- Papers collected from **16 disciplines** across 4 academic divisions (Humanities & Arts; Social Sciences; Biological & Health Sciences; Physical Sciences)
- Students at **4 levels** of study (senior undergraduates; 1st, 2nd, 3rd year graduates)
- Native and non-native speaker contributions
- Freely accessible online using **MICUSP Simple**
- See <http://micusp.elicorpora.info>

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3.2 The textual distribution of phraseological items

For each paragraph in every MICUSP XML document:

1. tokenize text into sentences and words (NLTK)
2. process each word, recording:
 - paper ID, discipline & student level
 - up to 8-word right context
 - word # within sentence & sentence length
 - word # within paragraph & paragraph length
 - word # within text & text length
 - sentence # & # of sentences within paragraph
 - paragraph # & # of paragraphs in text

3.2 The textual distribution of phraseological items

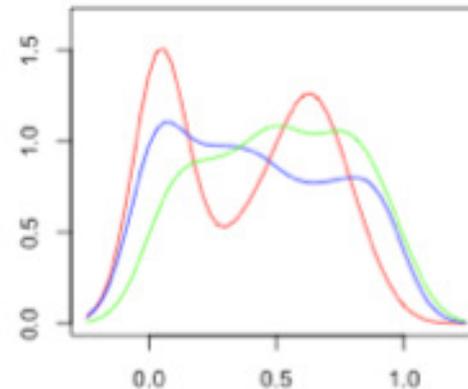
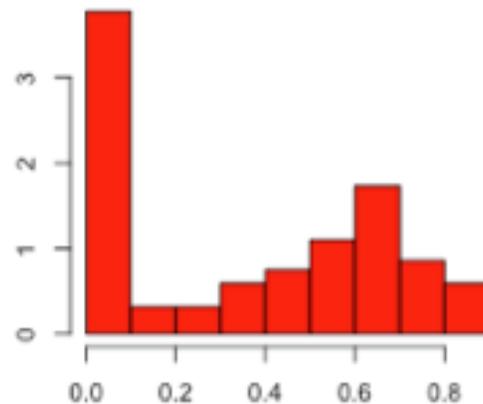
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PHY.G2.02.1	theories	have	long	provided	a	theoretical	framework	which	can	2	19	2	99	2	1941
PHY.G2.02.1	have	long	provided	a	theoretical	framework	which	can	overcome	3	19	3	99	3	1941
PHY.G2.02.1	long	provided	a	theoretical	framework	which	can	overcome	many	4	19	4	99	4	1941
PHY.G2.02.1	provided	a	theoretical	framework	which	can	overcome	many	of	5	19	5	99	5	1941
PHY.G2.02.1	a	theoretical	framework	which	can	overcome	many	of	the	6	19	6	99	6	1941
PHY.G2.02.1	theoretical	framework	which	can	overcome	many	of	the	shortfalls	7	19	7	99	7	1941
PHY.G2.02.1	framework	which	can	overcome	many	of	the	shortfalls	of	8	19	8	99	8	1941
PHY.G2.02.1	which	can	overcome	many	of	the	shortfalls	of	the	9	19	9	99	9	1941
PHY.G2.02.1	can	overcome	many	of	the	shortfalls	of	the	standard	10	19	10	99	10	1941
PHY.G2.02.1	overcome	many	of	the	shortfalls	of	the	standard	model	11	19	11	99	11	1941
PHY.G2.02.1	many	of	the	shortfalls	of	the	standard	model		12	19	12	99	12	1941
PHY.G2.02.1	of	the	shortfalls	of	the	standard	model			13	19	13	99	13	1941
PHY.G2.02.1	the	shortfalls	of	the	standard	model				14	19	14	99	14	1941
PHY.G2.02.1	shortfalls	of	the	standard	model					15	19	15	99	15	1941
PHY.G2.02.1	of	the	standard	model						16	19	16	99	16	1941
PHY.G2.02.1	the	standard	model							17	19	17	99	17	1941
PHY.G2.02.1	standard	model								18	19	18	99	18	1941
PHY.G2.02.1	model									19	19	19	99	19	1941
PHY.G2.02.1	the	major	shortfall	of	supersymmetric	susy	however	has	been	1	18	20	99	20	1941
PHY.G2.02.1	major	shortfall	of	supersymmetric	susy	however	has	been	a	2	18	21	99	21	1941
PHY.G2.02.1	shortfall	of	supersymmetric	susy	however	has	been	a	complete	3	18	22	99	22	1941
PHY.G2.02.1	of	supersymmetric	susy	however	has	been	a	complete	lack	4	18	23	99	23	1941
PHY.G2.02.1	supersymmetry	susy	however	has	been	a	complete	lack	of	5	18	24	99	24	1941
PHY.G2.02.1	susy	however	has	been	a	complete	lack	of	direct	6	18	25	99	25	1941

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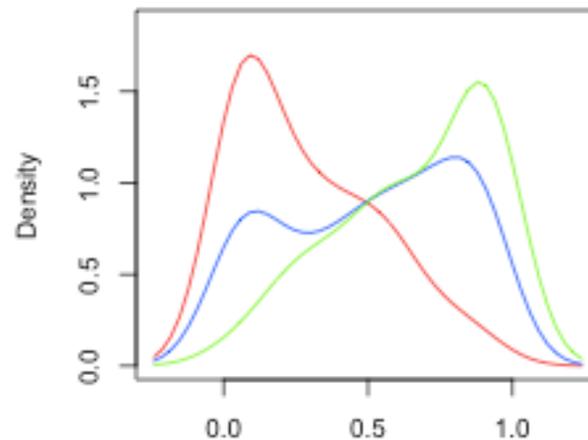
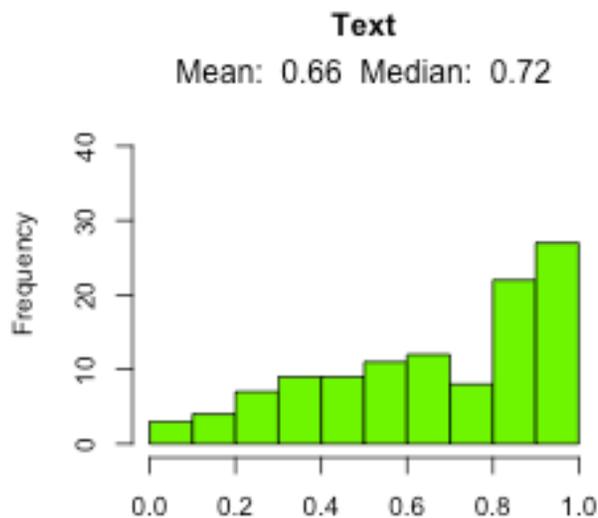
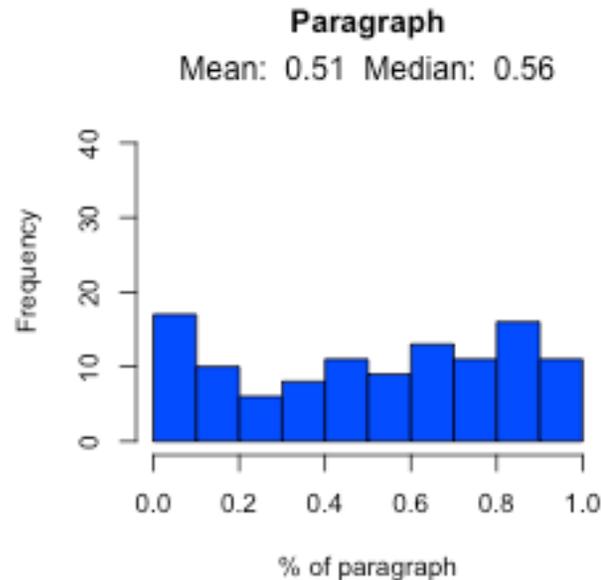
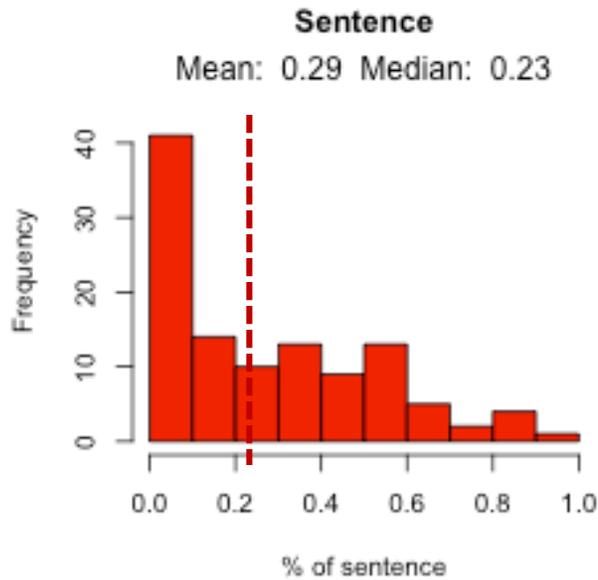
3.2 The textual distribution of phraseological items

- Database enables us to extract positional data according to textual units
- By means of an R-script: Derive histograms with set number (e.g. 10) of bins and continuous density distribution for sentence/paragraph/text



3.2 The textual distribution of...

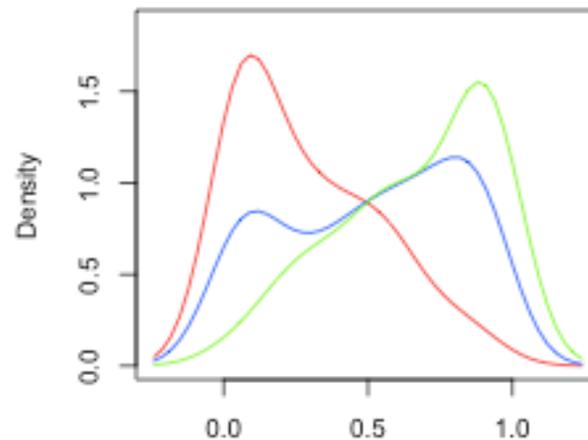
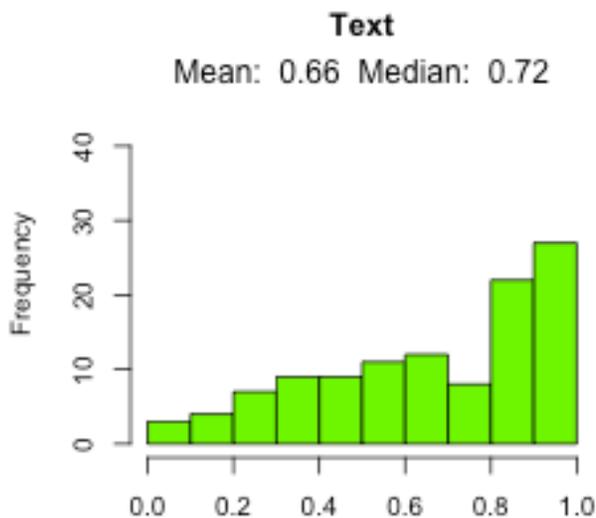
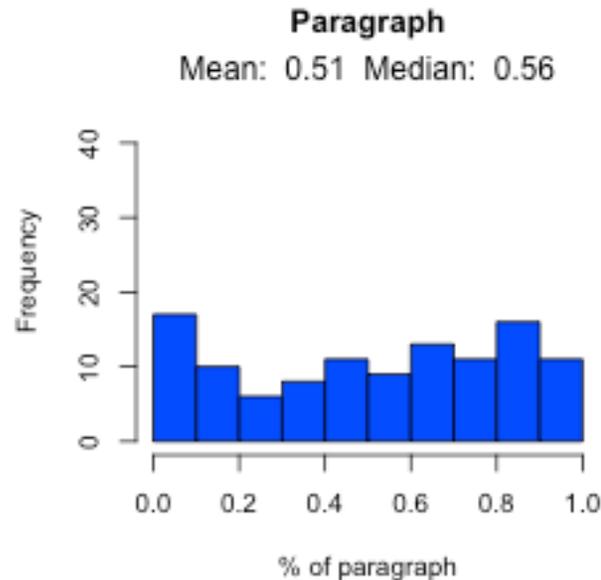
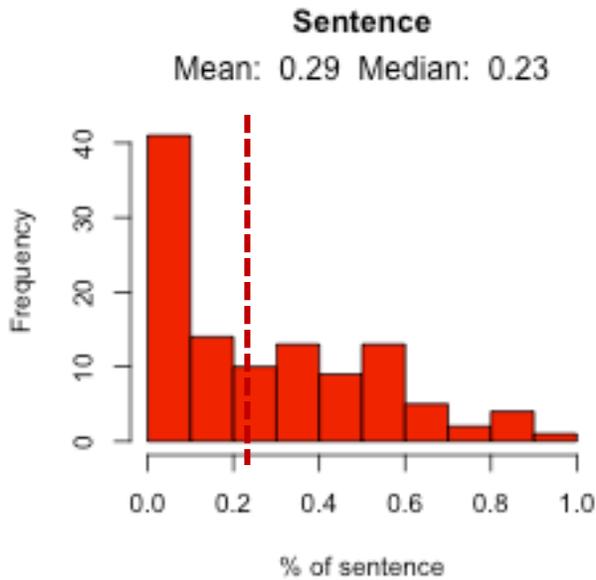
*it would be * to*



interesting	22
hard	10
difficult	9
useful	6
important	5
easy	4
helpful	4
worthwhile	3
preferable	3
easier	3
possible	3
unfair	3
false	2
appropriate	2
impossible	2
best	2
better	2
necessary	2
wise	2

3.2 The textual distribution of...

*it would be * to*



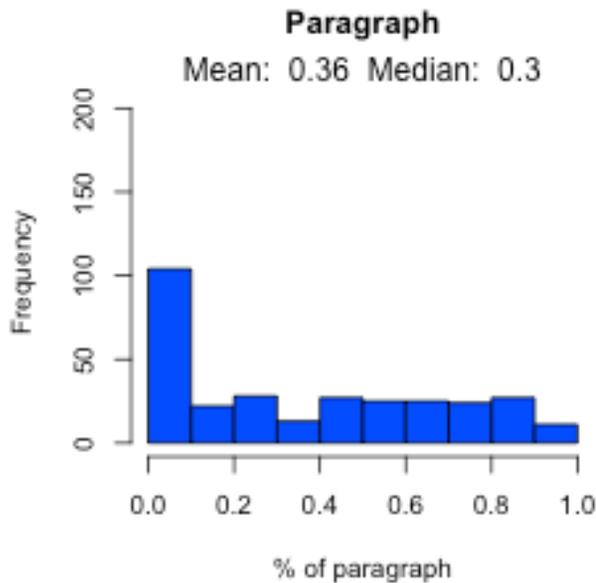
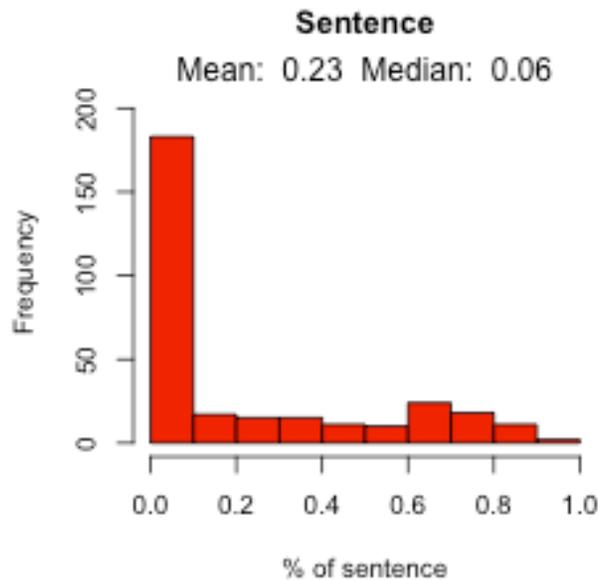
-Avoidance of sentence-final position

-No marked preference for particular paragraph positions

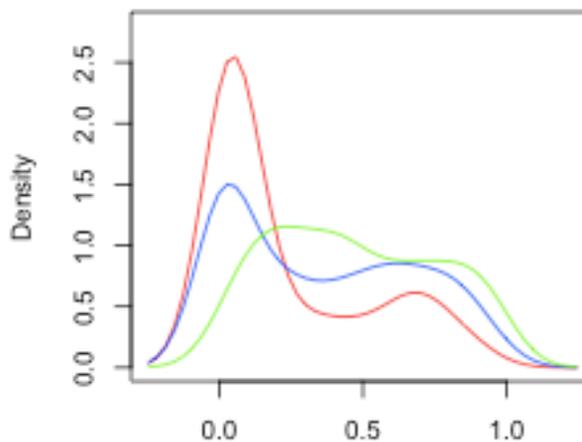
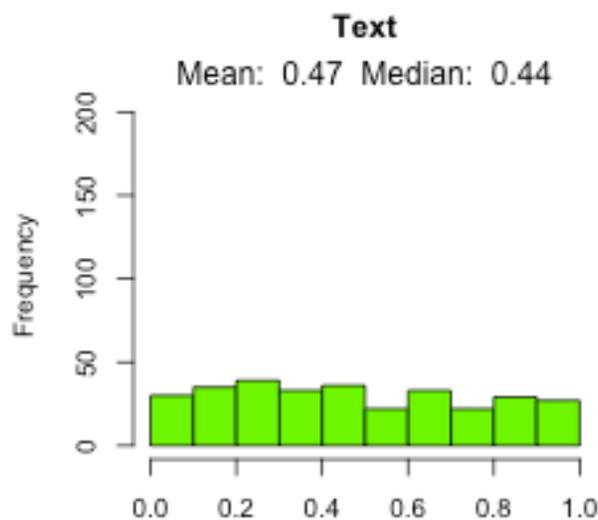
-Text-final preference

3.2 The textual distribution of...

in addition to



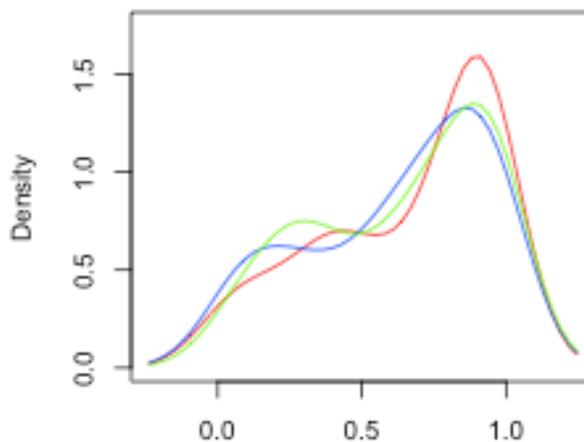
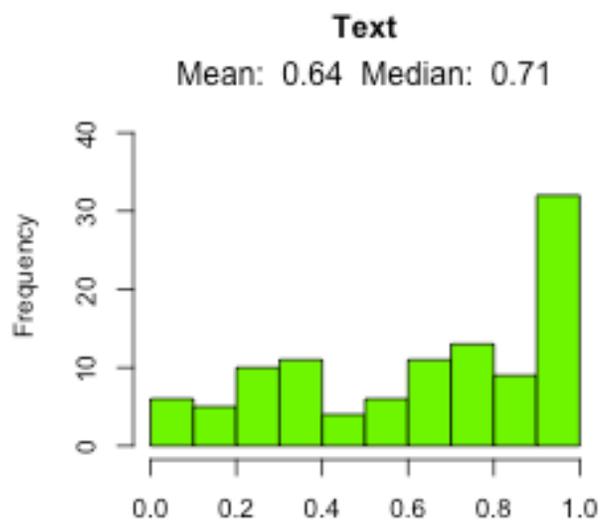
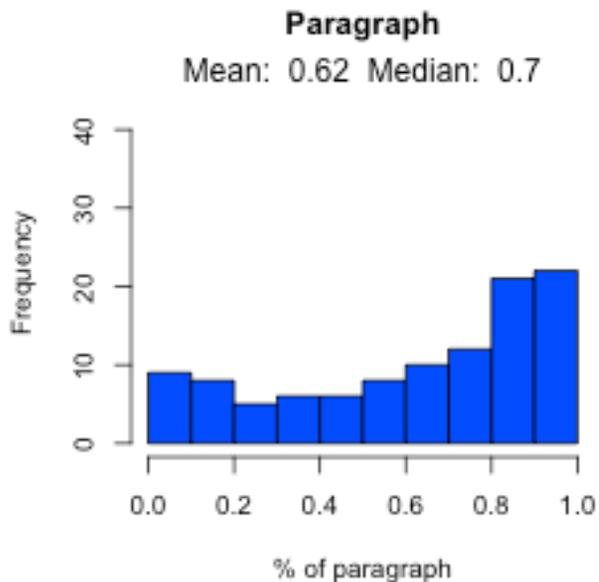
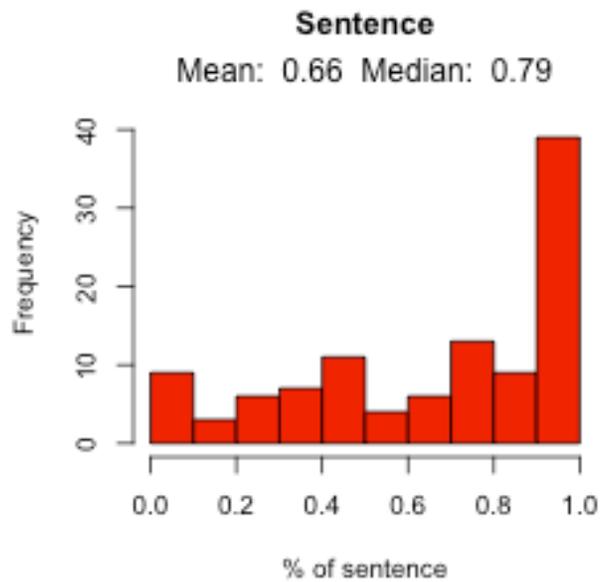
- Strong sentence-initial preference
- Paragraph initial preference
- No marked text-positional preferences



3.2 The textual distribution of...

in the future

- Strong sentence and text final preference
- Tends towards the end of the paragraph



3.2 The textual distribution of phraseological items

- **Alternative approach: Group items by positional tendencies**
 - Retrieve all 3–5 grams and 3–5 p–frames occurring 100+ in MICUSP
 - Calculate **percentage distributions** using 10 bins for sentences, paragraphs and text positions according to first word of each item
 - Sort items according to various positions, e.g. sentence-initial (S1+S2+S3), paragraph-final (P10+P9+P8), text-medial (T4+T5+T6) to group them by text positional behavior
- Look at results for positional tendencies of items within the **paragraph**

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3.2 The textual distribution of phraseological items

Paragraph initial

one of the most
of this study
of the most
in addition to
there are many
the purpose of
a series of
one of the
the issue of
the concept of

medial

in addition the
whether or not
he does not
it is possible
in other words
found that the
at the time
as a result of
this is not
would have been

final

in this way
in the future
the absence of
the possibility of
should not be
likely to be
as a whole
may not be
but it is
needs to be

3.2 The textual distribution of phraseological items

Findings are pedagogically relevant:

- Important for novice writers to identify commonly used phrases in discourse of a discipline
- Important for EAP teachers and novice academic writers to know **which** items/phrases are used **where** in a text
- In teaching and in materials creation it appears that textual positioning should be given greater attention

4. Concluding thoughts

- Corpora as **powerful tools** in the study of academic discourse
- Corpora and corpus–analytic techniques help highlight **phraseological items** in texts
 - insights into meaning creation
 - insights into (disciplinary) terminology
 - insights into textual colligation
 - insights into aboutness/topicality
 - insights into stylistic preferences of writers
- Use new tools and techniques to explore corpora in new ways and **discover new aspects of the patterned nature of language**

More 4-grams...

Freq	Collocation
927	thank you very much
218	thank you thank you
55	thank you for that
53	thank you mr chairman
52	well thank you very
51	very much thank you
42	thank you for your
41	you very much thank

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