

### Association Internationale pour la Recherche en Didactique du Français (AIRDF)

# Quick start, slow finish: Learning the lexis of French is like learning to play the guitar

DS-1540

15h10 – 15h50 Bloc J-6 Tom Cobb







#### Association Internationale pour la Recherche en Didactique du Français (AIRDF)

## Vite à demarrer, lente à finir :

Acquérir le lexique du français est comme apprendre à jouer au guitare

DS-1540

15h10 – 15h50 Bloc J-6 Tom Cobb





http://lextutor.ca/AiRDF\_2016.pptx



#### Association internationale pour la Recherche en Didactique du Français (AIRDF)

## Earlier title Profiling French Vocabulary:

The shape of lexicons by frequency & coverage

DS-1540

15h10 – 15h50 Bloc J-6 Tom Cobb





## Resumé

Le profilage de la fréquence lexicale (PFL, Laufer et Nation, 1995), très influent dans la recherche et l'instruction du vocabulaire en anglais langue seconde (English as a Second Language, ou ESL), a eu un début plutôt lent en français. Ceci est dû notamment au manque d'accès à des grands corpus français à partir desquels des informations pédagogiquement pertinentes sur la fréquence des mots pourraient être dérivées. Des efforts pionniers dans les années 1990 (Goodfellow et Lamy, 2002) ont facilité des comparaisons prometteuses de la couverture lexicale des textes en français et en anglais (Cobb & Horst, 2004), ce qui a eu des implications pédagogiques qui étaient à la fois intéressantes et pratiques (Ovtcharov, Cobb & Halter, 2006), mais non concluantes, en raison de l'incomplétude de l'information sur lesfréquences (des mots). En revanche, présentement le travail le travail qui sous-tend le Dictionnaire des fréquences du français de Lonsdale et Lebras (Routledge 2009) a produit et mis à disposition des informations sur la fréquence des mots autant complète que lemmatisée, tirée de corpus français. Cela signifie que les chercheurs et les enseignants peuvent désormais, en principe, utiliser la méthode dePFL pour explorer en profondeur la composition lexicale, la sophistication, et la «richesse» des textes français.

À être discuté sera la méthode d'intégration des informations sur la fréquence au sein d'une méthodologie **PFL**, des exemples des types de recherche qui rendent possible ce profilage, et les moyens par lesquels les chercheurs peuvent accéder aux outils de cette analyse afin de les utiliser pour leurs propres fins. Les premiers résultats représentatifs de l'application de cette méthodologie en français seront offerts, y compris une suggestion que le français déploie ses ressources lexicales différemment de l'anglais et peut présenter des défis lexicaux nouveaux et précédemment indéfinis à ses apprenants.

## Key assumptions

- (1) Reading competence is largely lexical competence
- (2) Lexical competence includes but is not limited to knowing words
- (3) The big problem is WHICH words are most important to know
- (4) That word **frequency** is the best available guide to the utility of knowing a word
  - And essential to any discussion of "lexical competence"
- (5) That learning starts with **recognition** of form and main meaning
  - --- which is largely sufficient for reading
    - --- with **production** coming later

## *Frequency* - the main <u>new</u> idea of the "vocab revolution" 1990- in ESL/FL...

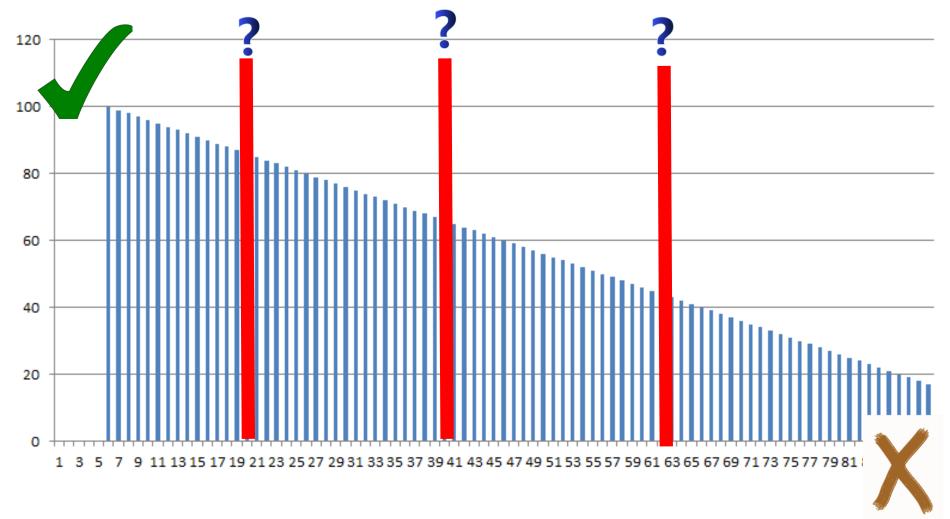
Is Zipf's <u>old</u> idea that some words get **way** more use in any language



But now made useable by corpus technology



## Computer + empirical research = where to draw the line on frequency



## **Key Concepts**

### Frequency

- Word: The number of occurrences of a word in a corpus
- Family: The occurrences of a whole word family in a corpus
  - Family = Word + Inflections + derivations

### Frequency Band

- Groups of (usually 1,000) word families (or k-lists)

### Frequency profile

- The % of word tokens in a particular text that are from each band
  - E.g, 70% from first 1,000, 10% from 2<sup>nd</sup> 1,000, etc.

## Example

- "The cat sat on the mat"
  - The 1k
  - Cat 1k
  - Sat 1k
  - On 1k
  - The 1k
  - Mat 4k
- Six words = 100% of text
  - 1k items = 5/6 of text = 83%
- So 1k gives 83% coverage in this text
  - Or "accounts for" 83% of the tokens"

#### So the profile is:

- 1k=83%
- 4k=17%

#### The pedagogical question is:

- Can a learner with 1,000 words 'read' this text?
  - I.e. infer the meaning of 'mat' to build a semantic model of the entire proposition

#### The empirical research is:

- 95% coverage is needed for reliable inference
  - So 'mat' here would be Maybe

## Visual of a VP for Text "x" (v. 2016)

Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %	
K-1 Words:	218 (69.21)	251 (71.51)	828 (85.27)	85.27	
K-2 Words:	45 (14.29)	50 (14.25)	66 (6.80)	92.07	
K-3 Words:	22 (6.98)	23 (6.55)	36 (3.71)	95.78	
K-4 Words:	6 (1.90)	8 (2.28)	11 (1.13)	96.91	
K-5 Words:	5 (1.59)	6 (1.71)	6 (0.62)	97.53	
K-6 Words:	1 (0.32)	1 (0.28)	1 (0.10)	97.63	
K-7 Words:	2 (0.63)	2 (0.57)	2 (0.21)	97.84	
K-8 Words:	2 (0.63)	2 (0.57)	2 (0.21)	98.05	
K-9 Words:					
K-10 Words:	4 (1.27)	4 (1.14)	4 (0.41)	98.46	h.
K-11 Words:	2 (0.63)	2 (0.57)	2 (0.21)	98.67	ht
K-12 Words:	1 (0.32)	1 (0.28)	2 (0.21)	98.88	le
K-13 Words:	2 (0.63)	2 (0.57)	2 (0.21)	99.09	
K-14 Words:	1 (0.32)	1 (0.28)	1 (0.10)	99.19	Vp
K-15 Words:					
K-16 Words:					
K-17 Words :	1 (0.32)	1 (0.28)	1 (0.10)	99.29	
K-18 Words:	1 (0.32)	1 (0.28)	1 (0.10)	99.39	
K-19 Words:					
K-20 Words:	1 (0.32)	1 (0.28)	1 (0.10)	99.49	
K-21 Words:					
K-22 Words:					
K-23 Words:					
K-24 Words:	1 (0.32)	1 (0.28)	1 (0.10)	99.59	
K-25 Words:					

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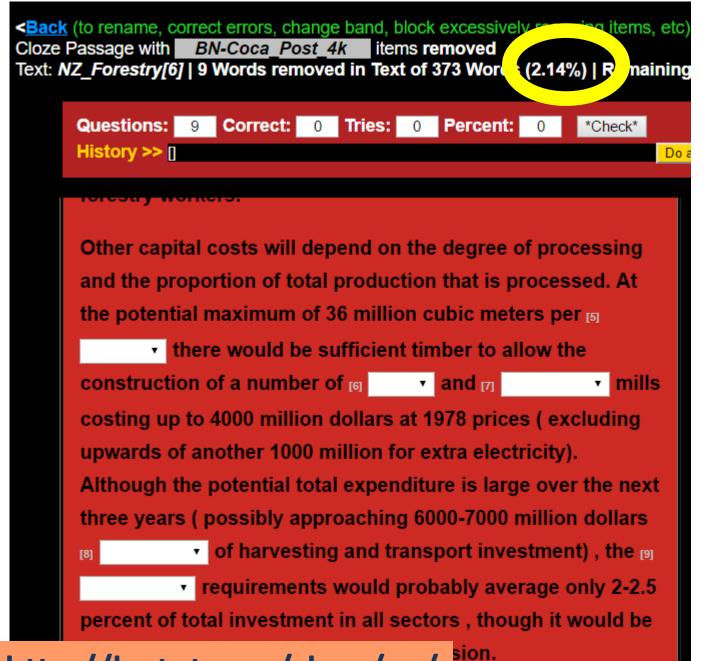
## Key concept:

## Minimal Lexical Competence for reading

- Defined in English as knowing 95% of the words in a text
  - Or, when your lexical knowledge cover 95% of the words in a text
    - Or, your knowledge gives you 95% coverage of a text

## —As determined how?

Back (to rename, correct errors, change band, block excessively recurring items, etc) loze Passage with BN-Coca Post 3k items removed ext: NZ_Forestry[6]   19 Words removed in Text of 373 Wor s (4.83%)   emaining				
Questions: 19 Correct History >> [	: 0 Tries: 0 Pe			
Other capital costs wi and the proportion of the potential maximum	total production the	at is processed. At meters per		
the construction of a mills costing up to 40 excluding [16]	number of [14]	and <sub>เหตุ</sub> 🔻 🔻		
electricity). Although over the next three ye million dollars [ชา]	ars ( possibly appro	oaching 6000-7000  ✓ and transport		
probably average only sectors, though it wo	y 2-2.5 percent of to	otal investment in all		

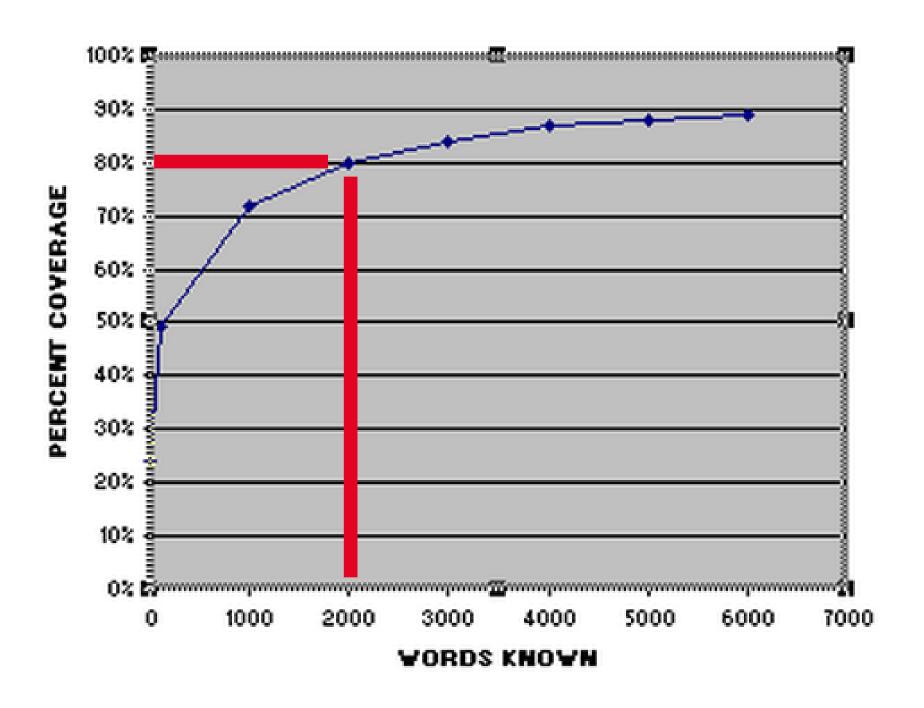


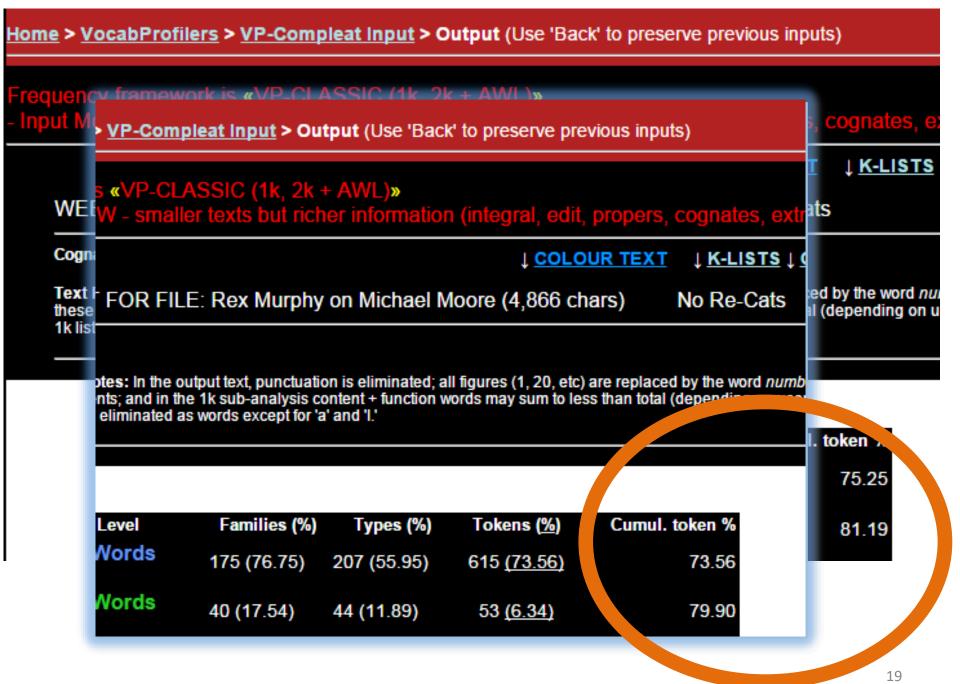
## Classic coverage figures for English

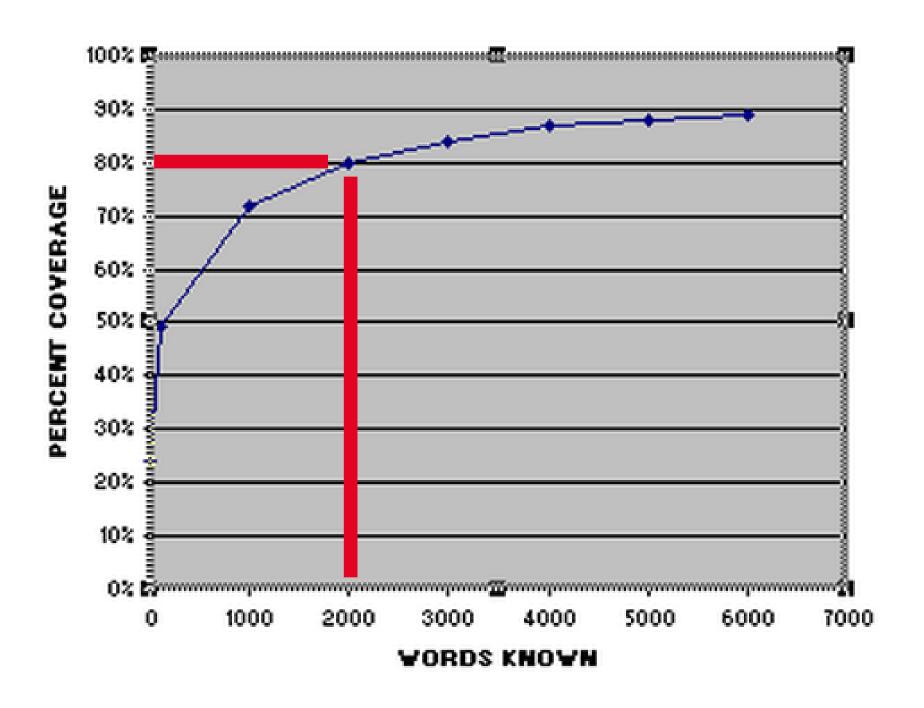
Table 3: Average coverage based on a corpus of 5 million words

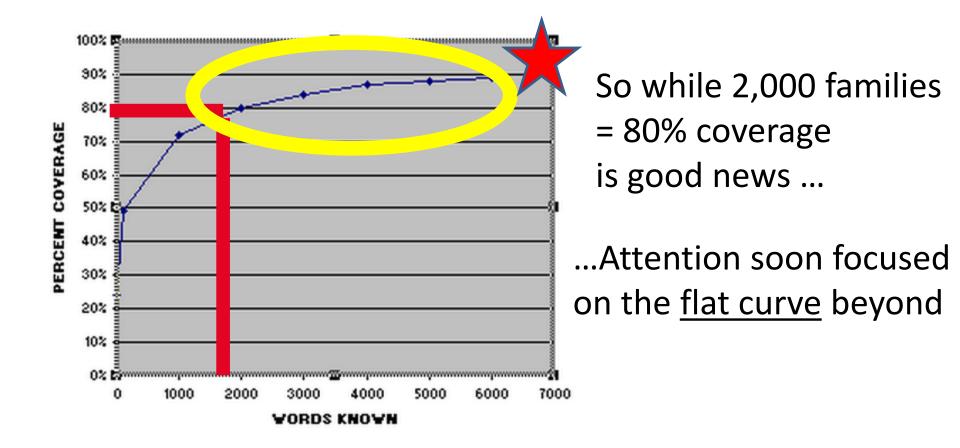
Number of words	Coverage provided
10	23.7%
100	49%
1,000	74.1%
2,000	81.3%
3,000	85.2%
4,000	87.6%
5,000	89.4%
12,448	95%
43,831	99%
86,743	100%

Source: Carroll, Davies & Richman (1971).

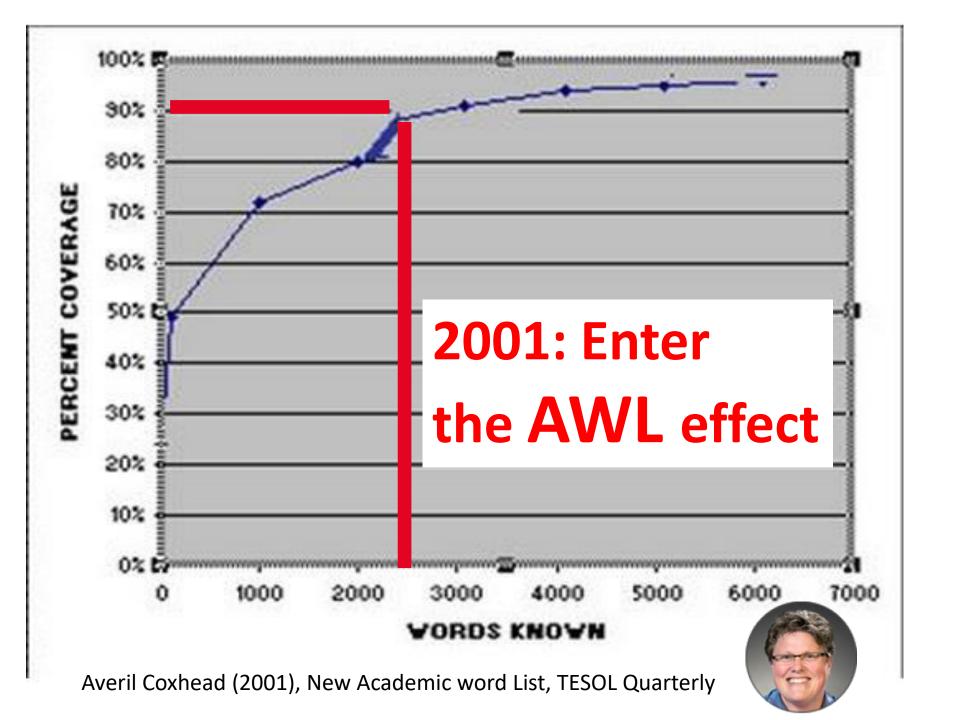








Especially as empirical research showed basic comprehension depends on **95**% words known -e.g. Laufer 1989



## Fairly uniform across disciplines

Table 2: Lexical frequency profiles across disciplines (coverage percentages).

Brown segment	Discipline	No. of words	1000	2000	1000 + 2000	AWL	1K + 2K + AWL
J32	Linguistics	2031	73.51	8.37	81.88	12.60	94.48
J29	Sociology	2084	74.23	4.75	78.98	13.44	92.42
J26	History	2036	69.3	5.7	75.00	14.49	89.49
J25	Social Psychology	2059	73.63	3.11	76.74	14.38	91.12
J22	Development	2023	76.42	4.55	80.97	12.26	93.23
J12	Medicine (anatomy)	2024	71.05	3.80	74.85	6.72	81.57
J11	Zoology	2026	75.12	6.17	81.29	7.31	88.60
M			73.32	5.21	78.53	11.60	90.13
SD			2.42	1.74	3.01	3.24	4.30

## So it was a reasonable question to ask, "Is there an AWL in French?"

## An interesting question for several reasons...

#### **1 PRACTICE**:

Investigate lexical competence in French on behalf of FL2 learners

#### 2 THEORY:

Investigate a curious puzzle

Since English AWL basically = French cognates...

So in French are these terms "academic words" or common words? Within or beyond 2k?

An interesting question ...

Which it gradually became possible to answer



🖐 Automatic Assessment of Language Learners' Vocabulary Use - Google Chrome i







26

www.lextutor.ca/vp/fr/recall01.html

## Assessing Learners' Texts using the Lexical Frequency Profile

Dahin Candfallow (Onen	Glyn Jones (City &			
Robin Goodfellow (Open	Guilds College)	Marie-Noëlle Lamy		
University)	City & Guilds	(Open University)		
Institute of Educational	International	Faculty of Education		
Technology	1 Giltspur Street	and Language Studies		
Open University	London EC1 9DD	Open University		
Milton Keynes MK7 6AA	, glvni@citv-and-	Milton Kevnes MK7		

www.lextutor.ca/vp/fr/glynn\_jones.html

## Compiling French word frequency lists for the VAT: a feasibility study

Glyn Jones, Consultant to the Project

[ "The project" being the Open University Lexical Frequency Project, coordinated by Robin Goodfellow, who has kindly provided me with these lists. - Tom Cobb ]

#### Summary:

In my opinion it is quite feasible, within the budgeted time frame, to produce word lists which would enable the construction of, at the very least, a working demonstration version of the Vocabulary Assessment Tool for French. However, if the PAROLE corpus (see below) can be made available then it should be possible to do better than this: in fact to produce word lists that are as valid for French as the General Service List and University Word List (the lists used by Laufer & Nation) are for English.

#### 1 Introduction

The aim of the Vocabulary Assessment Tool (VAT) project is to develop the necessary tools to derive a Lexical Frequency Profile (LFP) for texts written by learners of French, as an aid to assessing the quality of those texts.

www.lextutor.ca/vp/fr/glynn\_jones.html

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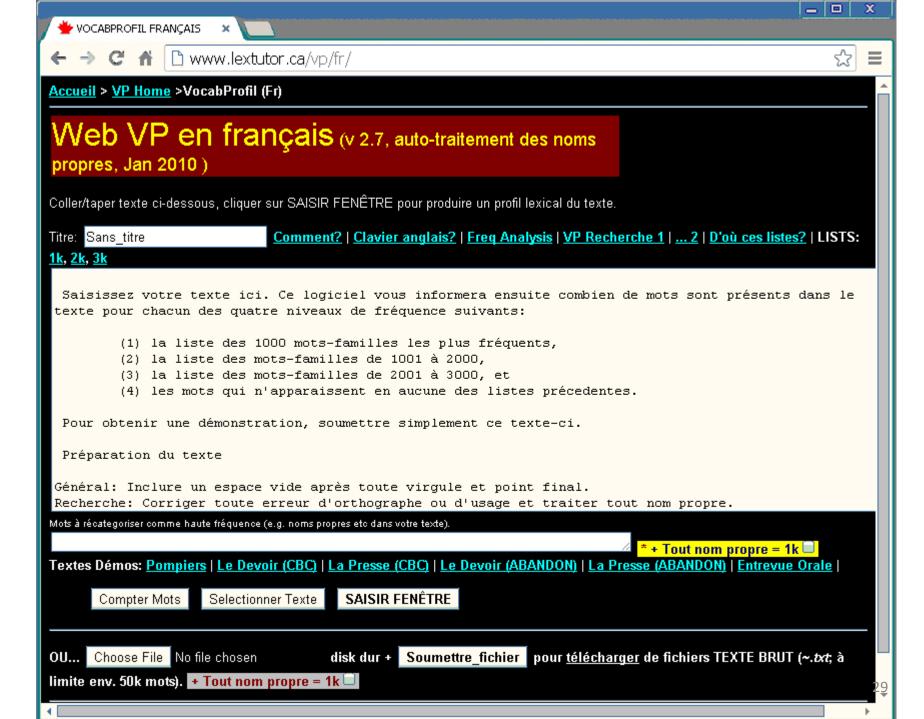
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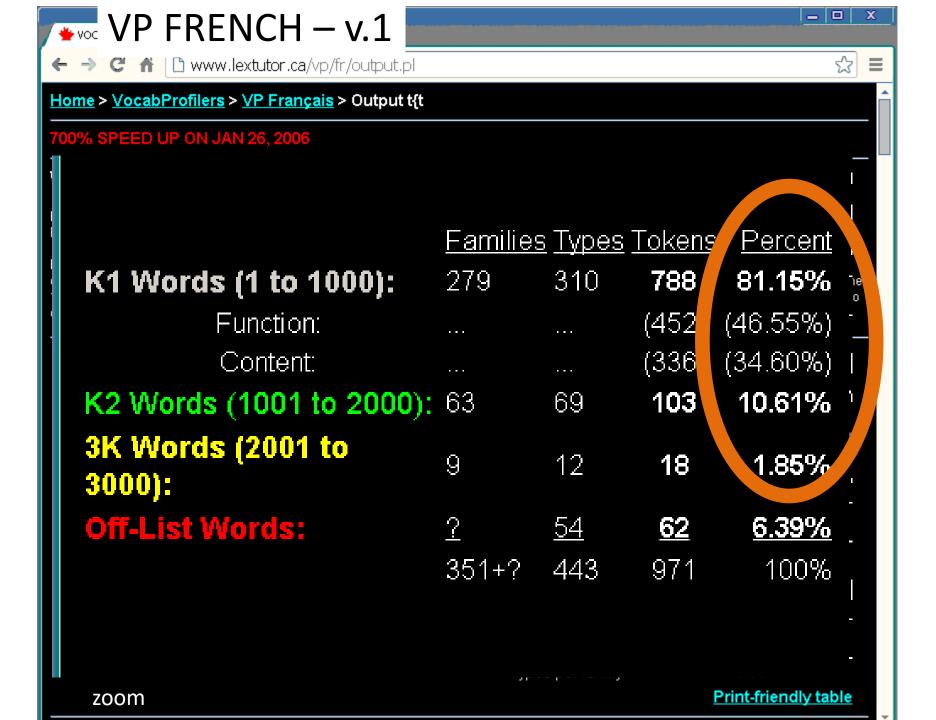
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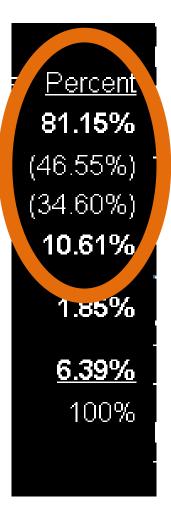




## English

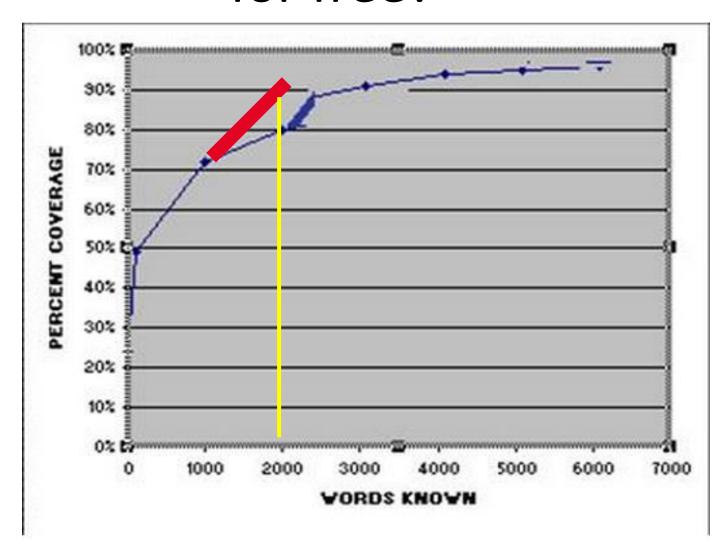
## French

Freq. Level K-1 Words	Types (%) 119 (70.41)	Tok .ns (%) 257 (77.88)
K-2 Words	11 (6.51)	14 (4.24)
AWL [570 fams] TOT 2,570	17 (10.06)	18 (1, 45)
Off-List:	25 (14.79)	41 (12.42)
Total (unrounded)	169 (100)	330 (100)



80%

## So is French getting the AWL effect for free?



## The question was gradually reformulated:

Is there an AWL in French?

"Is there **room** for an AWL In French?"

#### Language Learning & Language Teaching

Vocabulary in a Second Language

Edited by Paul Bogaards Batia Laufer

2004

#### CHAPTER 2

#### Is there room for an academic word list in French?

Tom Cobb and Marlise Horst Université du Québec à Montréal, Concordia University



#### Abstract

Extensive analysis of corpora has offered learners of English a solution to the problem of which among the many thousands of English words are most useful to know by identifying lists of high frequency words that make up the core of the language. Of particular interest to university-bound learners is Coxhead's (2000) Academic Word List (AWL). Analyses indicate that knowing the 570 word families on this list along with the 2000 most frequent families consistently offers coverage of about 85% of the words learners will encounter in reading an academic text in English. This finding raises the question of whether such lists can be identified in other languages. The research reported in this chapter provides an initial answer in the case of French. Lists of the 2000

### The answered seemed, "No"

1k+2k is already giving 90% coverage in French

(Because French contains its AWL within its common lexis?)

And the remaining 10% is presumably needed for technical, archaic, oddball, & misspelled items

With the implication that acquiring a functional lexical competence was *easier* in French

Less to learn for = coverage

#### **Scholar**

More ▼

[PDF] from lextutor.ca

#### Is there room for an academic word list in French

#### Authors

Tom Cobb. Marlise Horst

Publication date

2004/7/29

Journal

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Pages

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#### Publisher

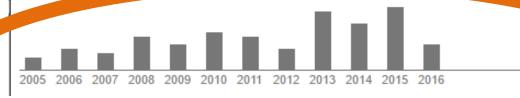
John Benjamins Publishing Company Amsterdam and Philadelphia

#### Description

Abstract Extensive analysis of corpora has offered learners of English a solution to the problem of which among the many thousands of English words are most useful to know by identifying lists of high frequency words that make up the core of the language. Of particular interest to university-bound learners is Coxhead's (2000) Academic Word List (AWL). Analyses indicate that knowing the 570 word families on this list along with the 2000 most frequent families consistently offers coverage of about 85% of the words learners will ...

#### Total citations

Cited by 96



## Meanwhile, back in English





### **BUT SHORT LIVED**

### 1. Definition of basic competence recalculated :

The Comprehension-Bar is raised 95% coverage → 98% coverage (Nation, 2006)

#### 2. Definition of technical lexis became less clear

Some domains just use common words ('needle' in nursing)

### 3. New corpora put the existence of AWL in question

- BNC lists (2005)
- BNC-COCA lists (2012)
- AWL just an artefact of the old pre-corpus 1k-2k frequency lists?

## <u>VP-BNC-Coca – new type of profile</u>

Freq. Level	Families (%)	Types (%)	Tokens ( <u>%</u> )	Cumul. token %
es (%)	Tokens	<u>(%)</u>	Cum	ul. token %
3.51)	600 <u>(71.</u>	77)		71.77
.14)	73 <u>(8.7</u>	<u>3)</u>		80.50
32)	16 <u>(1.9</u>	1)		82.41
1)	23 (2.7	<u>5)</u>		85.16
3)	10 <u>(1.2</u>			86.36
K-15 Wo		2 (0.54)	2 (0.24)	90.32
K-16 Wo	rds: 1 (0.33)	1 (0.27)	1 (0.12)	90.44
zoom K-17 Wo				39
K-18 Wo	rds: 1 (0.33)	1 (0.27)	1 <u>(0.12)</u>	90.56

#### So the new question about French is ~ Is there room for an AWL In French?

"How are the medium and low frequency lexical resources of French deployed in the remaining 10% space available?"

What does this imply for learning French?

Again, the question gradually became answerable  $\rightarrow$ 



#### aFREQUENCY dictionary of

#### FRENCH

CORE VOCABULARY FOR LEARNERS

Deryle Lonsdale and Yvon Le Bras

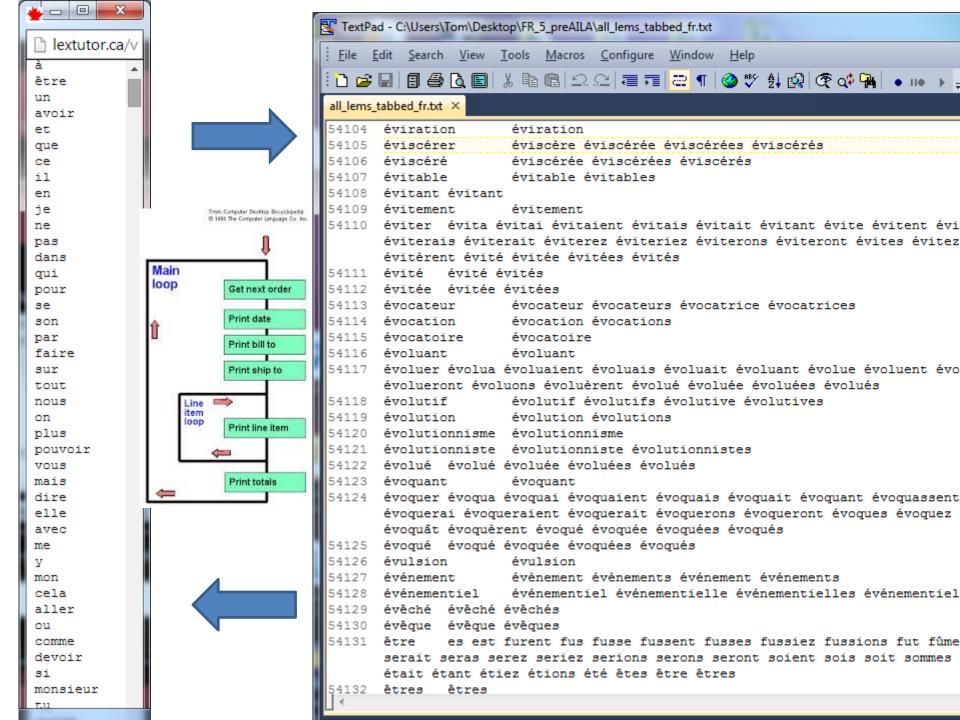
- Practical: the top 5000 most frequently used French words
  - Reamer friendly: gives you the core vocabulary for French quickly
    - Useful: 27 thematic boxes give the top words for a specific topic.

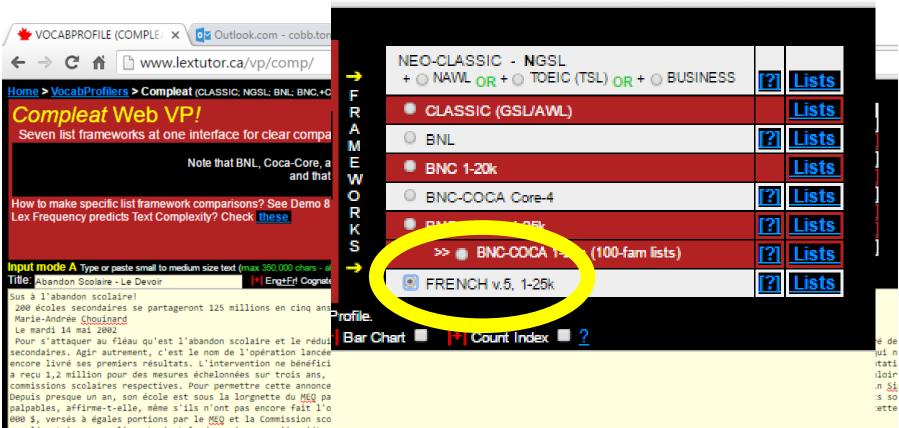




#### 25 lemmatized French k-lists

- From Lonsdale & Le Bras dictionary project at BYU
- Based on 23-million word corpus
- Continental + International French 50/50
- Spoken and written 50/50
- Literary 40%, expository 60%
- List-crunched for RANGE + FREQ





supplémentaires», explique Lucie Lalande, qui avoue s'inquiéter tion (MEO) propulse 125 millions en cinq ans dans un concentré de la recette classe composée d'élèves en échec dans les matières de ha similions par an les matières de ha similions par an les matières de ha similions par an les condaires ciblées par l'expérimentati e disputeront 25 millions par an distribués selon le bon vouloir Montpetit, Lucie Lalande, ouvrait sa porte au ministre Sylvain Si nt. À coups de centaines de milliers de dollars, les résultats so petits miracles du quotidien, l'école de 1510 élèves a reçu cette nse à tout, mais c'est avec ça qu'on embauche des ressources au terme de l'expérience-pilote. Le petit miracle a eu lieu par e les groupes de la 3e secondaire. «On a formé une classe de 20 av

#### FRENCH – v.5

Total

Freq. Level				
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K-22 Words:				
K-23 Words:				
K-24 Words:	1 (0.32)	1 (0.28)	1 (0.10)	99.59
K-25 Words:				
Off-List:	??	3 (0.85)	4 (0.41)	100.00

# So with this we can investigate the shape of the mid-frequency French lexicon And make plausible comparisons with English

- What lies between 90% and 95% coverage in French texts?
  - –Or between 90% and 98%?
- Is there "less to learn" in French than in English?
  - (Remembering that lemmas ≠ families)

#### 3 tests

#### Test 1

Translated popular texts

20 translated Readers' Digest texts

→ 20 Fr, 20 Eng

Half translated Eng->Fr, half Fr-> Eng

Total 2939 words Eng, 3650 words Fr

Run through VP-Fr as a mini-corpus (as a single file)

Ε	Freq. Level K-1 Words: K-2 Words: K-3 Words: K-4 Words:	Families (%) 497 (53.44) 177 (19.03) 121 (13.01) 52 (5.59) 28 (3.01)	609 (56.39)	Tokens (%) 2243 (76.32) 307 (10.45) 176 (5.99) 76 (2.59) 37 (1.26)	Cumul. token % 76.32 86.77 92.76 95.35	95%
N	K-6 Words : K-7 Words : K-8 Words :	18 (1.94) 10 (1.08) 11 (1.18)	18 (1.67) 11 (1.02) 11 (1.02)	18 (0.61) 18 (0.61) 14 (0.48)	97.22 97.83 98.31	000/
G	K-9 Words: K-10 Words: K-11 Words:	5 (0.54) 1 (0.11) 2 (0.22)	5 (0.46) 1 (0.09) 2 (0.19)	5 (0.17) 1 (0.03) 2 (0.07)	98.48 98.51 98.58	98%
L	K-12 Words: K-13 Words: K-14 Words: K-15 Words:	2 (0.22) 1 (0.11)	2 (0.19) 1 (0.09)	3 (0.10) 2 (0.07)	98.68 98.75	
	K-16 Words : K-17 Words : K-18 Words :	1 (0.11) 2 (0.22)	1 (0.09) 2 (0.19)	1 (0.03) 2 (0.07)	98.78 98.85	
S	K-19 Words: K-20 Words: K-21 Words:	1 (0.11)	1 (0.09)	3 (0.10)	98.95	
Н	K-22 Words: K-23 Words: K-24 Words: K-25 Words:	1 (0.11)	1 (0.09)	1 (0.03)	98.98	
	Off-List: Total (unrounded)	930+?	27 (2.50) 1080 (100)	30 (1.02) 2939 (100)	100.00	

	Freq. Level	Families (%)	2	Tokens (%)	Cumul. token %	
	K-1 Words:	443 (45.11)	592 (51.08)	2803 (76.79)	76.79	
	K-2 Words:	181 (18.43)	195 (16.82)	273 (7.48)	84.27	
	K-3 Words:	97 (9.88)	103 (8.89)	168 (4.60)	88.87	
•	K-4 Words:	63 (6.42)	64 (5.52)	83 (2.27)	91.14	
	K-5 Words:	56 (5.70)	58 (5.00)	74 (2.03)	93.17	
R	K-6 Words:	15 (1.53)	15 (1.29)	20 (0.55)	93.72	
1 /	K-7 Words:	31 (3.16)	34 (2.93)	38 (1.04)	94.76	
	K-8 Words:	16 (1.63)	16 (1.38)	23 (0.63)	95.39	
E	n-9 words :	17 (1.73)	17 (1.47)	18 (0.49)	95.88	95%
L	K-10 Words:	16 (1.63)	16 (1.38)	25 (0.68)	96.56	
	K-11 Words:	9 (0.92)	9 (0.78)	12 (0.33)	96.89	
NI	K-12 Words:	6 (0.61)	6 (0.52)	10 (0.27)	97.16	
N	K-13 Words:	8 (0.81)	9 (0.78)	10 (0.27)	97.43	
	K-14 Words:	7 (0.71)	8 (0.69)	9 (0.25)	97.68	
	K-15 Words:	3 (0.31)	4 (0.35)	4 (0.11)	97.79	
	K-16 Words:	3 (0.31)	3 (0.26)	8 (0.22)	98.01	
	IV-II Wolds .	2 (0.20)	<del>2 (0.11)</del>	2 (0.00)	30.00	98%
	K-18 Words:					
Н	K-19 Words:					
1 1	K-20 Words:	2 (0.20)	2 (0.17)	4 (0.11)	98.17	
	K-21 Words:	5 (0.51)	5 (0.43)	5 (0.14)	98.31	
	K-22 Words:					
	K-23 Words:	1 (0.10)	1 (0.09)	2 (0.05)	98.36	
	K-24 Words:	,		, ,		
	K-25 Words:	1 (0.10)	1 (0.09)	1 (0.03)	98.39	
	Off-List:	??	39 (3.36)	58 (1.59)	99.98	
	Total	982+?				
	/common or all and \	902+?	1159 (100)	3650 (100)	100.00	

1159 (100)

982+?

(uprounded)

3650 (100)

100.00

50

Eng (fams)

#### Side by side

Using 98% criterion (lemmas)

Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %
K-1 Words:	497 (53.44)	609 (56.39)	2243 (76.32)	76.32
K-2 Words:	177 (19.03)	211 (19.54)	307 (10.45)	86.77
K-3 Words:	121 (13.01)	134 (12.41)	176 (5.99)	92.76
K-4 Words:	52 (5.59)	55 (5.09)	76 (2.59)	95.35
K-5 Words:	28 (3.01)	30 (2.78)	37 (1.26)	96.61
K-6 Words:	18 (1.94)	18 (1.67)	18 (0.61)	97.22
K-7 Words:	10 (1.08)	11 (1.02)	18 (0.61)	97.83
K-8 Words:	11 (1.18)	11 (1.02)	14 (0.48)	98.31
no moreo.	0 (0.04)	0 (0.40)	0 (0.11)	30.40
K-10 Words:	1 (0.11)	1 (0.09)	1 (0.03)	98.51
K-11 Words:	2 (0.22)	2 (0.19)	2 (0.07)	98.58
K-12 Words:	2 (0.22)	2 (0.19)	3 (0.10)	98.68
K-13 Words:	1 (0.11)	1 (0.09)	2 (0.07)	98.75
K-14 Words:				
K-15 Words:				
K-16 Words:				
K-17 Words:	1 (0.11)	1 (0.09)	1 (0.03)	98.78
K-18 Words:	2 (0.22)	2 (0.19)	2 (0.07)	98.85
K-19 Words:	1 (0.11)	1 (0.09)	3 (0.10)	98.95
K-20 Words:				
K-21 Words:				
K-22 Words:				
K-23 Words:				
K-24 Words:	1 (0.11)	1 (0.09)	1 (0.03)	98.98
K-25 Words:				
Off-List:	??	27 (2.50)	30 (1.02)	100.00
Total (unrounded)	930+?	1080 (100)	2939 (100)	100.00

Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. toker
K-1 Words:	443 (45.11)	592 (51.08)	2803 (76.79)	76.
K-2 Words:	181 (18.43)	195 (16.82)	273 (7.48)	84.
K-3 Words:	97 (9.88)	103 (8.89)	168 (4.60)	88.
K-4 Words:	63 (6.42)	64 (5.52)	83 (2.27)	91.
K-5 Words:	56 (5.70)	58 (5.00)	74 (2.03)	93.
K-6 Words:	15 (1.53)	15 (1.29)	20 (0.55)	93.
K-7 Words:	31 (3.16)	34 (2.93)	38 (1.04)	94.
K-8 Words:	16 (1.63)	16 (1.38)	23 (0.63)	95.
K-9 Words:	17 (1.73)	17 (1.47)	18 (0.49)	95.
K-10 Words:	16 (1.63)	16 (1.38)	25 (0.68)	96.
K-11 Words:	9 (0.92)	9 (0.78)	12 (0.33)	96.
K-12 Words:	6 (0.61)	6 (0.52)	10 (0.27)	97.
K-13 Words:	8 (0.81)	9 (0.78)	10 (0.27)	97.
K-14 Words:	7 (0.71)	8 (0.69)	9 (0.25)	97.
K-15 Words:	3 (0.31)	4 (0.35)	4 (0.11)	97.
K-16 Words:	3 (0.31)	3 (0.26)	8 (0.22)	98.
IV II Words .	<del>८ (७.८७)</del>	۲ (۷.11)	2 (0.00)	<del>5</del> 0.
K-18 Words:				
K-19 Words:				
K-20 Words:	2 (0.20)	2 (0.17)	4 (0.11)	98.
K-21 Words:	5 (0.51)	5 (0.43)	5 (0.14)	98.
K-22 Words:				
K-23 Words:	1 (0.10)	1 (0.09)	2 (0.05)	98.
K-24 Words:				
K-25 Words:	1 (0.10)	1 (0.09)	1 (0.03)	98.
Off-List:	??	39 (3.36)	58 (1.59)	99.
Total (unrounded)	982+?	1159 (100)	3650 (100)	100.

#### So ~

#### With the new lists and definitions

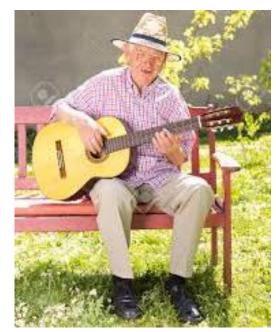
- (Note that 98% figure has never actually been established for French)
- While English and French both get to 90% at about 3,000 families/lemmas
  - English gets to 98% at 8,000 known words
  - French gets to 98% at 16,000 known words!

#### Fr (lemmas)

- A lot of words lie behind that circle!
- The difference between k8 to k16 is only 100 word types in this minicorpus
- ... these 100 words are drawn from a pool of 8,000 lemmas
  - So for generalizability...

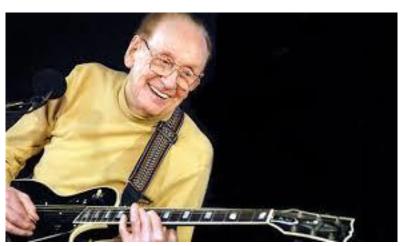
Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %
K-1 Words:	443 (45.11)	592 (51.08)	2803 (76.79)	76.79
K-2 Words:	181 (18.43)	195 (16.82)	273 (7.48)	84.27
K-3 Words:	97 (9.88)	103 (8.89)	168 (4.60)	88.87
K-4 Words:	63 (6.42)	64 (5.52)	83 (2.27)	91.14
K-5 Words:	56 (5.70)	58 (5.00)	74 (2.03)	93.17
K-6 Words:	15 (1.53)	15000	20 (0.55)	93.72
K-7 Words:	31 (3.16)	34 (2.93)	38 (1.04)	94.76
K-8 Words:	16 (1)	16 (1.38)	3 (0.63)	95.39
K-9 Words:	17 ( 3)	17 (1.47)	1 0.49)	95.88
K-10 Words:	16 .63)	16 (1.38)	25 68)	96.56
K-11 Words:	9 92)	9 (0.78)	12 (33)	96.89
K-12 Words:	6 .61)	6 (0.52)	10 (27)	97.16
K-13 Words:	8 81)	9 (0.78)	10 (27)	97.43
K-14 Words:	7 ( 71)	8 (0.69)	9 ( 25)	97.68
K-15 Words:	3 (0 1)	4 (0.35)	4 .11)	97.79
K-16 Words:	3 (0.2	3 (0.26)	(0.22)	98.01
N-17 Wolds.	2 (0.20)	Z (U.17)	2 (0.05)	98.06
K-18 Words:				
K-19 Words:				
K-20 Words:	2 (0.20)	2 (0.17)	4 (0.11)	98.17
K-21 Words:	5 (0.51)	5 (0.43)	5 (0.14)	98.31
K-22 Words:				
K-23 Words:	1 (0.10)	1 (0.09)	2 (0.05)	98.36
K-24 Words:				
K-25 Words:	1 (0.10)	1 (0.09)	1 (0.03)	98.39
Off-List:	??	39 (3.36)	58 (1.59)	99.98
Total (unrounded)	982+?	1159 (100)	3650 (100)	100.00





Vite à demarrer ~ lente à finir

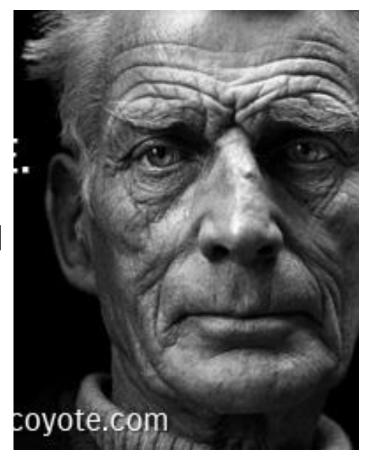




#### Test 2

#### Translation of extended literary work

- Samuel Beckett's idea French as "an impoverished lexicon"?
  - Actually he never said this
- But he did write in French, and "use stark language to convey a stark world"
  - How stark is Beckett's French?

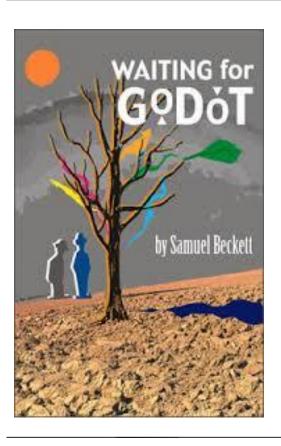


#### WEB VP OUTPUT FOR FILE: Waiting for Godot

User Re-cats + Mid-Sentence Capped Offlist Words ⇒ 1k: (221 types): AP Abel Acacacacademy Act Adieu Agony Ah Albert All An And Another Answer Anthropopopom Cain Calm Can Careful Christ Clapham Closer Coat Come Comfort Connemara Cunard Cunnard Dance Dead Decidedly Did Didi Do Does Don Done ESTRAGON Eiffel E Forward Friday Fulham Funny Further Gentlemen Get Give Go God Godin Godot Gogo Good Gospels Gozzo Hanky Hard Hat Have Having He Help Here Highness More Must My Nature Net Never Nice No Nor Not Nothing Now ON Of Oh On One Or Ow PALLED POZZO Peckham Perhaps Peterman Peterson Possy Pozzo Profession Spring Stand Steinweg Stool Stop Sunday Surely TELL Tell Testew Thank That The There They Things Think This Thursday Till Touch Tower Try Turn Twas Two Unless Up L Wouldn Yes You Your end\_of\_list

#### Cognates ⇒ 1k: None

Text Pre-Processing Notes: In the output text, punctuation is eliminated; all figures (1, 20, etc) are replaced by the word number; contractions are replaced by constituent words may sum to less than total (depending on user treatment of proper nouns as well as program decision to class numbers as 1k although not contained in 1k list); single



Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %
K-1 Words:	684 (44.56)		18209 (89.66)	89.66
K-2 Words:	299 (19.48)	357 (17.83)	947 (4.66)	94.32
K-3 Words:	126 (8.21)	145 (7.24)	296 (1.46)	95.78
K-4 Words:	109 (7.10)	122 (6.09)	226 (1.11)	96.89
K-5 Words:	83 (5.41)	94 (4.70)	143 (0.70)	97.59
K-6 Words:	48 (3.13)	51 (2.55)	111 (0.55)	98.14
N-7 WOIGS .	<del>30 (2.33)</del>	<del>55 (1.55)</del>	00 (V.02)	50:40
K-8 Words:	27 (1.76)	28 (1.40)	39 (0.19)	98.65
K-9 Words:	26 (1.69)	27 (1.35)	39 (0.19)	98.84
K-10 Words:	20 (1.30)	20 (1.00)	30 (0.15)	98.99
K-11 Words:	23 (1.50)	24 (1.20)	32 (0.16)	99.15
K-12 Words:	13 (0.85)	14 (0.70)	15 (0.07)	99.22
K-13 Words:	12 (0.78)	12 (0.60)	14 (0.07)	99.29
K-14 Words:	7 (0.46)	7 (0.35)	9 (0.04)	99.33
K-15 Words:	4 (0.26)	4 (0.20)	5 (0.02)	99.35
K-16 Words:	4 (0.26)	5 (0.25)	6 (0.03)	99.38
K-17 Words:	5 (0.33)	5 (0.25)	6 (0.03)	99.41
K-18 Words:	1 (0.07)	1 (0.05)	1 (0.00)	
K-19 Words:	1 (0.07)	1 (0.05)	1 (0.00)	
K-20 Words:	3 (0.20)	3 (0.15)	3 (0.01)	99.42
K-21 Words:	1 (0.07)	1 (0.05)	1 (0.00)	
K-22 Words:	1 (0.07)	1 (0.05)	1 (0.00)	

#### WEB VP OUTPUT FOR FILE: En attendant Godot - Becket

User Re-cats + Mid-Sentence Capped Offlist Words ⇒ 1k: (285 types): ACTE ASSEZ Achève Adieu Affreux Ah Aide Albert Allez Allons Alors Anglais Anthropopopomét Aie Bagages Belcher Berne Bien Blonde Bon Bonnelly Bozzo Bresse Ca Calme Catulle Cain Ce Ceci Cela Cent Certainement Ces Chacune Charmante Combien Comme Des Deux Didi Dieu Dis Dites Do Dommage Donne Donnez Du Durance Déj Développez EME ER ESTRAGON Ecoute Eh Elle Elles Eloignez En Encore Enfin Engueule Er Godin Godot Gogo Gozzo Heu Hier Hélas Jamais Je Jouer Jusqu Jésus LE La Laisse Le Les Li Lés Lucky Lui Lâchemoi Lève MR Ma Mainteant Mainteant Mais Mal Malg Non Nos Notre Nous Oh On Ou Oui PAS POU POZZO PREM Pah Panier Par Parce Pardon Parfaitement Partons Pas Passons Pauvre Pendons Pense Petermann Peuchi Puis Qu Quand Que Quel Quelle Question Qui Quoi RACONTE RE Raconte Reconnais Regarde Regardez Relève Remarquez Reprenons Reste Retour Rien Roussillon Sa Tes Testu Tiens Tire Toi Toujours Tout Toute Toutes Traiter Trois Tu Un Une VAN VLAD Vas Vaucluse Vendredi Venez Veux Viens Vite Vladimir Voil Voul Vouloir Vous Voyo

#### Cognates ⇒ 1k: None

Text Pre-Processing Notes: In the output text, punctuation is eliminated; all figures (1, 20, etc) are replaced by the word number, contractions are replaced by constituen words may sum to less than total (depending on user treatment of proper nouns as well as program decision to class numbers as 1k although not contained in 1k list); sing



Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %
K-1 Words:	576 (50.88)	894 (56.87)	11917 (90.29)	90.29
K-2 Words:	173 (15.28)	208 (13.23)	370 (2.80)	93.09
K-3 Words:	100 (8.83)	123 (7.82)	179 (1.36)	94.45
K-4 Words:	68 (6.01)	72 (4.58)	111 (0.84)	95.29
K-5 Words:	37 (3.27)	37 (2.35)	46 (0.35)	95.64
K-6 Words:	27 (2.39)	29 (1.84)	34 (0.26)	95.90
K-7 Words:	27 (2.39)	28 (1.78)	36 (0.27)	96.17
K-8 Words:	23 (2.03)	25 (1.59)	34 (0.26)	96.43
K-9 Words:	15 (1.33)	16 (1.02)	20 (0.15)	96.58
K-10 Words:	17 (1.50)	18 (1.15)	23 (0.17)	96.75
K-11 Words:	13 (1.15)	14 (0.89)	23 (0.17)	96.92
K-12 Words:	7 (0.62)	8 (0.51)	13 (0.10)	97.02
K-13 Words:	10 (0.88)	10 (0.64)	16 (0.12)	97.14
K-14 Words:	6 (0.53)	6 (0.38)	6 (0.05)	97.19
K-15 Words:	7 (0.62)	7 (0.45)	10 (0.08)	97.27
K-16 Words:	5 (0.44)	5 (0.32)	7 (0.05)	97.32
K-17 Words:	4 (0.35)	4 (0.25)	4 (0.03)	97.35
K-18 Words:	5 (0.44)	5 (0.32)	5 (0.04)	97.39
K-19 Words:				
K-20 Words:	3 (0.27)	3 (0.19)	3 (0.02)	97.41
K-21 Words:	3 (0.27)	3 (0.19)	4 (0.03)	97.44
K-22 Words:	2 (0.18)	2 (0.13)	3 (0.02)	97.46
K-23 Words:				
K-24 Words:	1 (0.09)	1 (0.06)	1 (0.01)	97.47
K-25 Words:	3 (0.27)	3 (0.19)	4 (0.03)	97.50

#### "Waiting for Godot"

#### «En attendant Godot»

Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %
K-1 Words:	684 (44.56)	1010 (50.45)	18209 (89.66)	89.66
K-2 Words:	299 (19.48)	357 (17.83)	947 (4.66)	94.32
K-3 Words:	126 (8.21)	145 (7.24)	296 (1.46)	95.78
K-4 Words:	109 (7.10)	122 (6.09)	226 (1.11)	96.89
K-5 Words:	83 (5.41)	94 (4.70)	143 (0.70)	97.59
K-6 Words:	48 (3.13)	51 (2.55)	111 (0.55)	98.14
N-/ WOIUS:	JO (Z.JO)	ა <del>ა (1.აა<i>)</i></del>	00 (U.JZ)	<del>9</del> 0.46
K-8 Words:	27 (1.76)	28 (1.40)	39 (0.19)	98.65
K-9 Words:	26 (1.69)	27 (1.35)	39 (0.19)	98.84
K-10 Words:	20 (1.30)	20 (1.00)	30 (0.15)	98.99
K-11 Words:	23 (1.50)	24 (1.20)	32 (0.16)	99.15
K-12 Words:	13 (0.85)	14 (0.70)	15 (0.07)	99.22
K-13 Words:	12 (0.78)	12 (0.60)	14 (0.07)	99.29
K-14 Words:	7 (0.46)	7 (0.35)	9 (0.04)	99.33
K-15 Words:	4 (0.26)	4 (0.20)	5 (0.02)	99.35
K-16 Words:	4 (0.26)	5 (0.25)	6 (0.03)	99.38
K-17 Words:	5 (0.33)	5 (0.25)	6 (0.03)	99.41
K-18 Words:	1 (0.07)	1 (0.05)	1 (0.00)	
K-19 Words:	1 (0.07)	1 (0.05)	1 (0.00)	
K-20 Words:	3 (0.20)	3 (0.15)	3 (0.01)	99.42
K-21 Words:	1 (0.07)	1 (0.05)	1 (0.00)	
K-22 Words:	1 (0.07)	1 (0.05)	1 (0.00)	

Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %
K-1 Words:	576 (50.88)	894 (56.87)	11917 (90.29)	90.29
K-2 Words:	173 (15.28)	208 (13.23)	370 (2.80)	93.09
K-3 Words:	100 (8.83)	123 (7.82)	179 (1.36)	94.45
K-4 Words:	68 (6.01)	72 (4.58)	111 (0.84)	95.29
K-5 Words:	37 (3.27)	37 (2.35)	46 (0.35)	95.64
K-6 Words:	27 (2.39)	29 (1.84)	34 (0.26)	95.90
K-7 Words:	27 (2.39)	28 (1.78)	36 (0.27)	96.17
K-8 Words:	23 (2.03)	25 (1.59)	34 (0.26)	96.43
K-9 Words:	15 (1.33)	16 (1.02)	20 (0.15)	96.58
K-10 Words:	17 (1.50)	18 (1.15)	23 (0.17)	96.75
K-11 Words:	13 (1.15)	14 (0.89)	23 (0.17)	96.92
K-12 Words:	7 (0.62)	8 (0.51)	13 (0.10)	97.02
K-13 Words:	10 (0.88)	10 (0.64)	16 (0.12)	97.14
K-14 Words:	6 (0.53)	6 (0.38)	6 (0.05)	97.19
K-15 Words:	7 (0.62)	7 (0.45)	10 (0.08)	97.27
K-16 Words:	5 (0.44)	5 (0.32)	7 (0.05)	97.32
K-17 Words:	4 (0.35)	4 (0.25)	4 (0.03)	97.35
K-18 Words:	5 (0.44)	5 (0.32)	5 (0.04)	97.39
K-19 Words:				
K-20 Words:	3 (0.27)	3 (0.19)	3 (0.02)	97.41
K-21 Words:	3 (0.27)	3 (0.19)	4 (0.03)	97.44
K-22 Words:	2 (0.18)	2 (0.13)	3 (0.02)	97.46
K-23 Words:				
K-24 Words:	1 (0.09)	1 (0.06)	1 (0.01)	97.47
K-25 Words:	3 (0.27)	3 (0.19)	4 (0.03)	97.50
C			<u>(</u> )	

#### Test 3

### Maybe Tests 1+2 were something about translated texts?

Ok, then let's compare

4 random original editorial texts

From each of ~

- (1) <u>Le Devoir</u> Montreal
- (2) <u>Le Monde</u> Paris
- (3) The Globe & Mail Toronto
- (4) The NY Times New York

Chosen 14-15 August, 2016

	MONT	REAL			PARIS			Т	ORONT	О		I	IEW YO	RK		
	LE DEV	OIR			LE MONI	DE		G	LOBE 8			Т	IMES			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1k				_				_				_				
2k																
3k																
4k																
5k																
6k																
7k																
8k																
9k																
L <b>Ok</b>																
1 <b>1</b> k																
l2k																
l3k																
l4k																
L5k	_															
l6k	_															
17k	_															
l8k																
l9k																
20k	_															
21k	_															
22k																
23k																
24k																

	MONTR	EAL			PARIS				TORON	OTV			<b>NEW Y</b>	ORK		
	LE DEVO	DIR			LE MO	NDE			GLOBE	& MAI	L		TIMES			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1k	80.76	76.4	79.77	82.5	79.39	81.5	77.9	81	72.7	76.62	77.84	76.49	77.24	80.16	82.24	77.75
2k	9.38	8.53	8.46	8.29	7.43	4.31	8.71	6.97	8.68	14.59	5.99	6.52	9.69	7.74	7.14	8.64
3k	1.43	2.79	2.49	3.69	3.72	3.67	1.56	3.66	5.21	5.89	9.58	9.35	5.87	5.95	5.98	7.91
4k	1.43	2.79	2.32	1.23	1.18	2.55	2.01	2.44	2.98	0.9	1.8	1.7	2.35	0.99	2.9	0.88
5k	0.64	0.62	2.16	1.08	1.52	1.91	0.45	0.87	1.24	0.1	0.6	0.28	1.76	0.99	0.19	1.61
6k	0.48	0.47	0.33	0.15	1.01	0.32	0.89		1.24	0.1	0.6	0.57	0.88		0.19	0.15
7k	0.79	0.62	0.17	0.31	0.68	1.12	0.22		0.5	0.0	0.0	1.42	0.29		0.19	0.44
8k	0.48		0.17	0.15	0.34	0.32	0.89	1.22	0			0.28	0.15	0.2	0.50	9.15
9k	0.48	0.62	0.33	0.31	0.51		0.45	0.52	1.49				0.15			0.1.
10k	0.32	0.47		0.61	0.34		0.22	0.7	0.5			0.28	0.15		0.19	
11k	0.16	0.16	0.17		0.34	0.64		0.7	0.25	0.2		0.28		0.4		
12k	0.16		0.17	0.31	0.51				0.99				0.15		0.19	
13k	0.16		0.5	0.46	0.34				0.25							
14k	0.16	0.47	0.17		0.17	0.16	0.22		25		0.2					
15k		0.47	0.17								0.3					
16k	0.32	0.16	0.5	0.15		0.16	0.45									
17k		0.16	0.17		0.34	0.16										
18k	0.16		0.5			0.32		0.17								
19k																
20k		0.16		0.15												
21k		0.16						0.17								
22k					0.17											
23k				0.15												
24k																
25k		0.16				0.16										
OFF	1.43	2.33	1	0.31	1.18	1.59	0.67	1.22	1.4	74	1.8	1.98	1.03	1.19	0.10	0.29

#### Conclusion

#### (1) Comparing languages:

- French makes *slightly* more use of its common words than English does
- But it makes *far* more use of its mid- and lowfrequency lexical resources (3k to 20k+)
- So, Yes, languages are distinct in the way they deploy their lexical resources
  - So Cobb & Horst (2004) was right as far as it went, but incomplete
    - Old technology, fledgling paradigm,...

#### Conclusion

#### (2) Comparing learning tasks:

Learning enough vocab for 90% coverage looks *slightly* easier in French than English

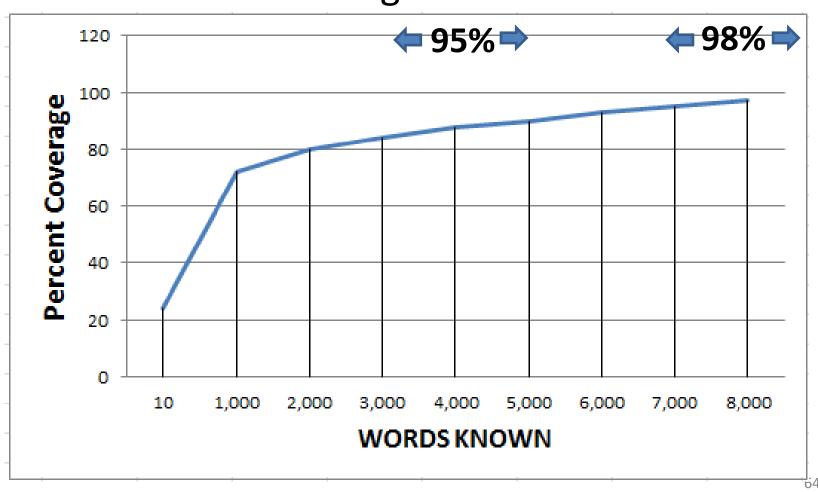
But learning enough words for 98% or even 95% coverage looks *far* more difficult

95% is best guess at basic lexical competence for reading 98% for full competence

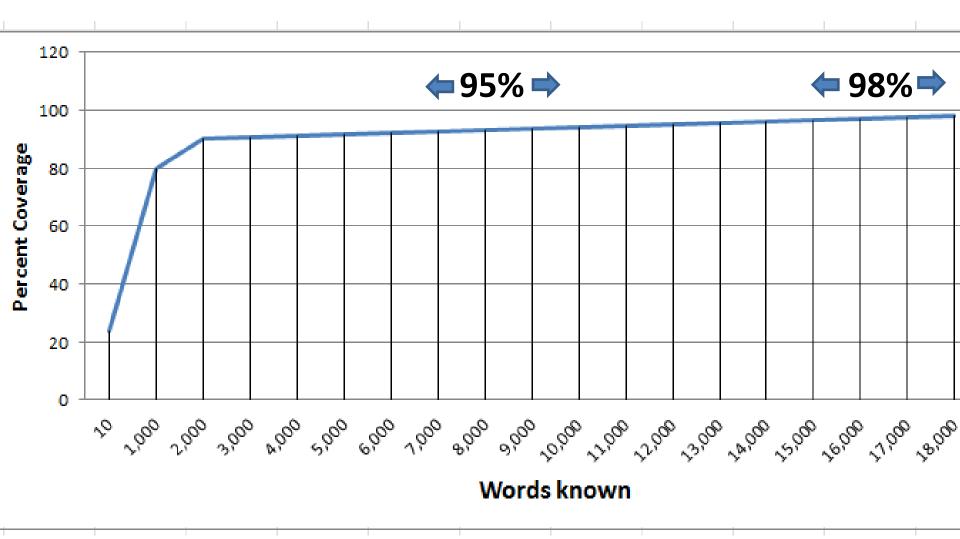
How many FL2-S's ever get to basic?

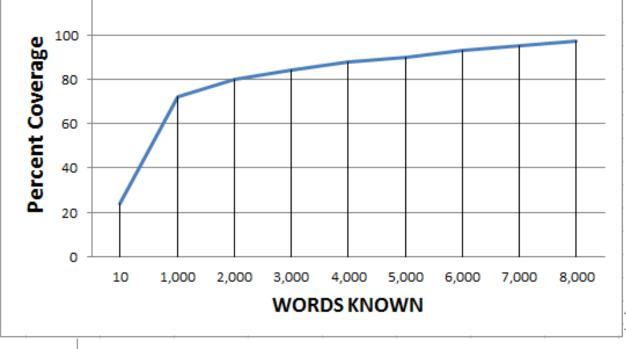
### (3) The **shape**s of the two lexicons seem to be like this:





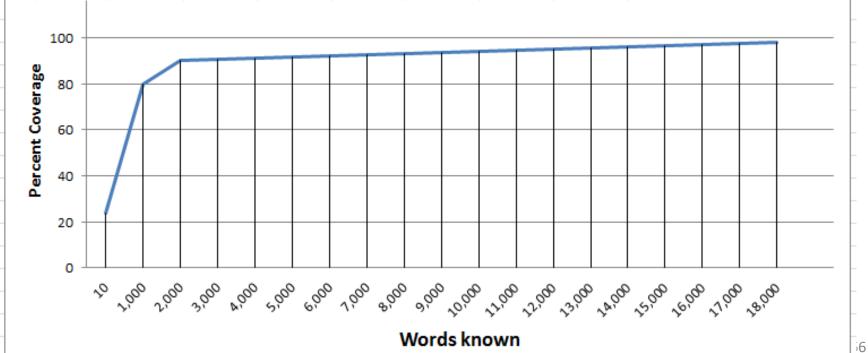
#### French



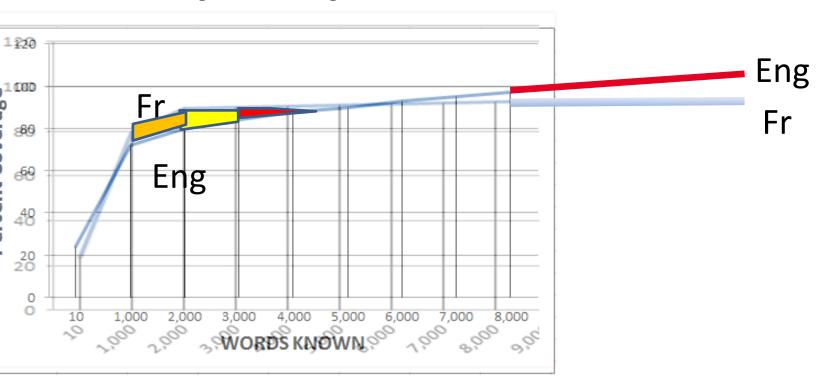


#### **TOGETHER:**

← Eng Fr ↓



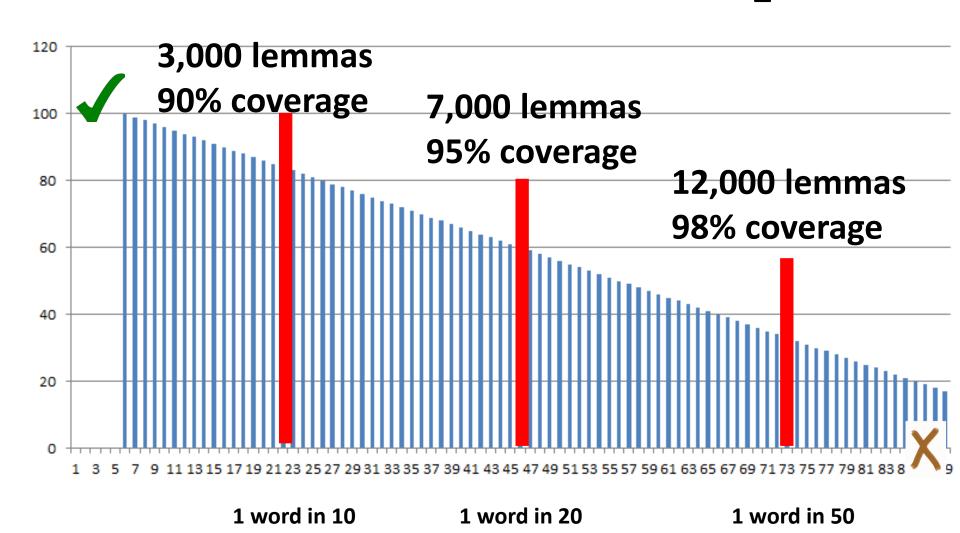
#### Superimposed



But notice that the French early advantage (higher coverage) persists to about 4k

(So 3k words in French gives better coverage than in English)

### So our best guess (v.2016) at *basic lexical* competence for reading in FL<sub>2</sub>?



unknown

unknown

68

unknown

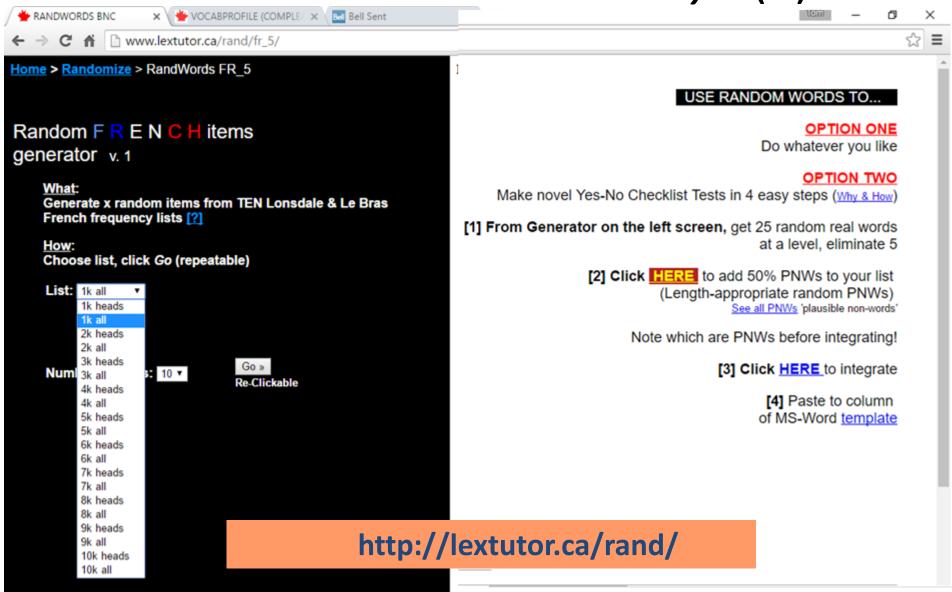
### Where to start? How many words do our students know already?

#### TTV - Test de la taille du vocabulaire

Étude de maîtrise de Roselene Batista, Université Concordia, février 2014

La deuxième tranche 1. concours 2. division 3. joie 4. phase 5. stade 6. véhicule	de mille mots grand plaisir un moyen de transport séparation en deux par	1. brûler 2. distinguer 3. examiner 4. mentionner ties 5. rêver 6. supprimer	imaginer remarquer détruire par le feu
<ol> <li>autorisation</li> <li>bonjour</li> <li>confusion</li> <li>faim</li> <li>rupture</li> <li>tribunal</li> </ol>	erreur le besoin de manger la maison de la justice	1. fondamental 2. global 3. moderne 4. prudent 5. récent 6. traditionnel	complet qui est la base qui ne prend pas de risques
<ol> <li>adapter</li> <li>crier</li> <li>distribuer</li> <li>formuler</li> <li>procéder</li> <li>traverser</li> </ol>	partagerparler très fortaller d'un côté à l'autre	1. attaque 2. contribution 3. dommage 4. église 5. incident 6. mécanisme	institution action violente ensemble de pièces
1. bras 2. circuit 3. détermination 4. match 5. réception 6. théorie	tour	1. actif 2. inutile 3. fier  http://lextutor.ca	occupé /tests/

### Where to start? How many words do our students know already? (2)



#### Afterthought

- Which language is out of step here English or French?
  - Few languages have a separate academic lexicon
- Hazenburg & Hulstijn (c. 2005) calculated basic lexical competence in Dutch at 10,000 lemmas
- Maybe the shape of English reflects the lingua franca role the language has come to play
  - Such that its writers use \*circumlocution\* for complex ideas, rather than seeking « le mot juste »?

#### **ENGLISH AS A LINGUA FRANCA? BUT SURELY NOT IN 19th CENT.**

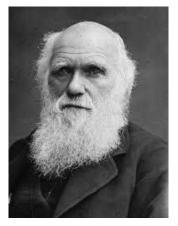
WEB VP OUTPUT FOR FILE: Darwin\_Origin\_ch4 (93,535 chars)

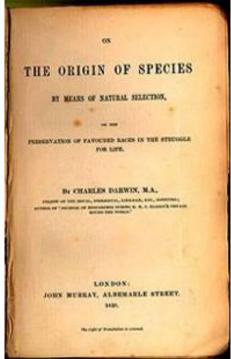
User Re-Cats + Mid-Sentence Capped Offlist Words => 1k: (types):

Cognates => 1k: None

**Text Pre-Processing Notes:** In the output text, punctuation is eliminated; all figures (1, 20, etc) are replaced by calculated using these modified constituents; and in the 1k sub-analysis content + function words may sum to I numbers as 1k although not contained in 1k list); single letters are eliminated as words except for 'a' and 'l.'

Freq. Level	Families (%)	Types (%)	Tokens ( <u>%</u> )	Cumul. token %
K-1 Words:	479 (38.38)	743 (41.44)	11961 <u>(76.00)</u>	76.00
K-2 Words:	264 (21.15)	385 (21.47)	1747 <u>(11.10)</u>	87.10
K-3 Words:	196 (15.71)	261 (14.56)	921 <u>(5.85)</u>	92.95
K-4 Words:	82 (6.57)	95 (5.30)	241 <u>(1.53)</u>	94.48
K-5 Words:	53 (4.25)	71 (3.96)	203 (1.29)	95.77
K-6 Words:	49 (3.93)	56 (3.12)	85 <u>(0.54)</u>	96.31
K-7 Words:	31 (2.48)	36 (2.01)	114 <u>(0.72)</u>	97.03
K-8 Words:	27 (2.16)	32 (1.78)	83 <u>(0.53)</u>	97.56
K-9 Words:	16 (1.28)	17 (0.95)	47 <u>(0.30)</u>	97.86
K-10 Words:	12 (0.96)	12 (0.67)	55 <u>(0.35)</u>	98.21
K-11 Words:	6 (0.48)	6 (0.33)	7 <u>(0.04)</u>	98.25



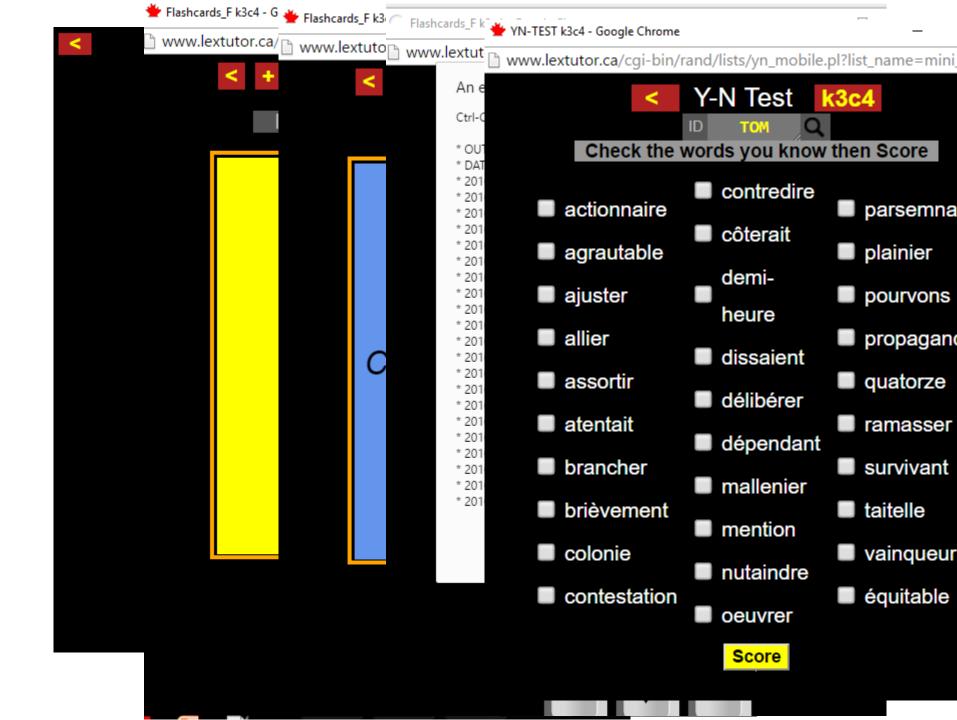


#### Further work

- As ever in corpus work, this needs empirical validation
  - Do FL2 readers with 5k=95% lexicons actually experience a comprehension deficit?
    - Or just have to look up a few more words?
  - Is it worth teaching vocab up to 98% general coverage?
- As ever in <u>corpus work</u>, newer better bigger lists are probably just around the next corner
  - Any picture is strictly provisional (yet we must do something Monday morning...)

#### Perspective needed:

- My presentation deals with <u>advanced</u> learner issues, while 90% of vocab work is getting over the 5k hump
  - Establishing a basic form-meaning link ASAP so the true learning can begin (from reading, etc.)



## All references & software available @

www.lextutor.ca

facebook.com/groups/lextutor twitter.com/lextutor

Merci!

cobb.tom@sympatico.ca

#### A method note

- But wait!
- We are comparing <u>lemmas</u> v. <u>families</u>

Cat cats v. cat cats catty

- 1000 families give more coverage than 1000 lemmas
  - -How much more?
    - Some recent work by Charles Browne suggests an answer

#### A NEW GENERAL SERVICE LIST (1.01)

the most important words for second language learners of English

CONTACT: BROWNE@LTR.MEIJIGAKUIN.AC.JP

http://www.newgeneralservicelist.org/

The chart below gives an indication of the improvement in coverage that the NGSL 1.0 version has over the original when considering each of the words on the list with its associated inflected forms (lemmas):

Vocabulary List	Number of "Word	Number of	Coverage in CEC
	Families"		Corpus
GSL 1964		3623	84.24%
NGSL	2368	2818	90.34%

2368 / 2818 \*100 = 84%

1000 lems have ~16% less coverage than 1000 fams in Eng At High-Frequency NGSL zone (1k+2k) (probably less at lower frequency zones) 77

# But even assuming (1) a 16% difference that (2) was maintained at lower-frequency zones

- About every six lemma lists (6 x 16% = 96%)
  we would <u>lose a k-level</u> to maintain lemmafamily equivalence
  - So in 18 levels we would lose 3

- The picture would not change greatly
  - Even in exaggerated worst-case scenario

Eng

**K8 E-fams = <del>k16</del> F-lems for 98%?** 

 $\rightarrow$  K8 E-fams = k13 F-lems for 98%

(fams)

#### Pattern is the same

(lemmas)

Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token %
K-1 Words :	Families (%) 497 (53.44)	Types (%) 609 (56.39)	2243 (76.32)	76.32
K-2 Words :	177 (19.03)	211 (19.54)	307 (10.45)	86.77
K-3 Words:	121 (13.01)	134 (12.41)	176 (5.99)	92.76
K-4 Words :	52 (5.59)	55 (5.09)	76 (2.59)	95.35
K-5 Words :	28 (3.01)	30 (2.78)	37 (1.26)	96.61
K-6 Words:	18 (1.94)	18 (1.67)	18 (0.61)	97.22
K-7 Words:	10 (1.08)	11 (1.02)	18 (0.61)	97.83
K-8 Words:	11 (1.18)	11 (1.02)	14 (0.48)	98.31
	U (0.04)	0 (0.40)	0 (0.11)	50.40
K-10 Words:	1 (0.11)	1 (0.09)	1 (0.03)	98.51
K-11 Words:	2 (0.22)	2 (0.19)	2 (0.07)	98.58
K-12 Words:	2 (0.22)	2 (0.19)	3 (0.10)	98.68
K-13 Words:	1 (0.11)	1 (0.09)	2 (0.07)	98.75
K-14 Words:		. ,		
K-15 Words:				
K-16 Words:				
K-17 Words:	1 (0.11)	1 (0.09)	1 (0.03)	98.78
K-18 Words:	2 (0.22)	2 (0.19)	2 (0.07)	98.85
K-19 Words:	1 (0.11)	1 (0.09)	3 (0.10)	98.95
K-20 Words:				
K-21 Words:				
K-22 Words:				
K-23 Words:				
K-24 Words:	1 (0.11)	1 (0.09)	1 (0.03)	98.98
K-25 Words:				
Off-List:	??	27 (2.50)	30 (1.02)	100.00
Total (unrounded)	930+?	1080 (100)	2939 (100)	100.00

Freq. Level	Families (%)	Types (%)	Tokens (%)	Cumul. token
K-1 Words:	443 (45.11)	592 (51.08)	2803 (76.79)	76.7
K-2 Words:	181 (18.43)	195 (16.82)	273 (7.48)	84.2
K-3 Words:	97 (9.88)	103 (8.89)	168 (4.60)	88.8
K-4 Words:	63 (6.42)	64 (5.52)	83 (2.27)	91.1
K-5 Words:	56 (5.70)	58 (5.00)	74 (2.03)	93.1
K-6 Words:	15 (1.53)	15 (1.29)	20 (0.55)	93.7
K-7 Words:	31 (3.16)	34 (2.93)	38 (1.04)	94.7
K-8 Words:	16 (1.63)	16 (1.38)	23 (0.63)	95.3
K-9 Words:	17 (1.73)	17 (1.47)	18 (0.49)	95.8
K-10 Words:	16 (1.63)	16 (1.38)	25 (0.68)	96.5
K-11 Words:	9 (0.92)	9 (0.78)	12 (0.33)	96.8
K-12 Words:	6 (0.61)	6 (0.52)	10 (0.27)	97.1
K-13 Words:	8 (0.81)	9 (0.78)	10 (0.27)	97.4
K-14 Words:	/ (0./1)	8 (0.69)	9 (0.25)	97.6
K-15 Words:	3 (0.31)	4 (0.35)	4 (0.11)	97.7
K-16 Words:	3 (0.31)	3 (0.26)	8 (0.22)	98.0
IV-II-Mordo .	۷ (۵.۲۵)	2 (0.11)	۷ (۵.۵۵)	30.0
K-18 Words:				
K-19 Words:				
K-20 Words:	2 (0.20)	2 (0.17)	4 (0.11)	98.1
K-21 Words:	5 (0.51)	5 (0.43)	5 (0.14)	98.3
K-22 Words:				
K-23 Words:	1 (0.10)	1 (0.09)	2 (0.05)	98.3
K-24 Words:				
K-25 Words:	1 (0.10)	1 (0.09)	1 (0.03)	98.3
Off-List:	??	39 (3.36)	58 (1.59)	99.9
Total (unrounded)	982+?	1159 (100)	3650 (100)	100.0