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> Corpus:

- >collection of texts & language samples
- it provides evidence of real language in use (more reliable than NS's intuition)
- A way of collecting and storing data, which can be accessed by means of corpus query programmes (WordSmith Tools, AntConc, The Sketch Engine, etc.)
- ➤ A corpus tells us what language is like (descriptive approach)

➤ A corpus is a more reliable guide to language use than NS intuition is. Cook (2001) points out that although a NS has experience of very much more language than is contained in even the largest of corpus, much of that experience remains hidden from introspection.

- ➤ MAIN USES: research/teaching purposes; translation; contrastive studies; discourse analysis

PROS	CONS
RELIABILITY: results are NOT based on human intuition, which is a poor guide to collocation, phraseology, prosody and phraseology. Frequency counts: lexis, grammar	It does not give information about whether something is possible or not, only whether it is frequent or not (Sinclair 1991; Biber et al. 1998; McEnery & Wilson 2001; Hunston 2002)
It provides evidence for collocations and phraseology: access to plenty of examples of real language in use. It is stored electronically: it can be studied non-linearly, and both quantitatively & qualitatively	It may claim to be representative, but all attempts to draw generalisations from a corpus are in fact extrapolations (Hunston 2002). WATCH OUT! A corpus is always a SAMPLE of language.

> TYPOLOGY:

- Specialised corpus (of a variety of language/domain): representative of a given type of text & used to investigate a particular type of language (e.g., Health Science Corpus)
- ❖ General corpus: a corpus of texts of many types; much larger than a specialised one. It may be used to produce reference materials for language learning or translation, and it's often used as a baseline for comparison against more specialised corpus (i.e., as a reference corpus) (e.g., British National Corpus; Bank of English)

- *Comparable corpus: two or more corpora in different languages (Eng. & Sp.) or in different varieties of a language (BrE vs. AmE). They are designed along the same lines (e.g., same size, same typology of texts, etc.)
- ❖ Parallel (translated) corpus: two or more corpora in different languages (Eng. & Sp.), each containing texts that have been translated from one language to another.

- Learner corpus: a collection of texts produced by learners of a language; aims at identifying how the language of NNS differs from the language of NS. (e.g. *The International Corpus of Learner English, the VESPA project*)
- ❖ Diachronic corpus: a corpus of texts from different periods of time, so as to trace the development of linguistic aspects throughout different periods of time (e.g., Helsinki Corpus, a 1.5 million word corpus which consists of English texts from 700 to 1700)

- > Issues to bear in mind in corpus design:
 - > Corpus type: general/specialised corpus?
 - **≻**Content
 - ➤ Parts & type of files (sections & subsections?/ whole texts or extracts from texts?)
 - ➤ Size (manageable data!)
 - **➤** Balance & Representativeness
 - **≻** Permanence

"It is no exaggeration to say that corpora, and the study of corpora, have revolutionised the study of language, and of the applications of language, over the last few decades. The improved accessibility of computers has changed corpus study from a subject for specialists only to something that is open to all." (Hunston 2002, p. 1)

What does processing data provide?

- Frequency
- Collocations
- Phraseology

The words in a corpus can be arranged in order of their frequency in that corpus.

Possible applications: comparing frequency lists from different corpora

Example 1:

Below are the top 25 words in a corpus of politics dissertations compared with a corpus of materials science dissertations and with the *Bank of English* corpus (University of Birmingham)

Table 1.1. Word frequency comparisons across corpora

	General corpus	Materials science	Politics	
1	THE	THE	THE	
2	OF	OF	OF	
3	TO	AND	TO	
4 5	AND	IN	AND	
5	A	TO	IN	
6 7	IN	A	Α	
7	THAT	IS	THAT	
8	S	THIS	IS	
9	IS	P	AS	
10	IT	THAT	WAS	
11	FOR	FOR	FOR	
12	I	BE	IT	
13	WAS	AS	THIS	
14	ON	HEAD	P	
15	HE	ARE	ON	
16	WITH	WITH	BE	
17	AS	IT	BY	
18	YOU	BY	WHICH	
19	BE	ON	S	
20	AT	WAS	NOT	
21	BY	AT	INTERNATIONAL	
22	BUT	WHICH	WITH	
23	HAVE	FROM	AN	
24	ARE	FIGURE	QUOTE	
25	HIS	AN	ARE	

26	FROM	NOT	FROM
27	THEY	HAS	WERE
28	THIS	WERE	POLICY
29	NOT	CAN	STATES
30	HAD	THESE	BUT
31	HAS	BEEN	STATE
32	AN	HAVE	WOULD
33	WE	OR	OR
34	N'T	SURFACE	ITS
35	OR	USED	MAZZINI
36	SAID	C	THEIR
37	ONE	ENERGY	HEAD
38	THERE	TEMPERATURE	AT
39	WILL	ALSO	HAD
40	THEIR	WILL	HAVE
41	WHICH	CONTRAST	MORE
42	SHE	TWO	BRITAIN
43	WERE	FIELD	THEY

Another possible application is to look at the frequency of given words, compared across corpora

Example 2:

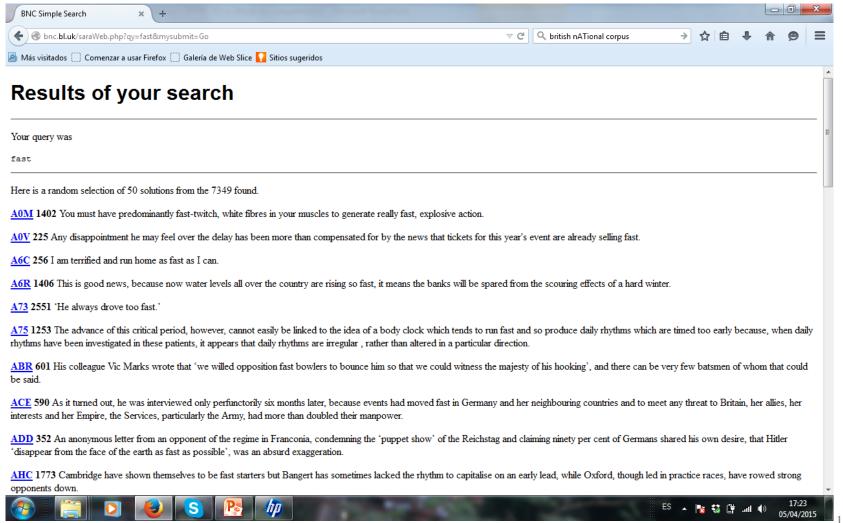
Below are the frequency counts of *must*, *have to*, *incredibly* and *surprisingly* across corpora (per million words) (Hunston 2002:6)

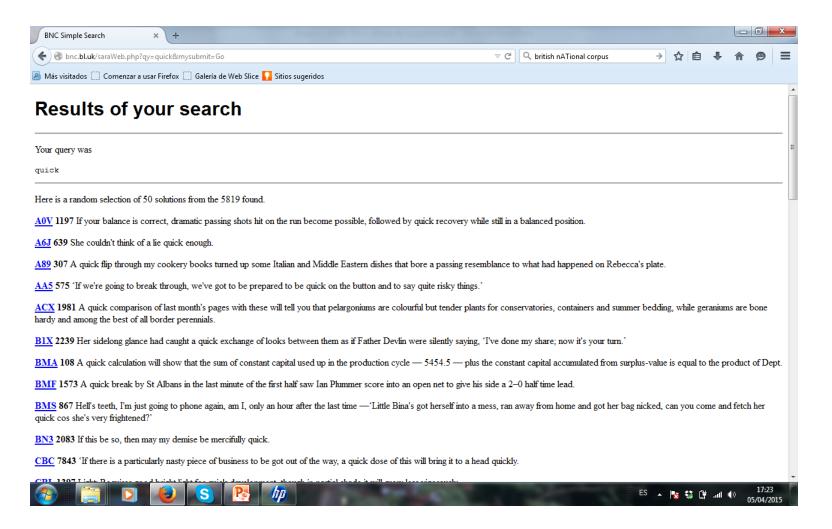
Books	Times	Spoken
683	460	363
419	371	802
1102	831	1165
8	10	15
25	29	4
33	39	19
	683 419 1102 8 25	683 460 419 371 1102 831 8 10 25 29

Another approach is to compare the **frequency of** use of two lemmas in a corpus

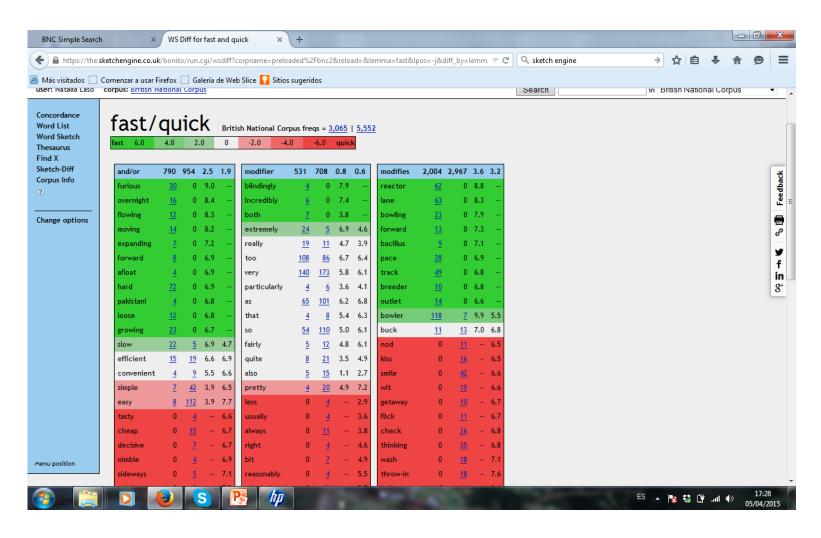
Example 3:

Below are two screenshots from the *BNC*, each of which shows the frequency counts of the lemmas fast and quick, respectively





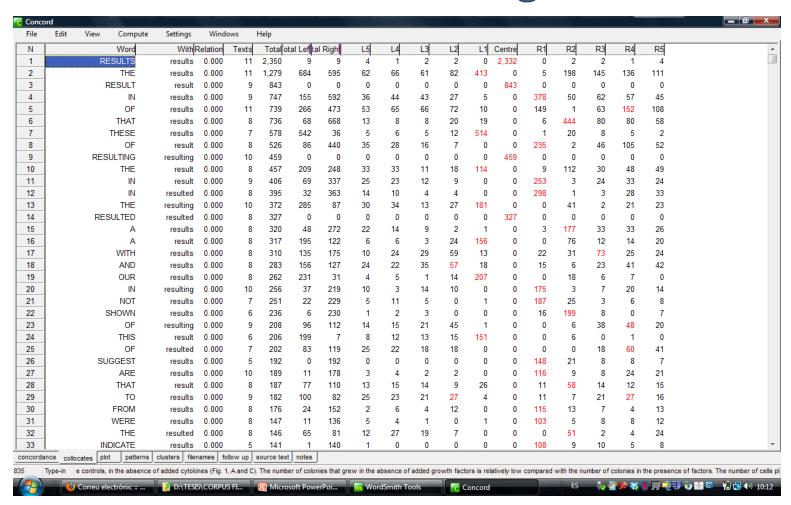
- Let's have a look at some BNC corpus data provided by The Sketch Engine (<u>©Lexical Computing</u>):
- a) Which one is more frequently used?
- b) What kind of contexts allow for both?
- c) What contexts do show a preference for *fast* or *quick*?



Another example of how corpus data can be exploited is the calculation and, most importantly, analysis of **collocations**

What is a collocation?: Statistical tendency of words to co-occur

Collocations can indicate pairs of lexical items (e.g., shed light; ride a horse; brew tea; critically ill), or the association between a lexical word + its frequent grammatical environment (colligation), such as result in; his head; head of the department; a ... (bunch, group, type, part, etc.) of; the ... (woman, man, problem, etc.) in



Concor File	Edit View Compute Settings Windows Help				
N	Concordance	Set Tag Word #Sen Sen	Para Para lea	lead Sect Sect	File
1	polymorphism in MHC genes Table 4. Summary of polymorphism results. G34 Table 1. The strains used in this study Table 2. Let			031%	Tables.tx
2	in activated MAP kinase strains Table 9. mpk-1 null mutations result in maternal effect larval lethality. G32 Table 1. Progeny ra	tios 930 9778%	029%	029%	Tables.tx
3	, ICAM-1, and VCAM-1. JCl26 Table 1. Cholecystokinin-8 does not result in conditioned taste aversion. JCl27 Table I Lung Weight,	2,578 24556%	030%	030%	Tables.ta
4	lines. G38 Table 1. Conflicting site patterns Table 2. The results of the test of equal age of nonsynonymous and	1,153 12520%	036%	036%	Tables.t
5	cultures (Fig. 5; P < 0.05). In contrast, TIMP-3 overexpression resulted in a significant dose dependent increase in the BrdU in	dex 189,000,70 5 35%	059%	059%	Results.t
6	with uninfected controls (Fig. 5). TIMP-2 overexpression, however, resulted in a significant dose-dependent decrease in the	188,968,70321%	059%	059%	Results.t
7	effect of RAd66 infection or addition of 10 □M Ro-31-9370 (results not shown) on cell number was observed at any time po	oint 188,725,69247%	059%	059%	Results.t
3	chronic, Table 1), 9 contained EBV DNA demonstrable by ISH. The results from 2 representative specimens are shown in Figure 3.	The 189,946,75 6 25%	059%	059%	Results.t
)	mechanisms, we examined whether RAdTIMP-3 infection resulted in induction of WAF1, a protein associated with the cel	189,390,72758%	059%	059%	Results.
0	nuclei and condensed chromatin (n = 3; Fig. 6, C and D). Similar results were obtained with the terminal dUTP nick end labeling	189,131,71419%	059%	059%	Results.
1	= 12). RAd66 infection did not inhibit chemotaxis (102 7%). These results indicate that inhibition of chemotaxis contributed in part	to 188,651,68816%	059%	059%	Results.
2	complications occurring at weeks 8 and 3 of HAART, respectively, resulted in a transient and reversible increase in susceptibility o	f 188,002,654 <mark>76%</mark>	058%	058%	Results.
3	apoptosis (12, 17, 20), we investigated whether HAART would result in a modification of the level of susceptibility of peripheral	187,807,65076%	058%	058%	Results.
4	experiments that demonstrate that effective antiretroviral therapy results in a rapid decrease in tissue apoptosis, we investigated	the 187,322,63437%	058%	058%	Results.
5	inhibited invasion per se, overexpression of TIMP-1, -2, or -3 resulted in an additional profound dose-dependent inhibition (Fig	. 2 188,497,67871%	059%	059%	Results.
6	from uninfected or RAd66-infected cultures. RAdTIMP-3 infection resulted in dose-dependent induction of TIMP-3 both in the total	cell 188,295,66914%	058%	058%	Results.
7	in the levels of peripheral CD8 T cells (Fig. 6). Altogether, these results indicate that circulating peripheral T cells are in an	188,077,65612%	058%	058%	Results.
8	nor CMV DNA was detectable in any tissue. When these results were correlated with the H&E data described in Table 1,	the 190,074,76512%	059%	059%	Results.
9	accessory cells. However, our results are consistent with previous results using primary murine fetal liver cells infected with retrovir	rus 194,832,97245%	050%	050%	Results.
0	to growth factors produced by accessory cells. However, our results are consistent with previous results using primary murin		050%	050%	Results.
1	after (day 7) treatment of HIV-infected subjects with G-CSF. As a result of G-CSF treatment, PMN shifted from a growth-promoting		060%	050%	Results.
2	study period (P = not significant [ns] by ANOVA). Because the results obtained with the two different vehicle preparations were	196,299,03325%	061%	051%	Results.
3	the biological effects observed in this mouse model are the result of chronic low level expression of activated hc. Hematolog	ical 195,302,98 9 52%	051%	051%	Results.
4	that this activated receptor may produce a submaximal signal resulting in reduced colony formation in vitro (23). The numbers	of 194,866,97377%	060%	050%	Results.
5	subjects to 4⊒1.3% of normal PMN levels. To confirm the EIA results demonstrating reduced 5-LO metabolic capacity in PMN		050%	050%	Results.
6	or A=V dysfunction (Table 3). These results show that DMPK loss results in A=V conduction delay and demonstrate a critical role		059%	059%	Results.
7	had any higher-grade atrial or A=V dysfunction (Table 3). These results show that DMPK loss results in A=V conduction delay a	and 191,372,82013%	059%	059%	Results.
8	(specified in the Methods section), and all gave comparable results. Although the immunostaining data confirmed the preser	: :	059%	059%	Results.
9	viral replication. Suppression of viral replication by HAART may result in a substantially decreased antigenic stimulus, reduced	193,228,89524%		050%	Results.
0	node, with a lesser decrease in the follicular center areas. These results suggest that viral antigen stimulates immune activation i			050%	Results.
1	in DMPK-deficient mice differentially compared with controls. These results indicate that sympatholytic effects are not directly	191,732,83915%		050%	Results.t
2	tissue apoptosis and peripheral CD4 T cells (Fig. 3). These results indicate that HAART decreases lymphoid tissue apoptos		058%	058%	Results.
	, and the state of				

Concord

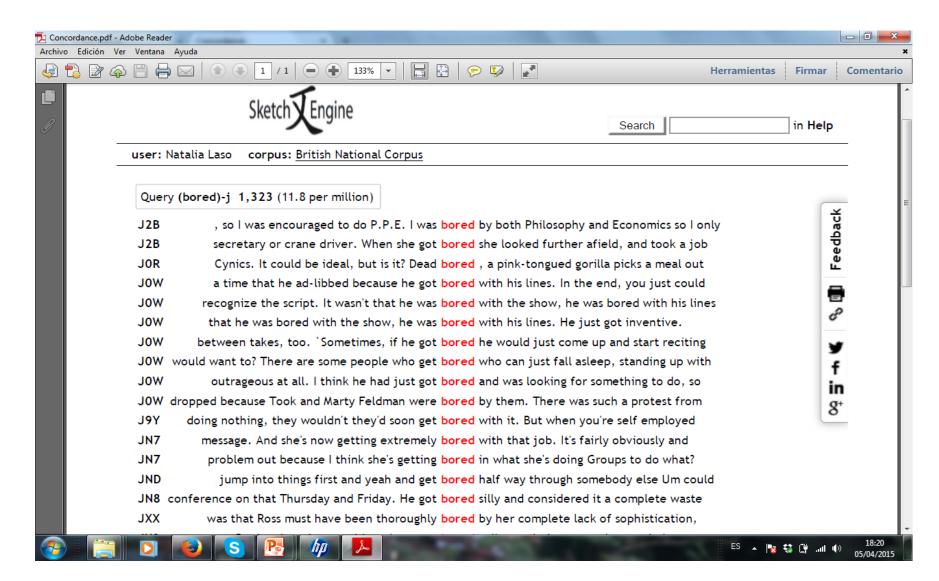
Most users access a corpus through concordance lines, which bring together many instances of a key word in context (KWIC lines) and allow the user to observe regularities in use that would remain unseen without a context.

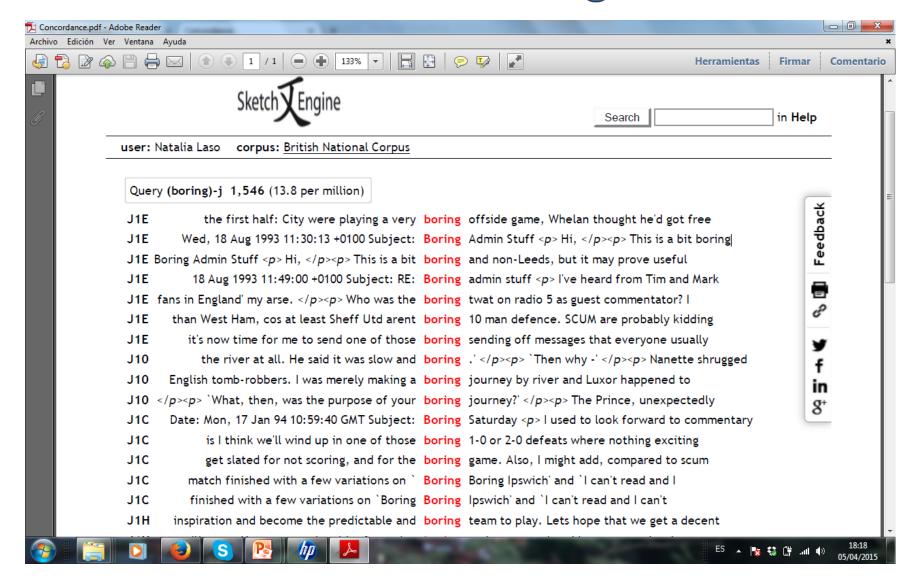
It is through concordance lines that phraseology (i.e., multiword expressions, clusters, lexical bundles) is observed.

Phraseology and the use of concordancing programmes are very useful tools to explain certain linguistic phenomena, such as words that are often confused by L2 learners, polysemy, etc.

Example 4:

Below are a few concordance lines of the adjectives boring and bored (selected at random from the BNC)





"The importance of corpora lies not in the answers they provide but in the questions they provoke." (Widdowson 2000:23)