KU LEUVEN

Core vocabulary, borrowability, and entrenchment

A usage-based onomasiological approach

Eline Zenner, Dirk Speelman, Dirk Geeraerts

FWO Flanders/University of Leuven
RU Quantitative Lexicology and Variational Linguistics

QLVL

FWO VLAANDEREN

Universalities of Borrowing

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1. Nouns are more borrowable than verbs (POS-clines)

2. Core vocabulary is highly resistant to borrowing

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Analytic proposition	Synthetic proposition
resistance to borrowing is the defining feature of coreness	coreness is independent from resistance to borrowing
« bachelors are unmarried »	« bachelors are unhappy »

Universalities of Borrowing

1. Nouns are more borrowable than verbs (POS-clines)

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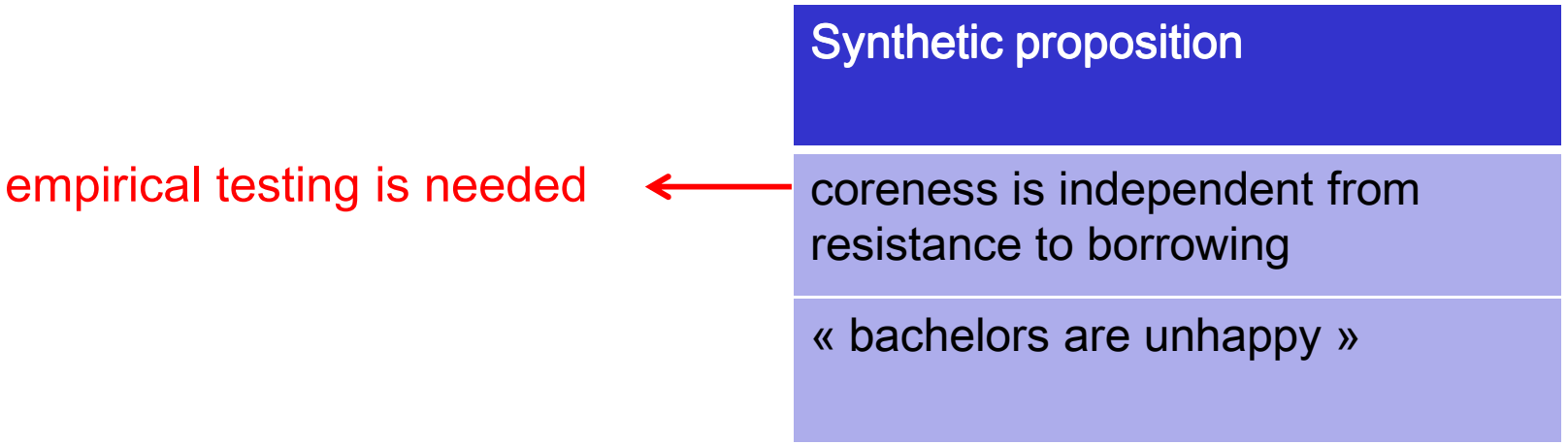

Universalities of Borrowing

1. Nouns are more borrowable than verbs (POS-clines)

2. Core vocabulary is highly resistant to borrowing

A usage-based approach ←

Synthetic proposition
coreness is independent from resistance to borrowing
« bachelors are unhappy »

Core vocabulary is resistant to borrowing

Empirical testing:

- Necessary ingredients
- Case study

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2. define resistance to borrowing
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Core Vocabulary

mainly applied

Glottochronology: rates of change in vocabulary

wrong estimations of time depths

Lexicostatistics: genealogical relatedness between languages

- false positives
- false negatives

Applied Linguistics

- dictionaries: lemma writing
- L2: vocabulary lists

Main Issues

- → theoretical unclarity: what does "coreness" mean?
- → dichotomous approach: *lists* of core items
- → terminological inconsistency

Main Issues

→ theoretical unclarity: what does "coreness" mean?

= resistance to borrowing (analytic proposition)

= stability / resistance to change in general

= universality

= semantically general

= highly frequent

= ...

→ dichotomous approach: *lists* of core items

→ terminological inconsistency

Main Issues

- → theoretical unclarity: what does "coreness" mean?
- → dichotomous approach: *lists* of core items
  - Swadesh 100
  - how long should the list be?
  - we cannot expect "each item of any finite list to be basic in every respect" (Hymes 1960: 11)
  - better to have a continuous measure (that can be assigned to *every* meaning/concept)
- → terminological inconsistency

Main Issues

- → theoretical unclarity: what does "coreness" mean?
- → dichotomous approach: *lists* of core items
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  core vocab – core meaning – core concepts

Proposed Solution

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Link coreness to entrenchment

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- captures the idea behind coreness quite well

  "the degree to which the formation and activation of a cognitive unit is routinized and automated" (Schmid 2010)

  "well-entrenched structures can inhibit or even block the adoption of novel structures" (ibid.)

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  it is not "real-world entities themselves that get entrenched but possible concepts of entities" (ibid.)

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  there is a "continuous scale of entrenchment in cognitive organization" (Langacker 1987: 59)

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  → frequency of usage

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What does resistance to borrowing mean?

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→ resistance to replacement ~~native~~ borrowed

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→	resistance to replacement	~~native~~	borrowed
→	resistance to co-existence	native	borrowed

What does resistance to borrowing mean?

→	resistance to replacement	~~native~~	borrowed
→	resistance to co-existence	native	borrowed
→	resistance to successful coexistence	native	borrowed

"the words of foreign origin might simply appear as minor alternatives (...), but never become the first choice of most native speakers" (Fischer 1961: 263)

What does resistance to borrowing mean?

→ resistance to replacement
→ resistance to co-existence

types

→ resistance to successful coexistence

tokens

Main Issues

→ resistance to successful coexistence underdeveloped

→ methodological: how to measure coexistence?

Proposed Solution

profile-based method of onomasiological variation

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concept → keeper

synonymous lexicalisations → keeper, goalie, doelman, doelwachter

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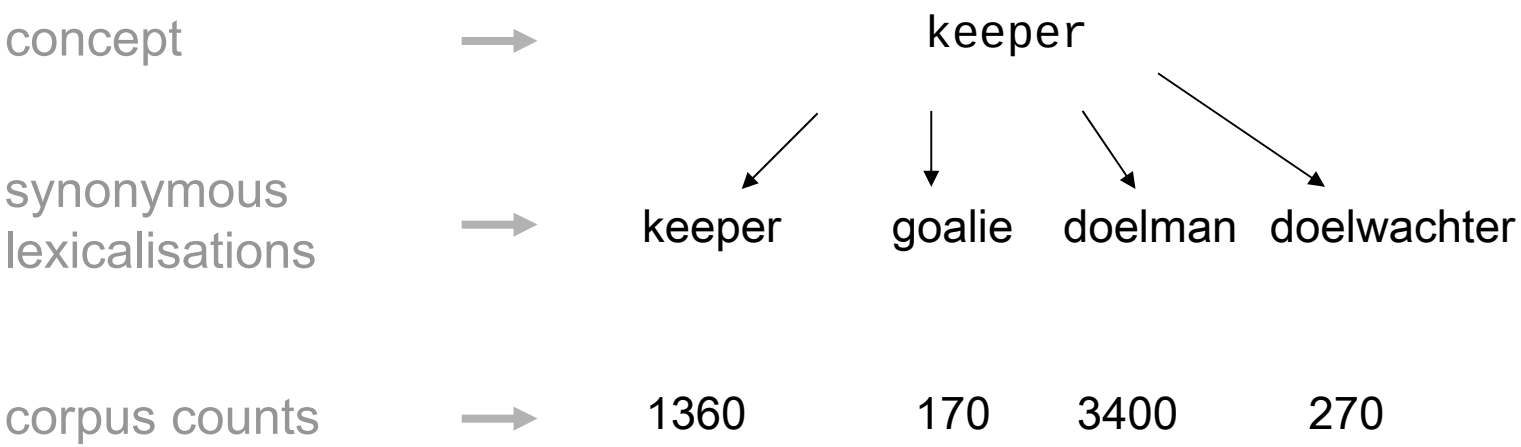
profile-based method of onomasiological variation



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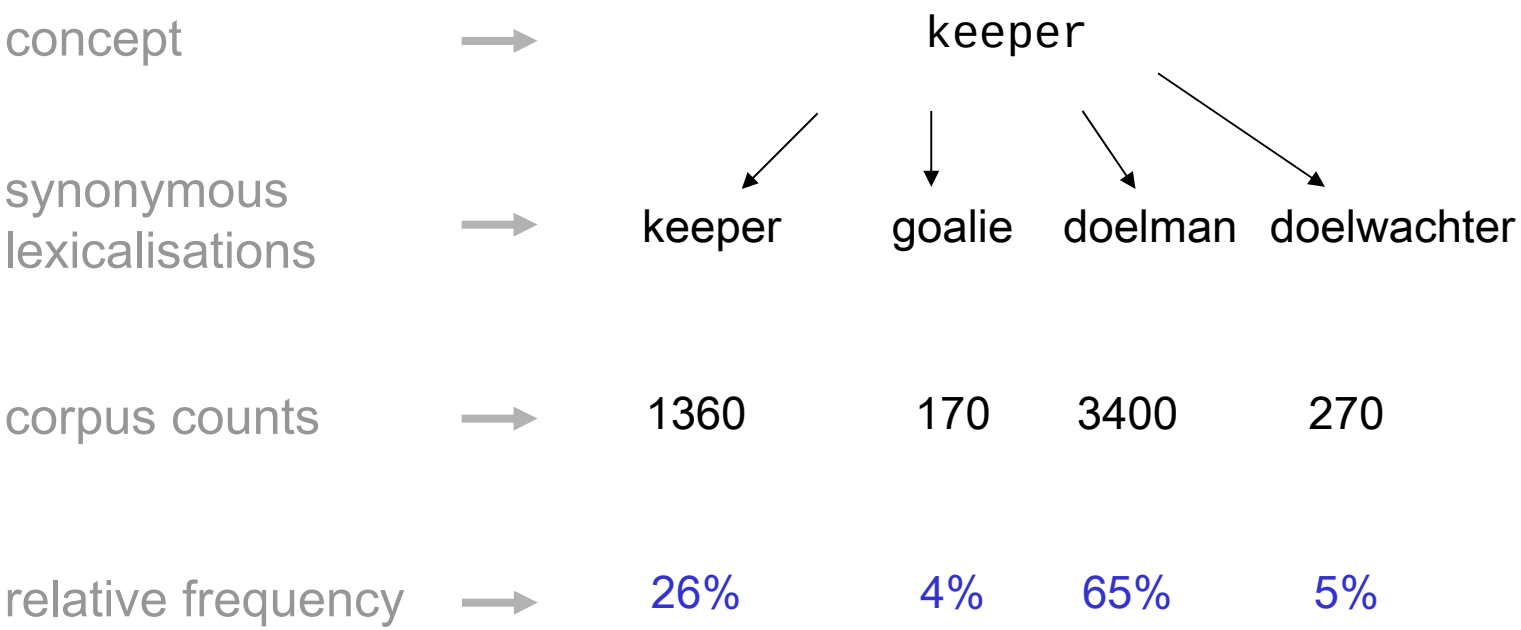

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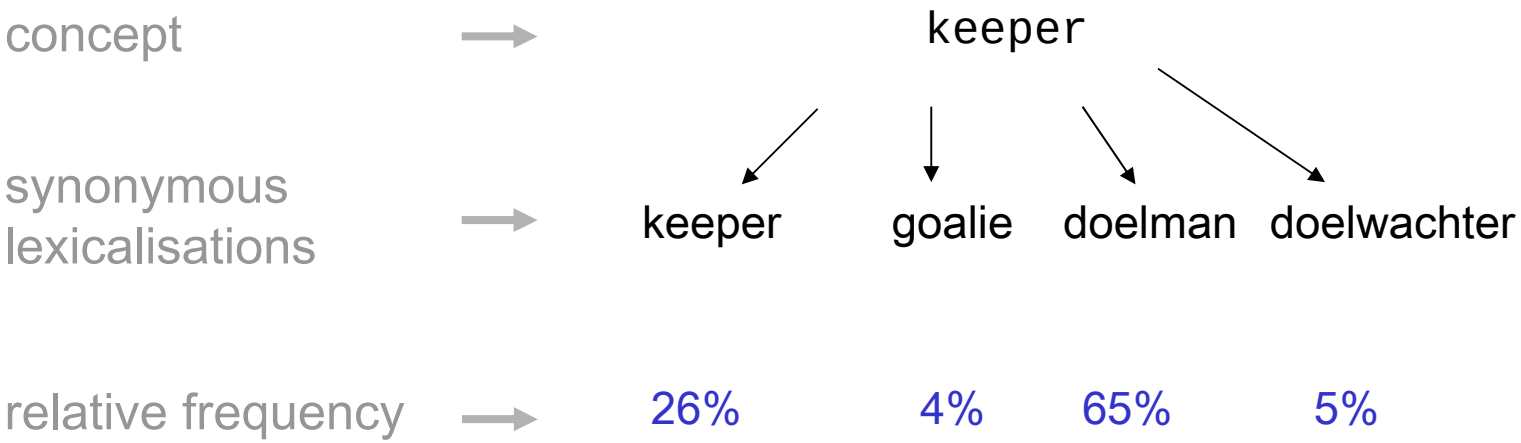

per concept	per loanword
resistance to borrowing 100 – (26+4) = 70%	success keeper: 26%
openness to borrowing 26+4 = 30%	success goalie: 4%

Proposed Solution

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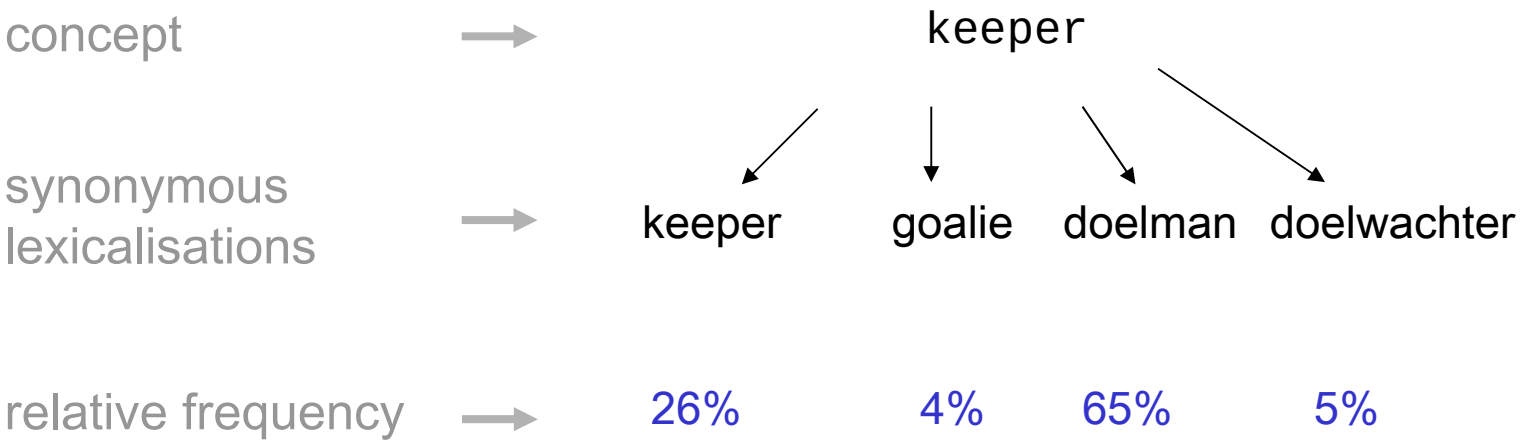

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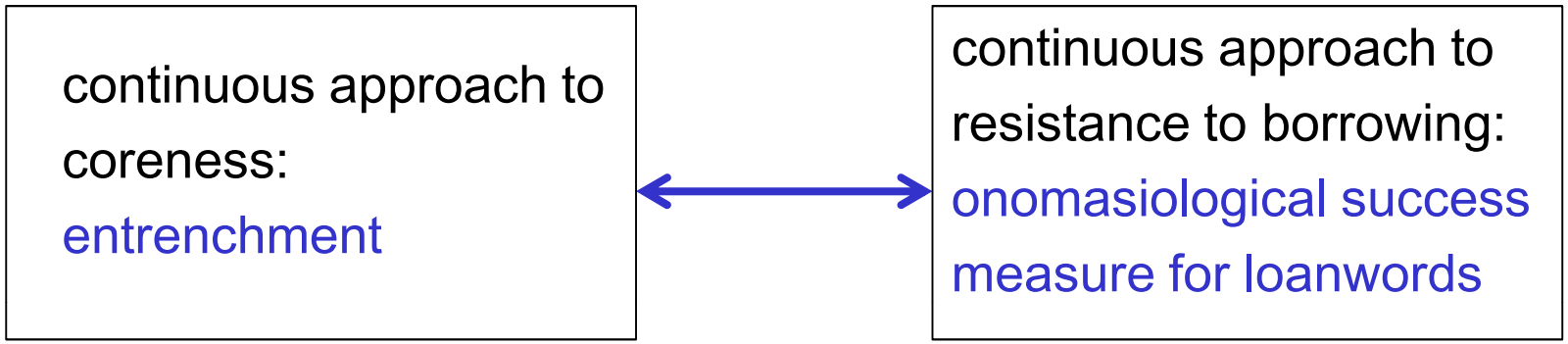
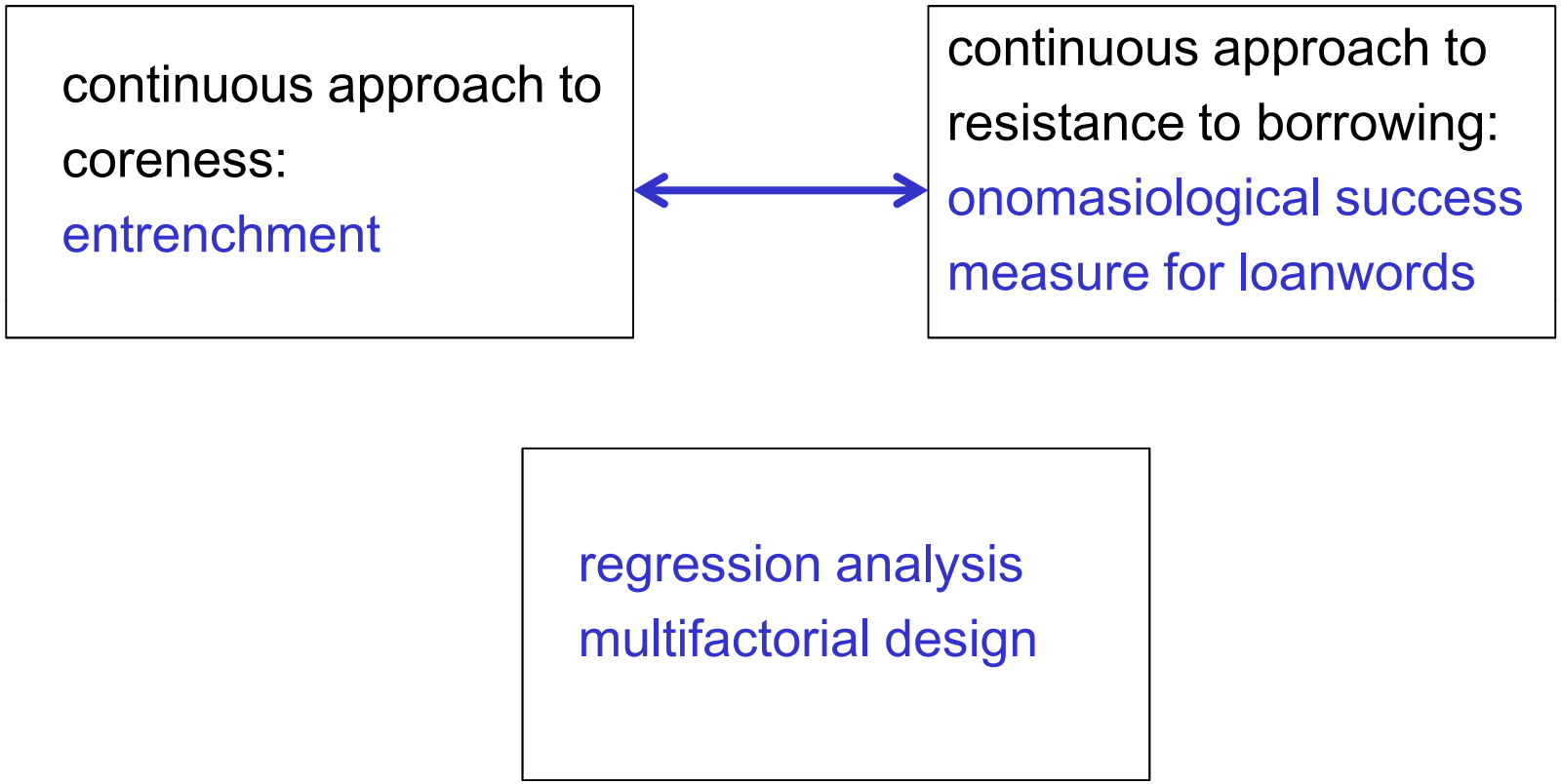

continuous approach to coreness:
entrenchment
continuous approach to resistance to borrowing:
onomasiological success measure for loanwords


continuous approach to coreness:
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continuous approach to resistance to borrowing:
onomasiological success measure for loanwords
regression analysis
multifactorial design

Core vocabulary is resistant to borrowing

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1. define core vocabulary → entrenchment
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3. establish the link between both → statistics

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1. resistance to borrowing: success measures for 150 English loanwords
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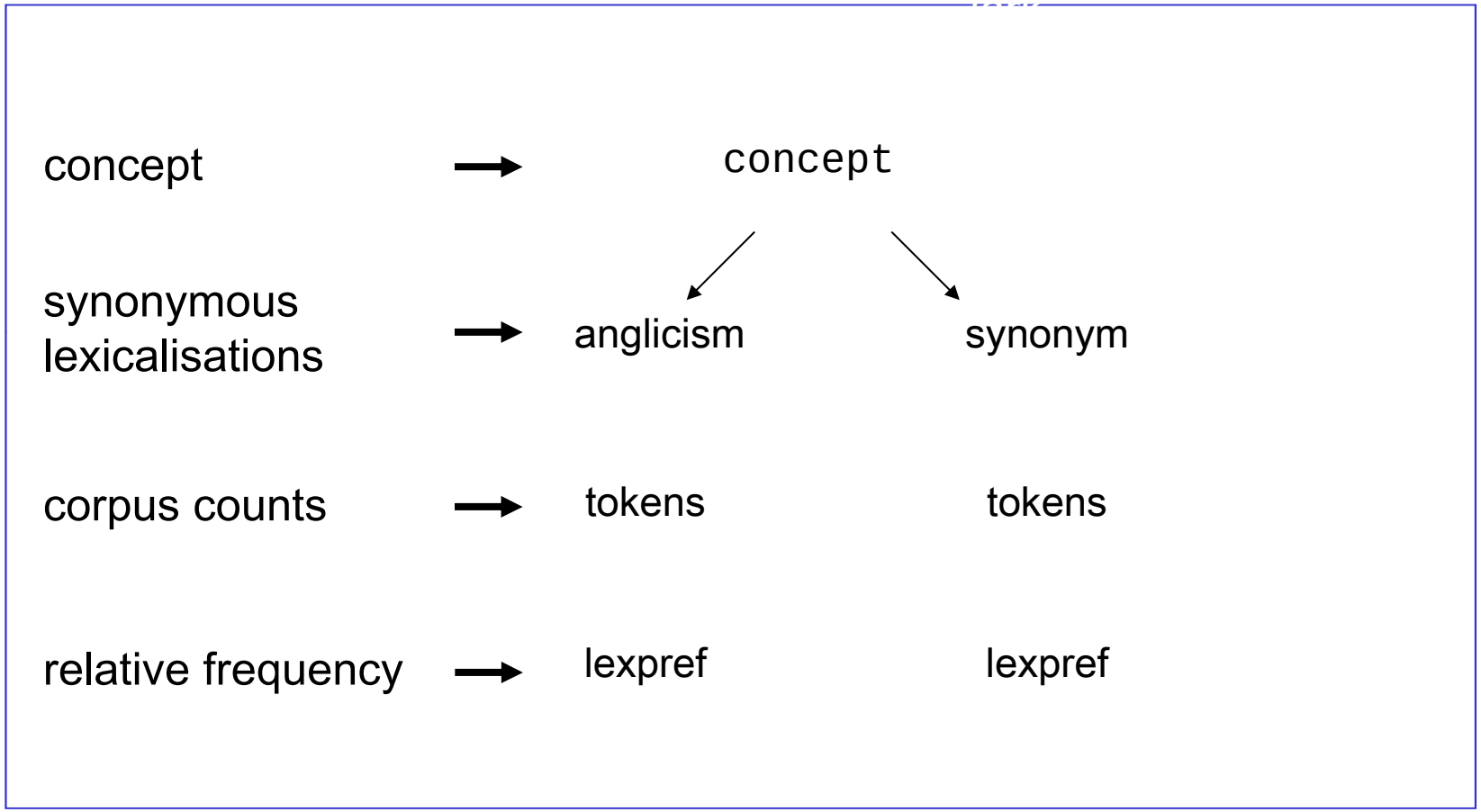
A. Corpus

Two Dutch newspaper corpora (parsed, lemmatised)

-	TwNC	Netherlandic Dutch	1999-2002	300 million words
-	LeNC	Belgian Dutch	1999-2005	1.3 billion words

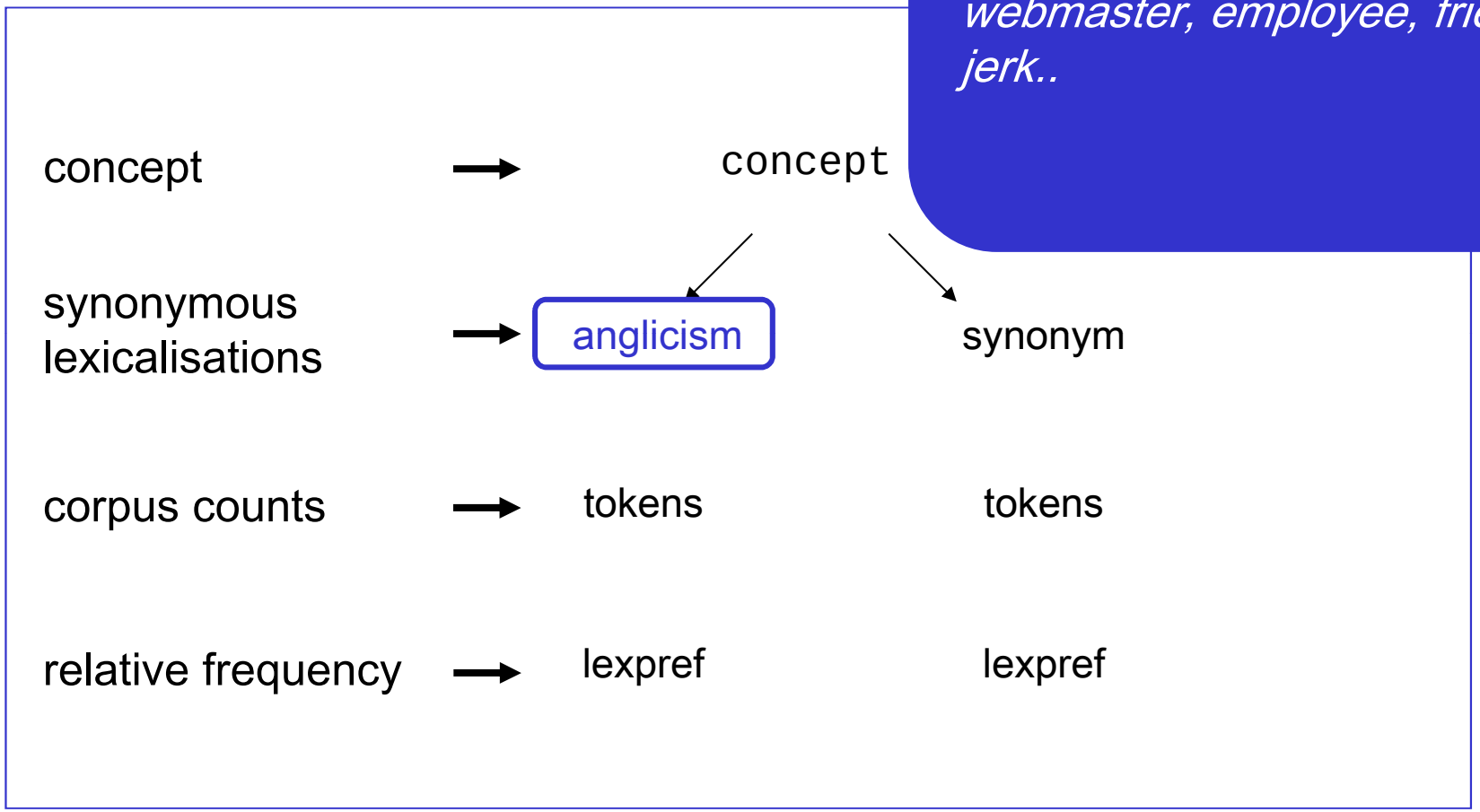
B. Profile-Based Method



B. Profile-Based Method

a. English person reference nouns:

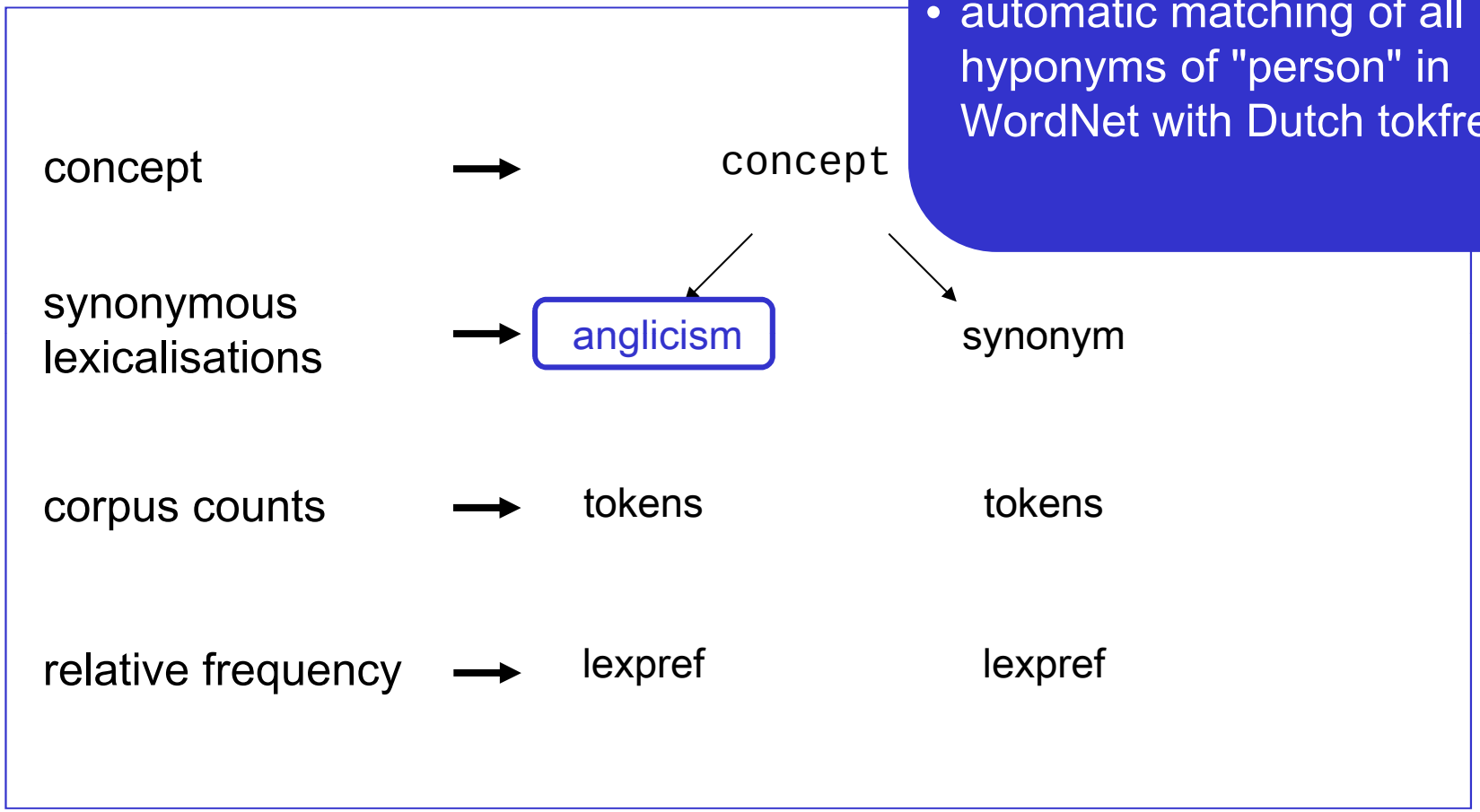
manager, babysitter, hooligan, webmaster, employee, friend, jerk..



B. Profile-Based Method

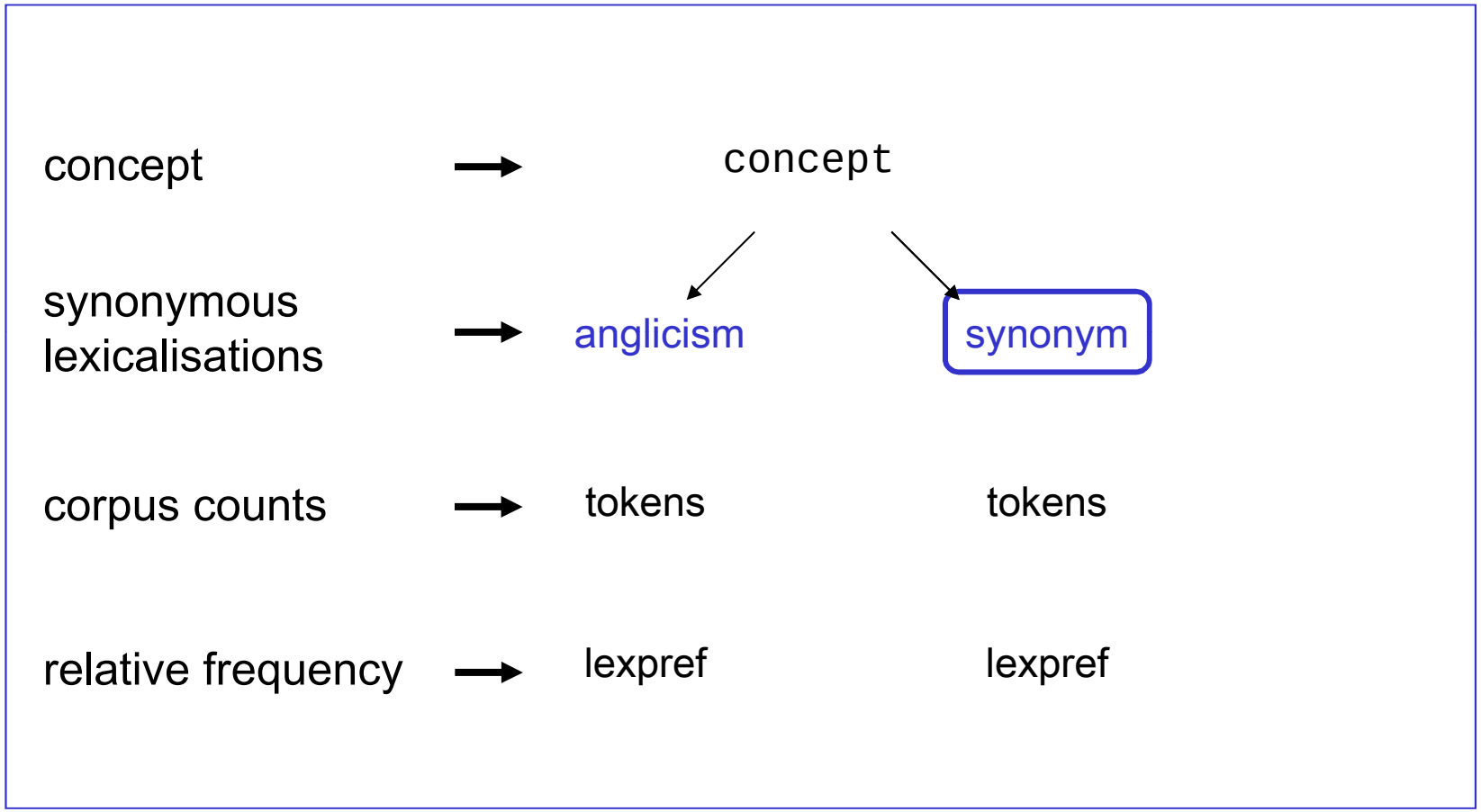
<u>selection of 150 English PRN occurring in Dutch</u>:

- lexicographical sources
- automatic matching of all hyponyms of "person" in WordNet with Dutch tokfreqlist



b. looking for synonyms

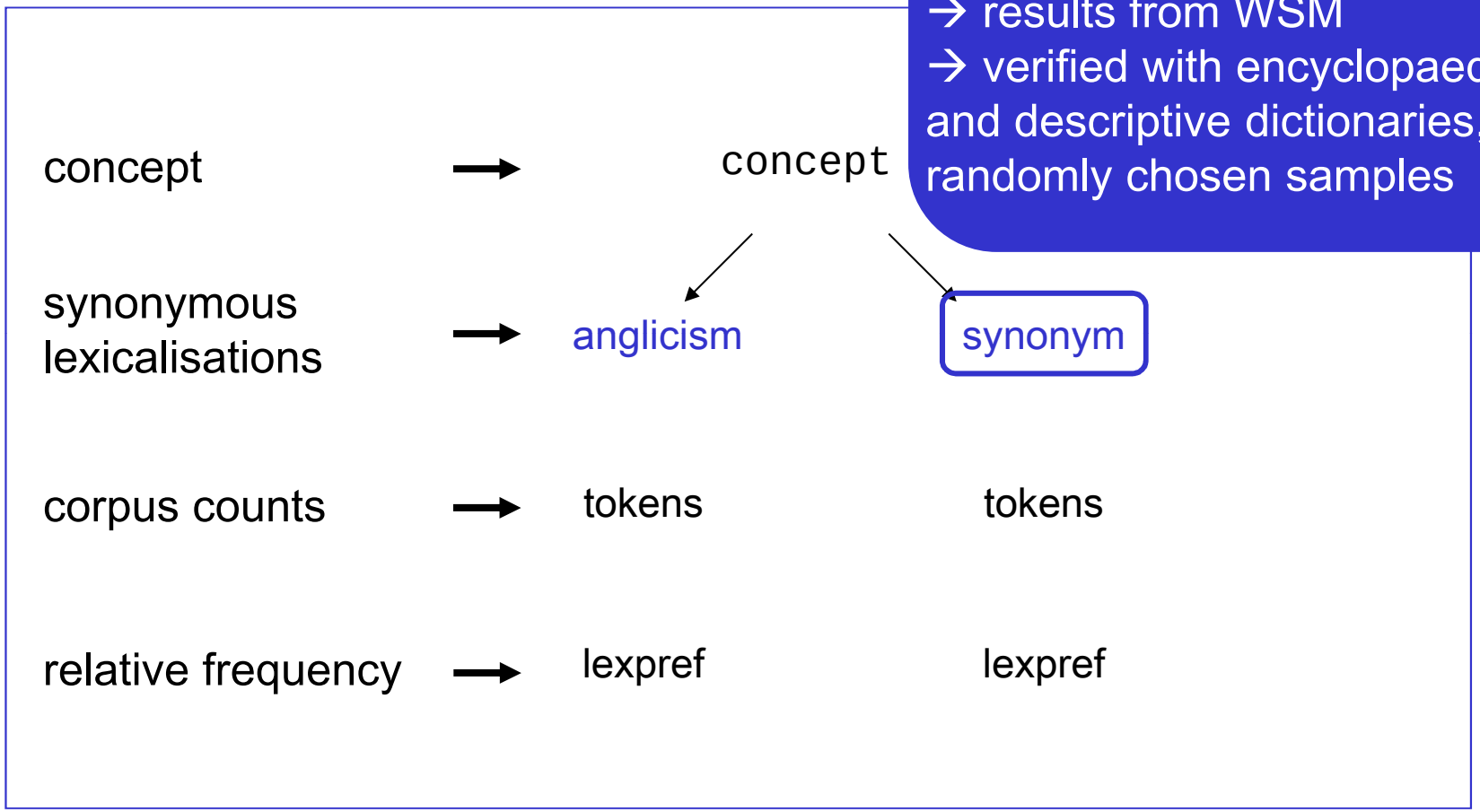
B. Profile-Based Method



B. Profile-Based Method

<u>looking for synonyms</u>
no blind trust in lexicography

→ 10 different lex.sources
→ results from WSM
→ verified with encyclopaedia's and descriptive dictionaries, 200 randomly chosen samples



B. Profile-Bas

concept

synonymous lexicalisations

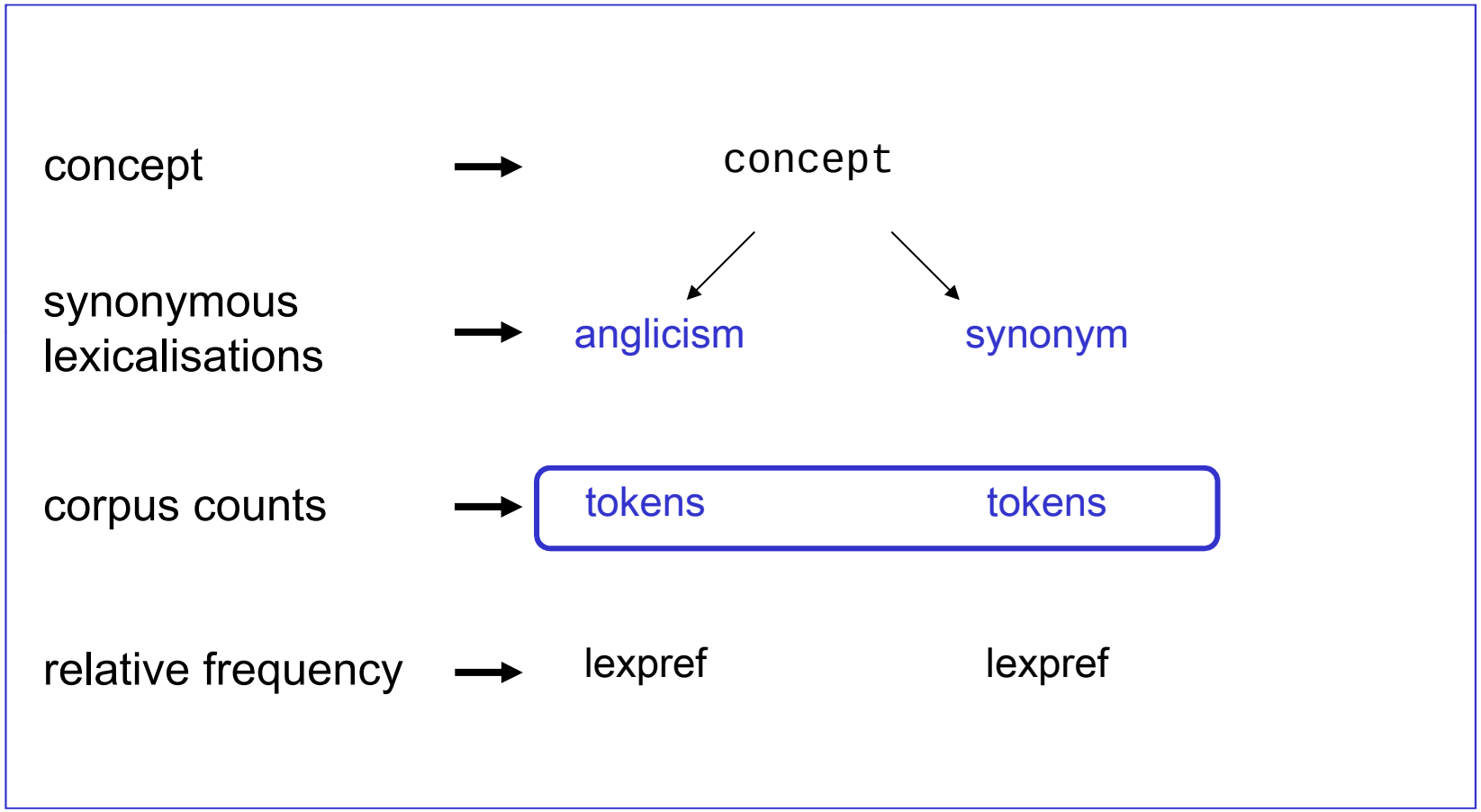
corpus counts

relative frequency

<u>profiles: examples</u>
babyboomer – boomer – geboortegolver
babysitter – babysit – kinderoppas
backpacker – rugzakker – rugzaktoerist
bitch – cunt – teef – feeks – kreng – kutwijf – secreet
copycat – na-aper – nabootser
foodie – culi
freak[fan] – fanatiekeling – fanaticus – fanaat
freak[weird] – weirdo – zonderling – excentriekeling
goalgetter – goaltjesdief – doelpuntenmachine
hacker – computerkraker
jobhopper
jogger
merchandiser – verkoopadviseur – verkoopstrateeg
trader – beurshandelaar
workaholic – werkverslaafde - arbeidsmaniak

c. retrieving tokens

B. Profile-Based Method



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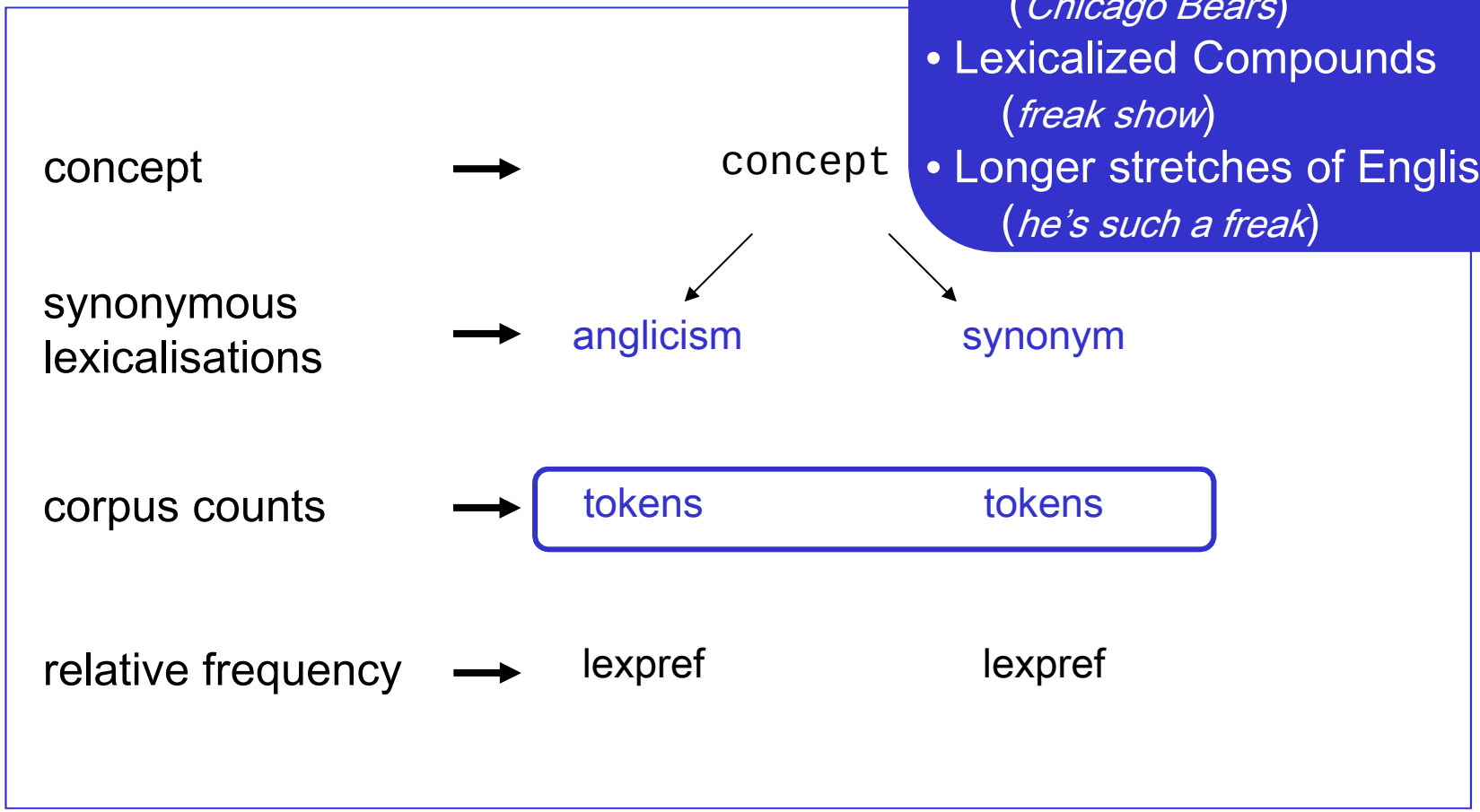

Automatic extraction

Noise (automatically excluded)

- Proper names (*Chicago Bears*)
- Lexicalized Compounds (*freak show*)
- Longer stretches of English (*he's such a freak*)

B. Profile-Based Method

concept → concept

synonymous lexicalisations → anglicism

corpus counts → tokens

relative frequency → lexpref

Polysemy

• **manually**: polysemous items with reasonable frequency (*chicken*)

chicken

B. Profile-Based Method

concept → concept

synonymous lexicalisations → anglicism

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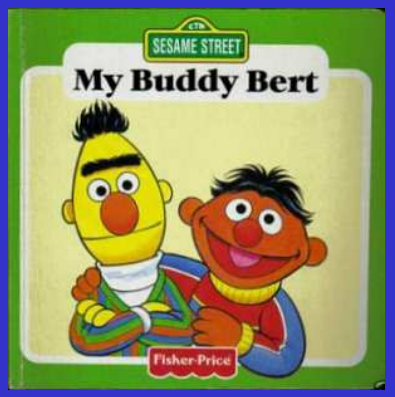
Polysemy

- **manually**: polysemous items with reasonable frequency (*chicken*)
- **semi-automatically or excluced**: concepts with high-frequent polysemous lexicalisations (*maatje*)

maatje



d. calculate success rates

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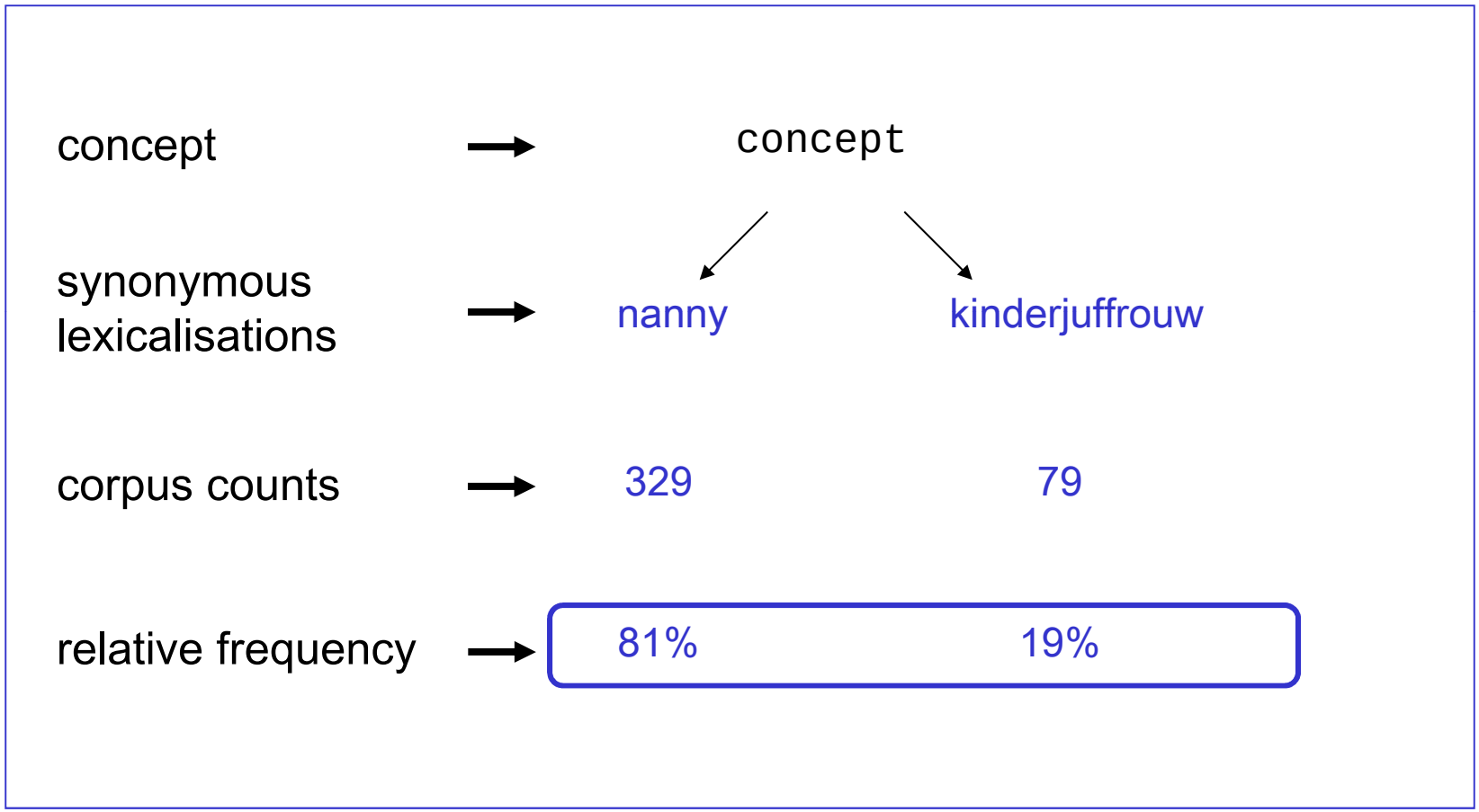

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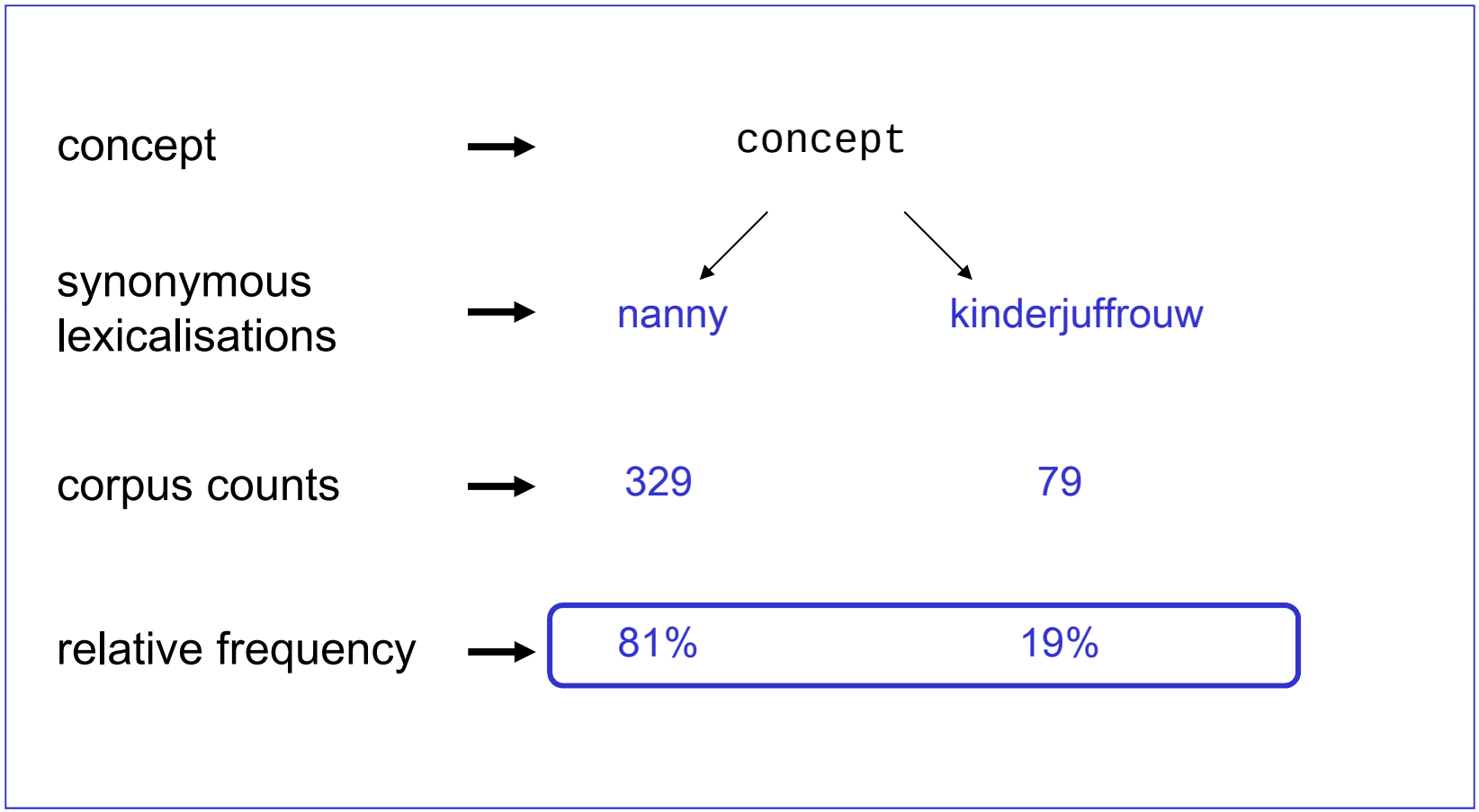
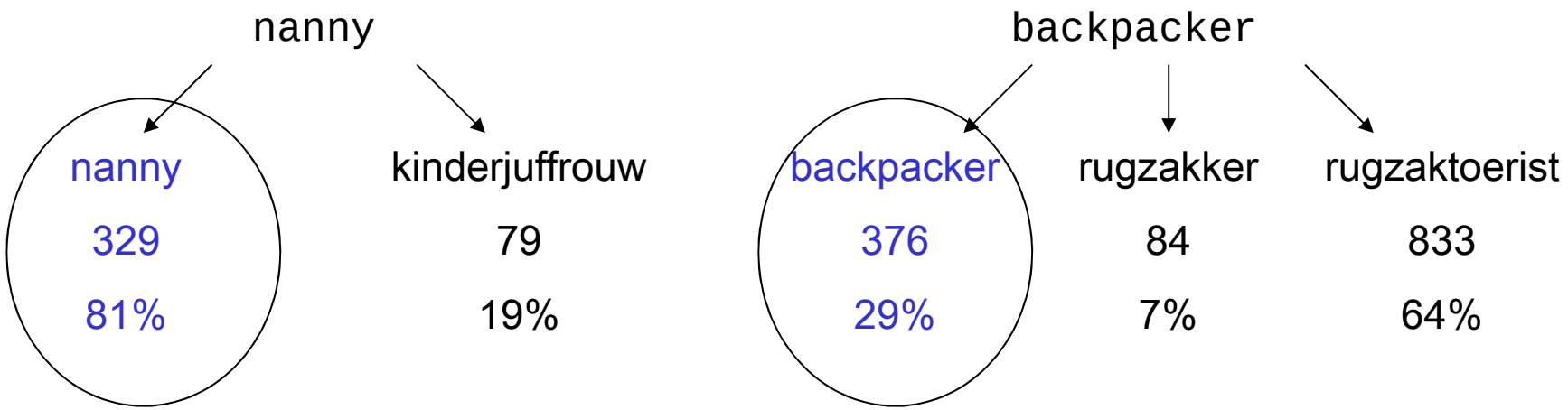


C. comparing success of all English PRN



explaining the variation

entrenchment-based vs. other predictors

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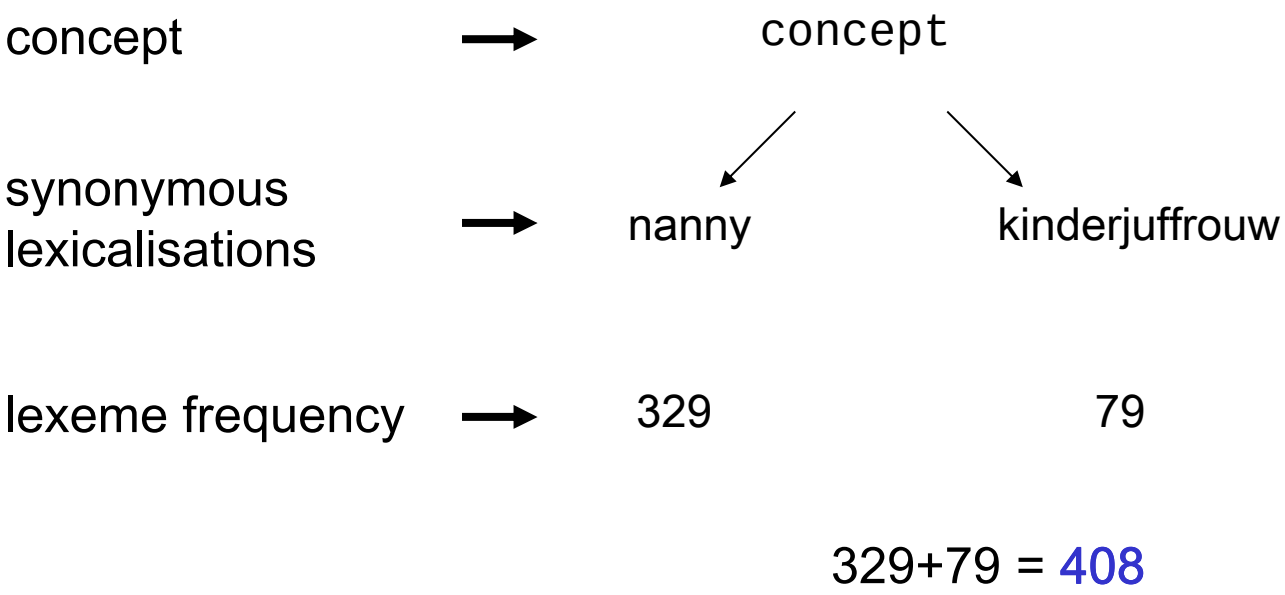
Entrenchment of the Concept Expressed

→ Corpus frequency of the concept expressed



Entrenchment of the Concept Expressed

→ Corpus frequency of the concept expressed

concept

synonymous lexicalisations

lexeme frequenc

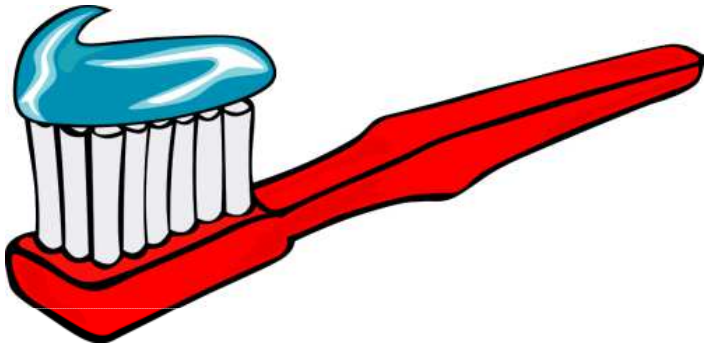
More frequent concepts
→ more frequently activated
→ higher entrenched/core
→ more resistance to borrowing
→ less success for the anglicism

high frequent concepts → low success loanword
low frequent concepts → high success loanword

329+79 = 408

Entrenchment of the Concept Expressed

BUT:



Entrenchment of the Concept Expressed

Additional measure of entrenchment:

age of the concept at the time the loanword was introduced

older concepts
→ longer activation
→ higher entrenched/core
→ more resistance to borrowing
→ less success for the anglicism

old concepts → low success loanword
young concept → high success loanword

Entrenchment of the Concept Expressed

BUT: careful

old concepts are not necessarily very entrenched (YEOMAN)

More straightforward: concept novelty

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webmaster: introduced for a new concept

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lexicalisations for BULL	introduced in Dutch in
haussier	1864
bull	1914
stier	1976

Entrenchment of the Concept Expressed

BUT: careful

old concepts are not necessarily very entrenched (YEOMAN)

More straightforward: concept novelty

webmaster: introduced for a new concept — NECESSARY

bull: introduced for an already lexicalized concept — LUXURY

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Competing Features

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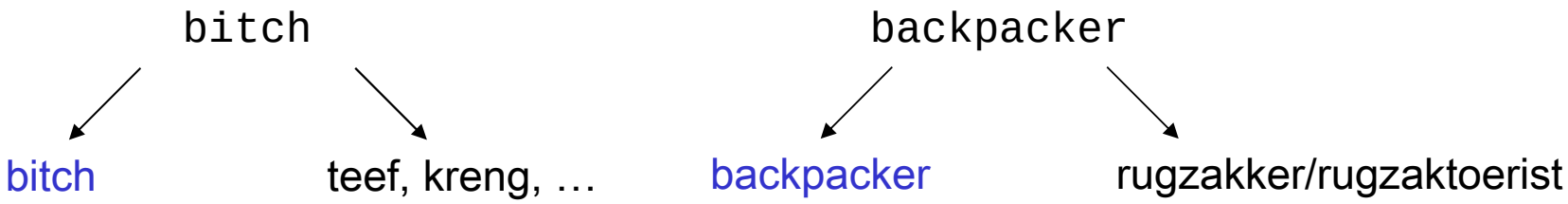
- concept neutrality: yes/no



Competing Features

- speech economy: shortest yes/no
- concept neutrality: yes/no
- age of the loanword: <5, 5-25, >25

Competing Features

- speech economy: shortest yes/no
- concept neutrality: yes/no
- age of the loanword: <5, 5-25, >25
- region, register, diachronic period: BD/ND, QUAL/POP, year

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Summarizing

Resistance to borrowing

- success of borrowed forms (PRN)

Entrenchment/coreness:

- concept frequency
- concept novelty (new/old)

Other predictors:

- speech economy
- concept neutrality
- age loanword
- region/register/diachronic period

Regression Analyses

Dependent variable: success of the anglicism

- problem with %: heavy tails due to cap at 0 and 1

  → transform to log(odds) (without 0/1-cases)

- in order to include lectal variation: 6 measuring points

One MP per subcorpus: split out for (1) region; (2) register; (3) year

measuring point	freq. *hacker*	conc.freq	angl.perc
hacker BD POP 9902	1000	1099	91%
hacker BD QUAL 9902	1343	1421	95%
hacker BD POP 0305	335	365	92%
hacker BD QUAL 0305	619	646	96%
hacker ND POP 9902	767	833	92%
hacker ND QUAL 9902	578	620	93%

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Regression Analyses

Mixed effect model; random variable "lexeme"
needed to take into account multiple measuring points

MODEL FOR ENTIRE DATASET

fixed only	R^2: 34.4%
mixed	reduction Std.Dev random variable: 21.6%

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(Intercept)	6.101	1.089	5.604	0.000	***
concnovelty.existing	-2.976	0.536	-5.555	0.000	***
log(concept frequency)	-0.740	0.146	-5.062	0.000	***
speechecon.shortest	-5.529	1.802	-3.069	0.002	**
log(concfreq) : speechecon.shortest	0.765	0.255	2.998	0.003	**
concnovelty.existing : speechecon.shortest	1.519	0.862	1.763	0.078	.

→ Three predictors are significant
→ Both entrenchment-related predictors

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interactions between all three selected predictors
→ interaction plots

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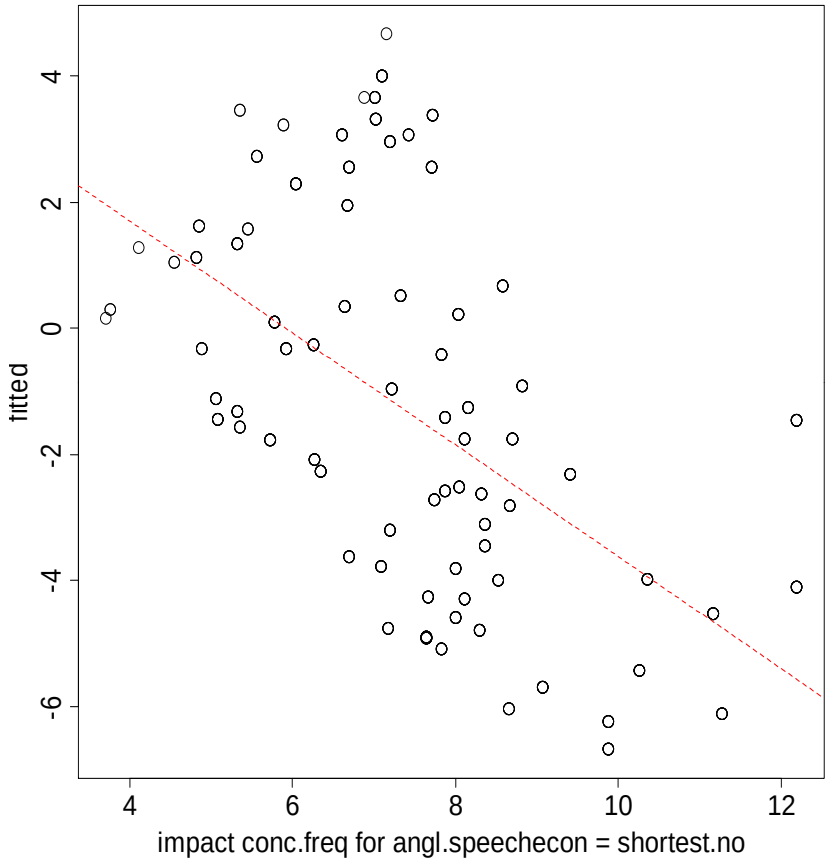
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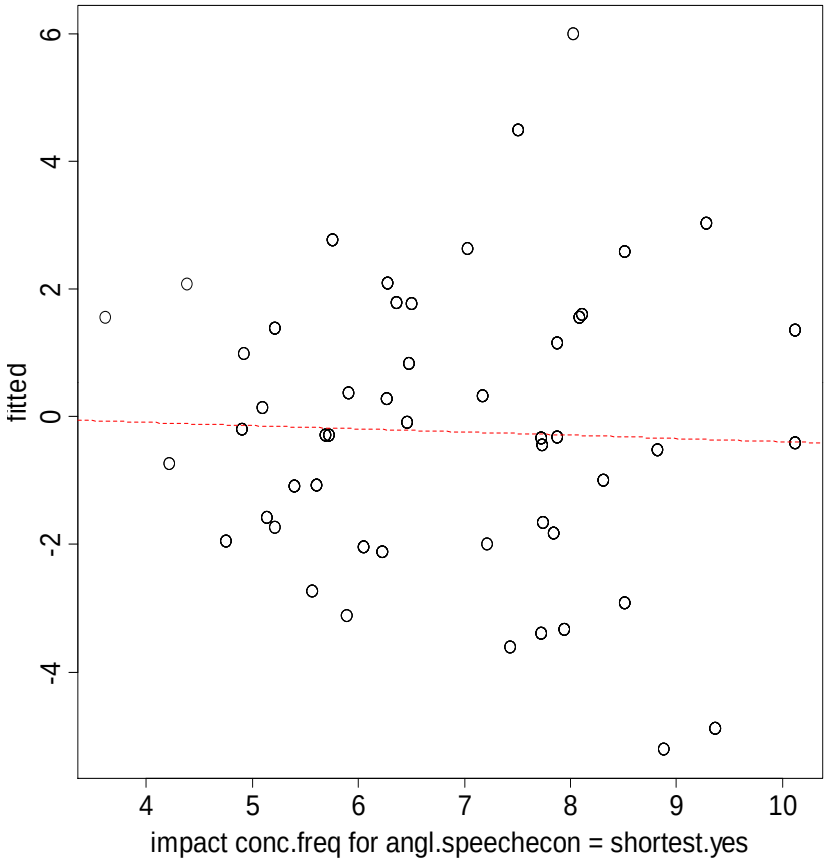
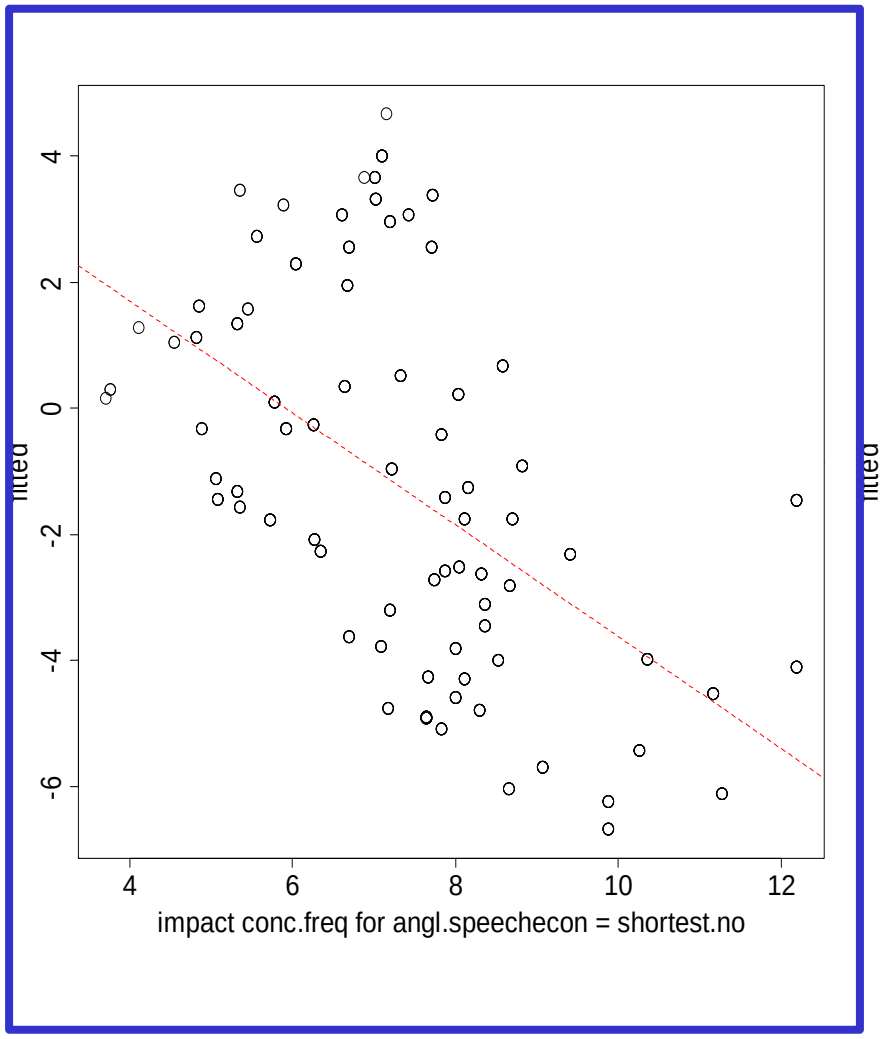
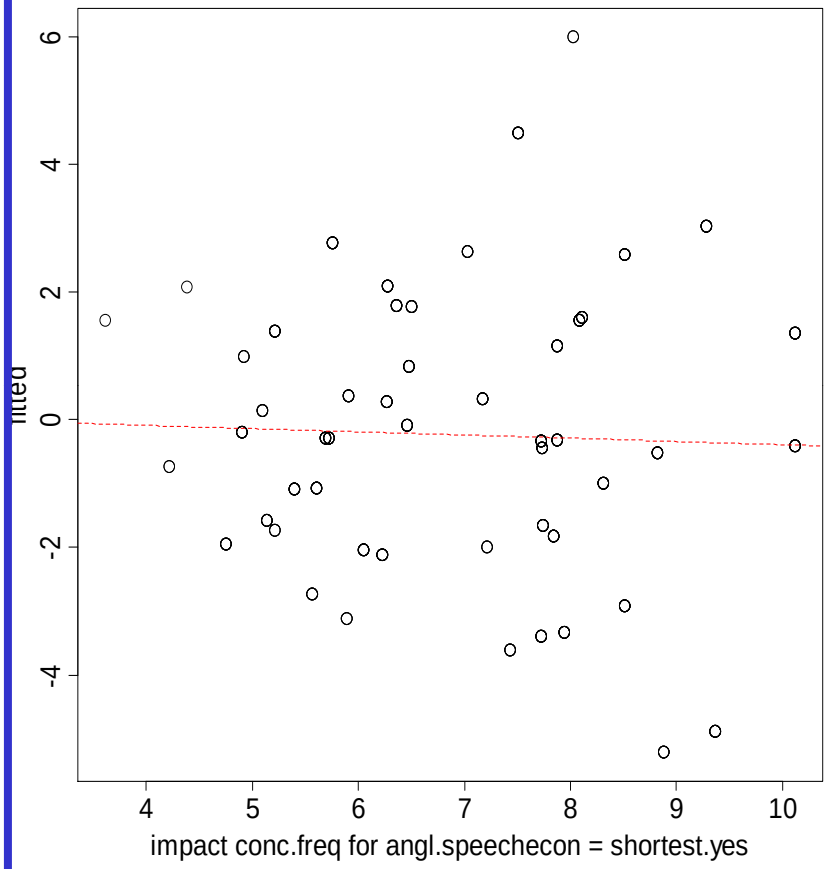
-2
-4
-6
4
6
8
10
12
impact conc.freq for angl.speechecon = shortest.no

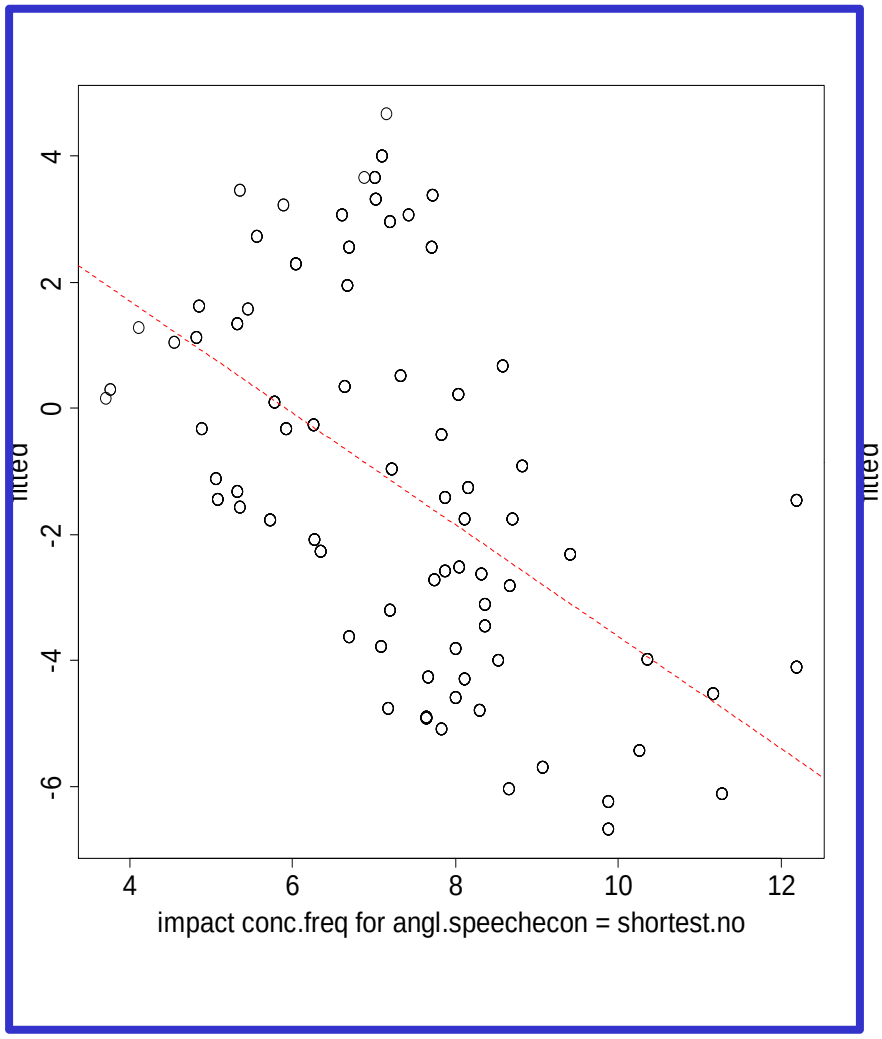

fitted
6
4
2
0
-2
-4
4
5
6
7
8
9
10
impact conc.freq for angl.speechecon = shortest.yes

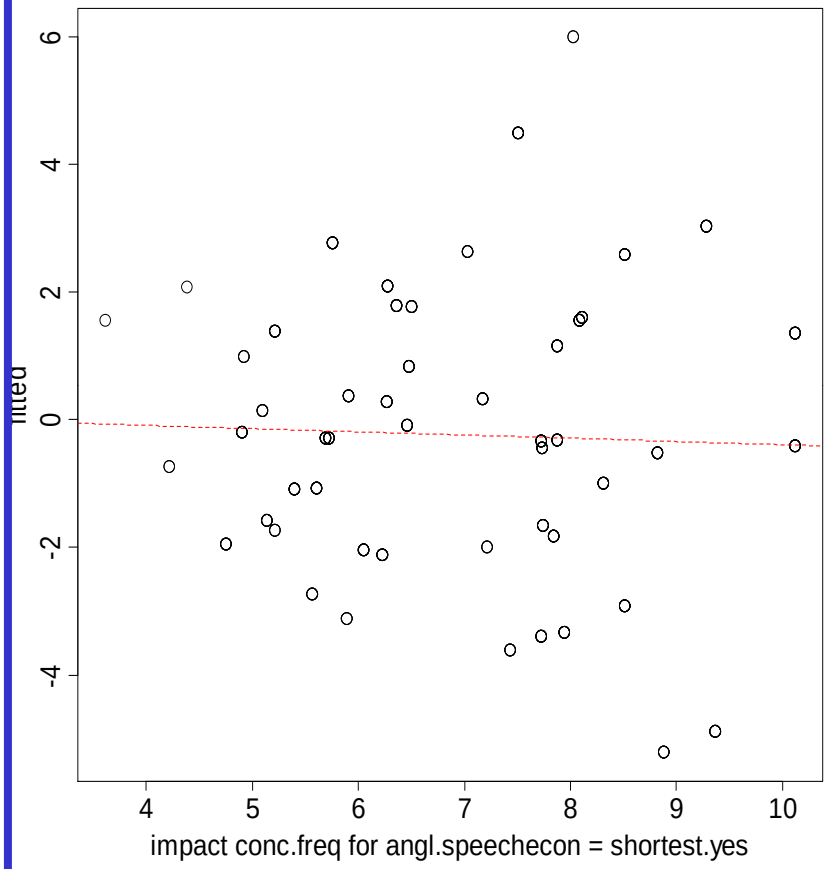
Anglicism is not the shortest equivalent (ghostwriter vs. negre)



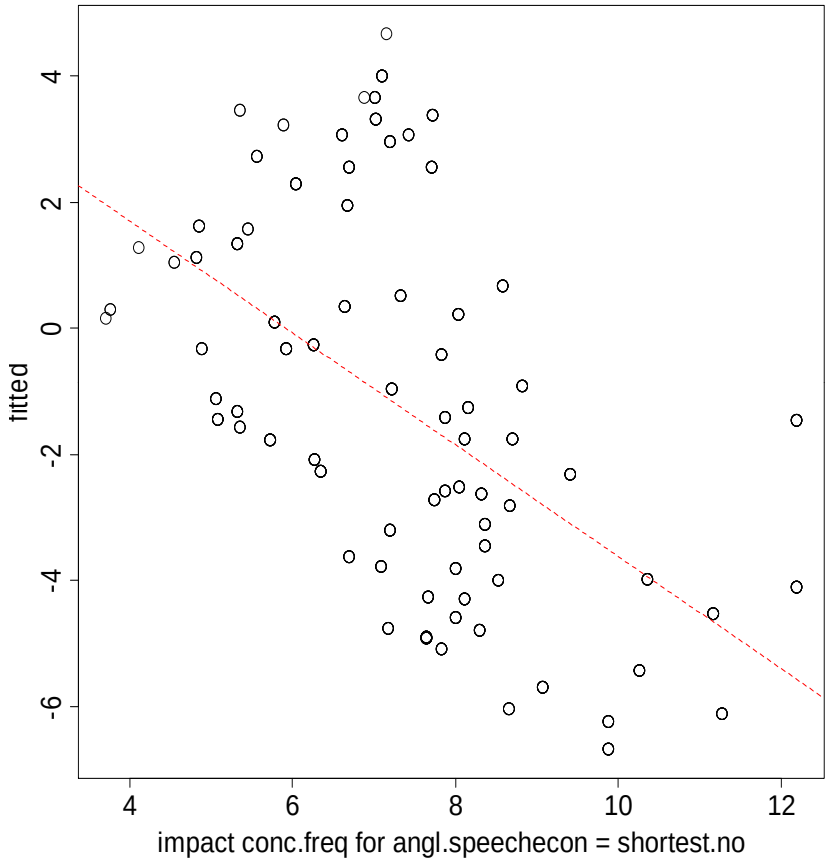


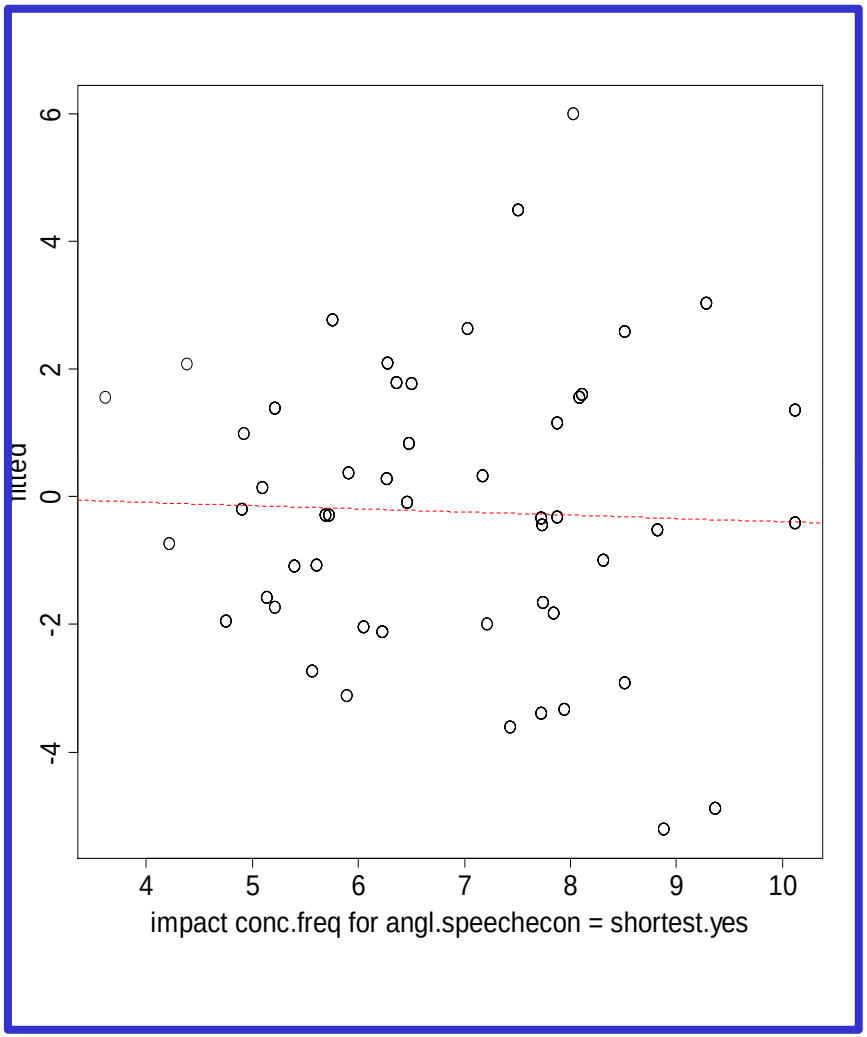
Higher concept frequency → lower success loanword



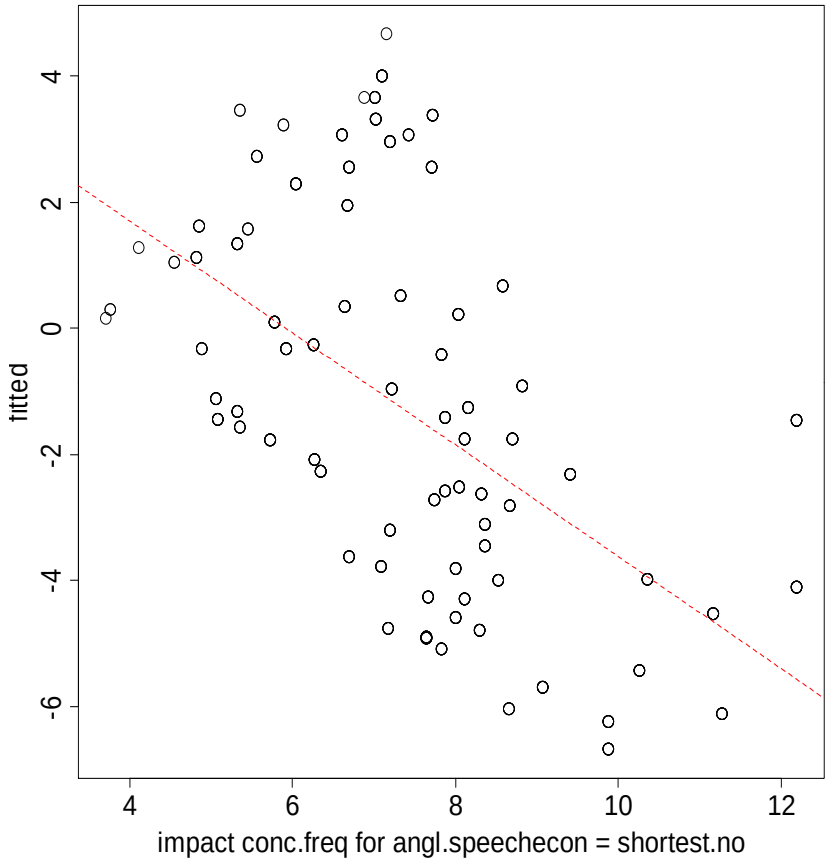


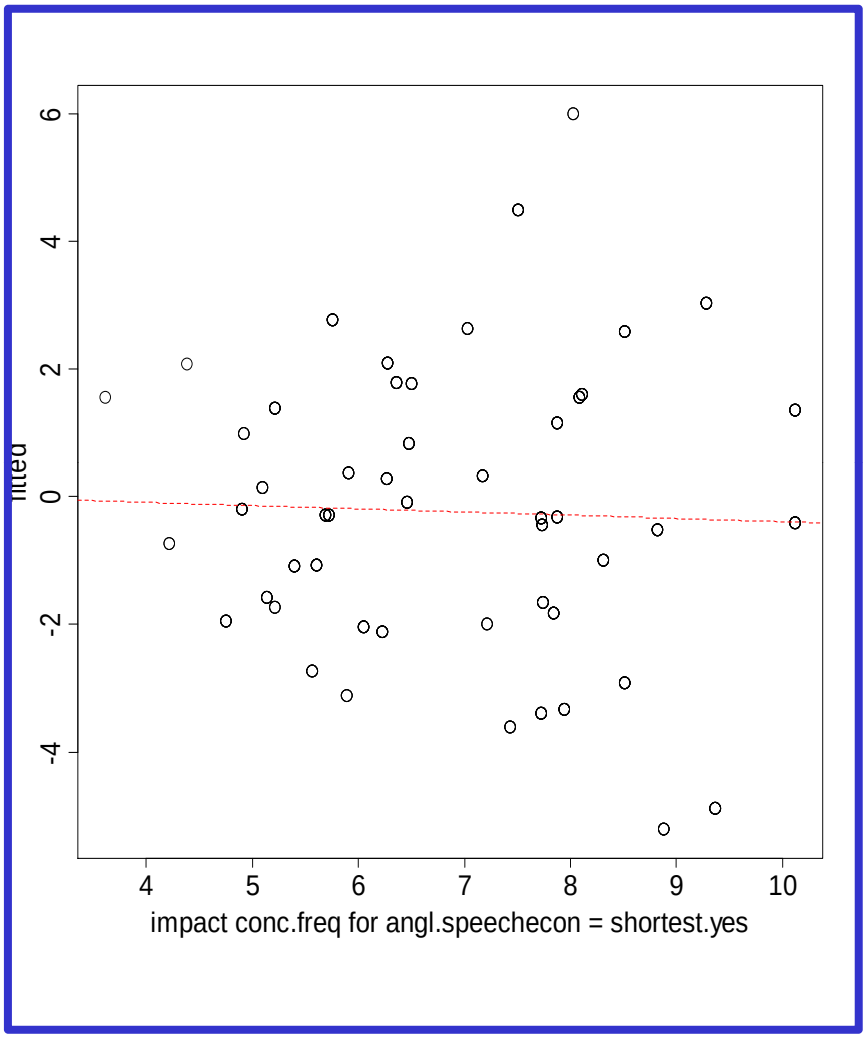
Anglicism is the shortest equivalent (bellboy vs. piccolo)



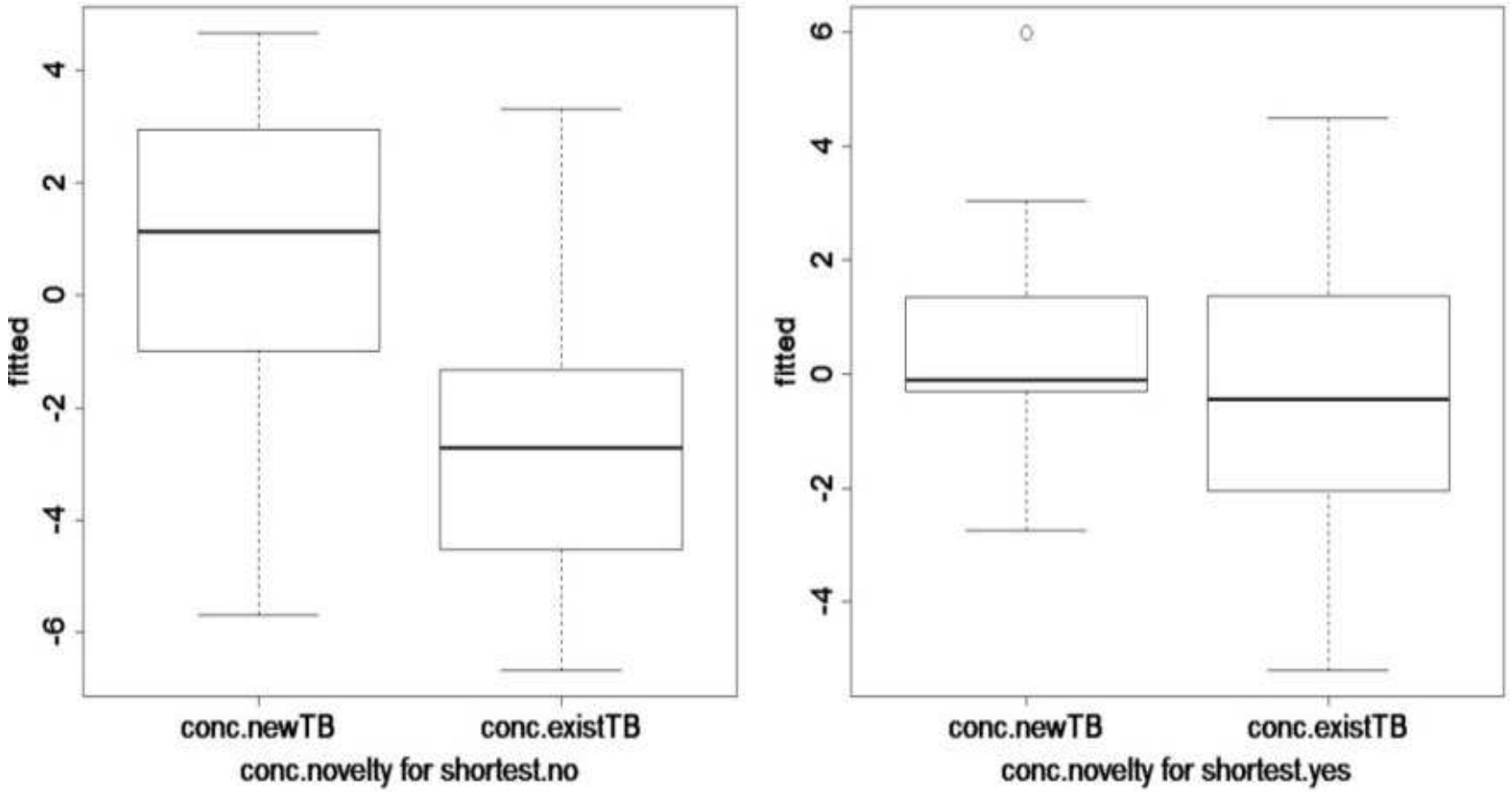


No effect for concept frequency





	Estim	Std.Err	Z-val	P	
(Intercept)	6.101	1.089	5.604	0.000	***
concnovelty.existing	-2.976	0.536	-5.555	0.000	***
log(concept frequency)	-0.740	0.146	-5.062	0.000	***
speechecon.shortest	-5.529	1.802	-3.069	0.002	**
log(concfreq) : speechecon.shortest	0.765	0.255	2.998	0.003	**
concnovelty.existing : speechecon.shortest	1.519	0.862	1.763	0.078	.


fitted
4
2
0
-2
-4
-6
conc.newTB
conc.existTB
conc.novelty for shortest.no
fitted
6
4
2
0
-2
-4
conc.newTB
conc.existTB
conc.novelty for shortest.yes

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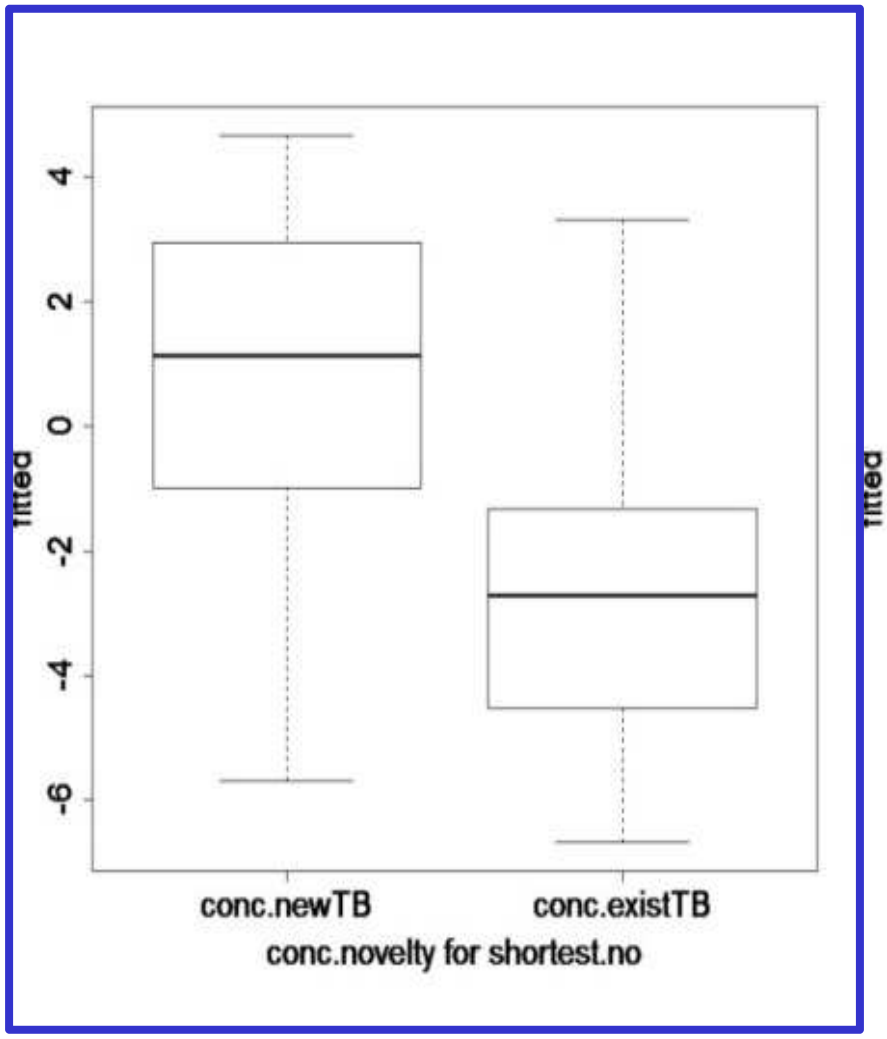

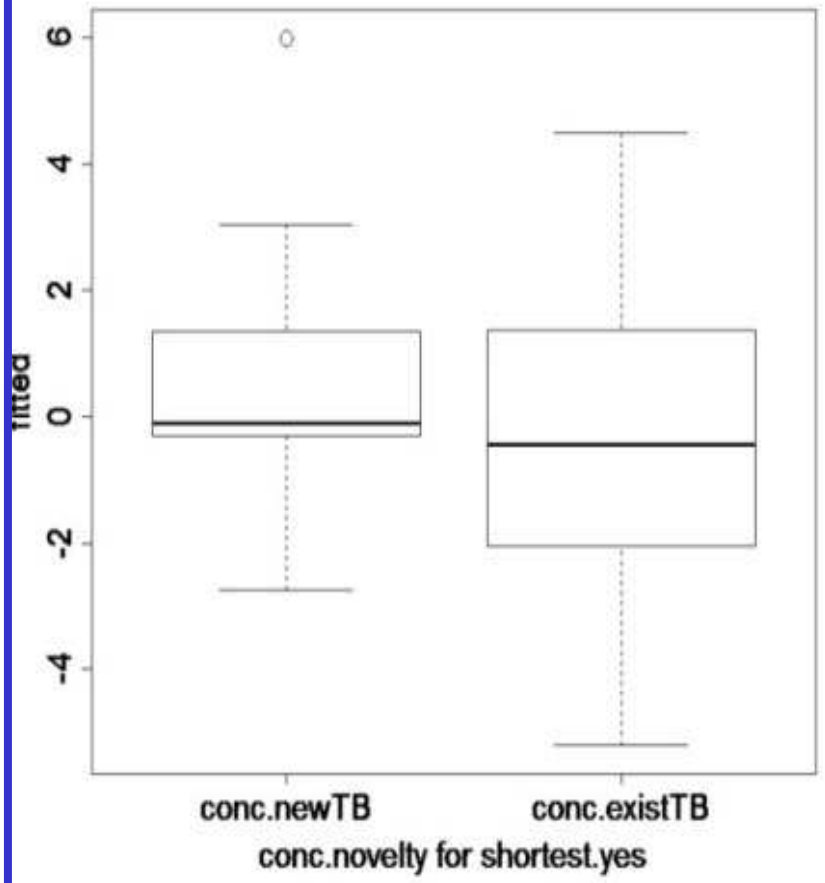

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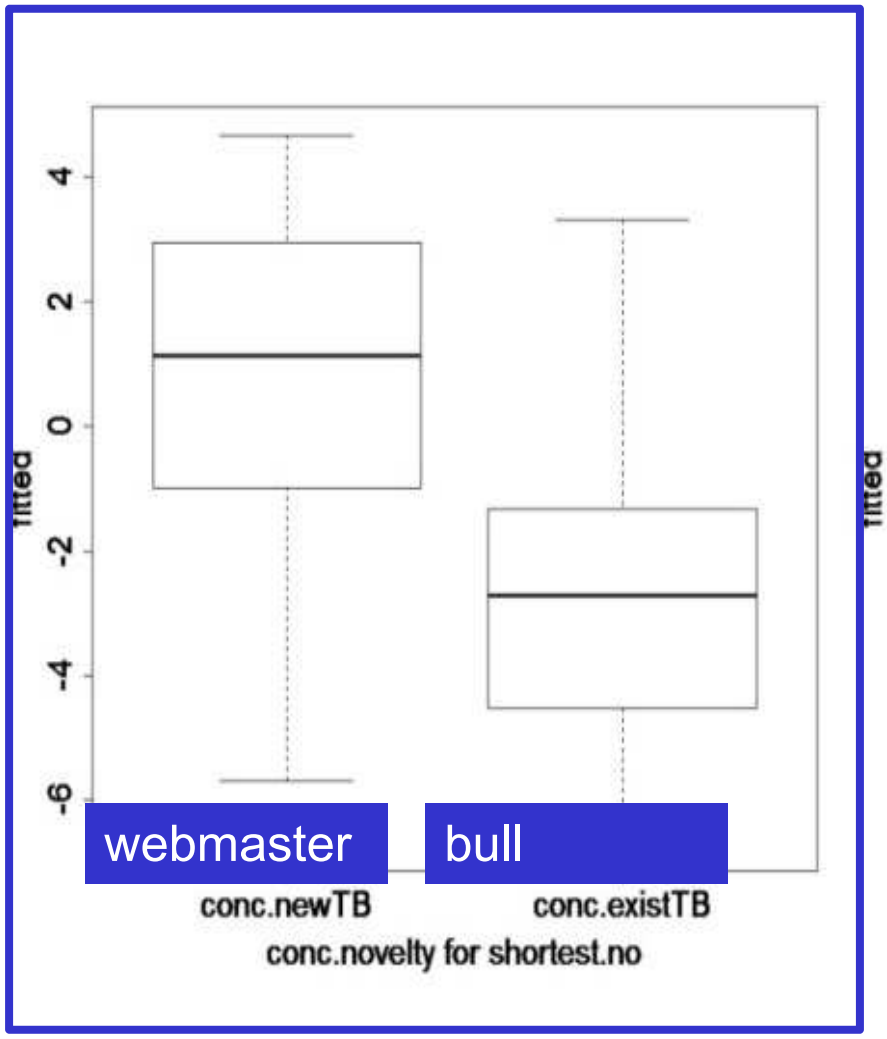
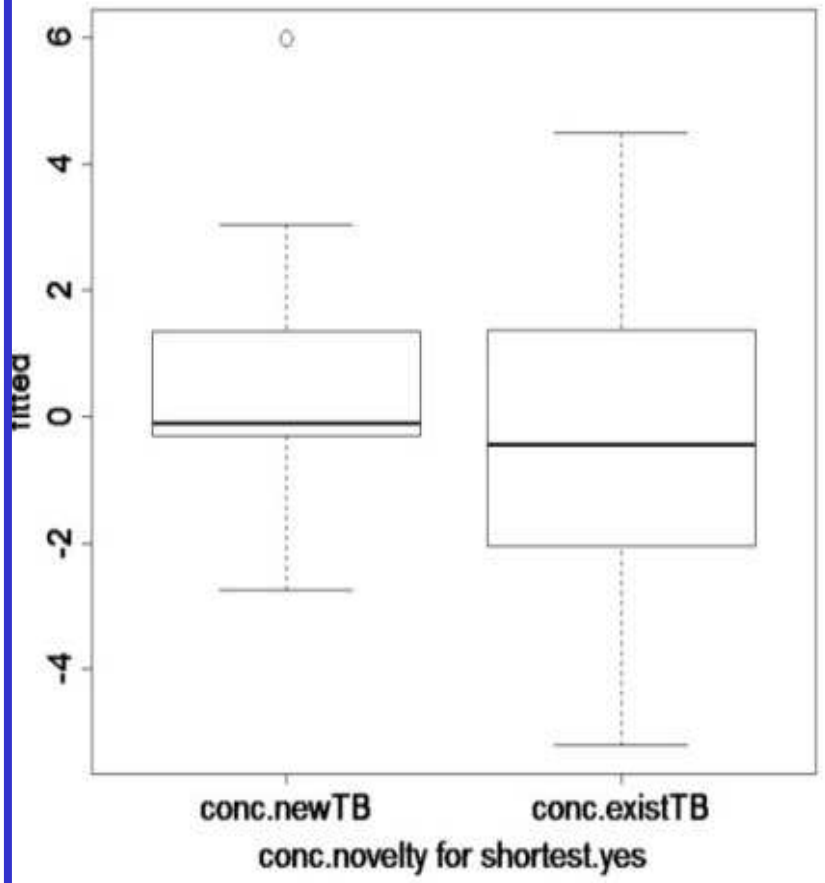
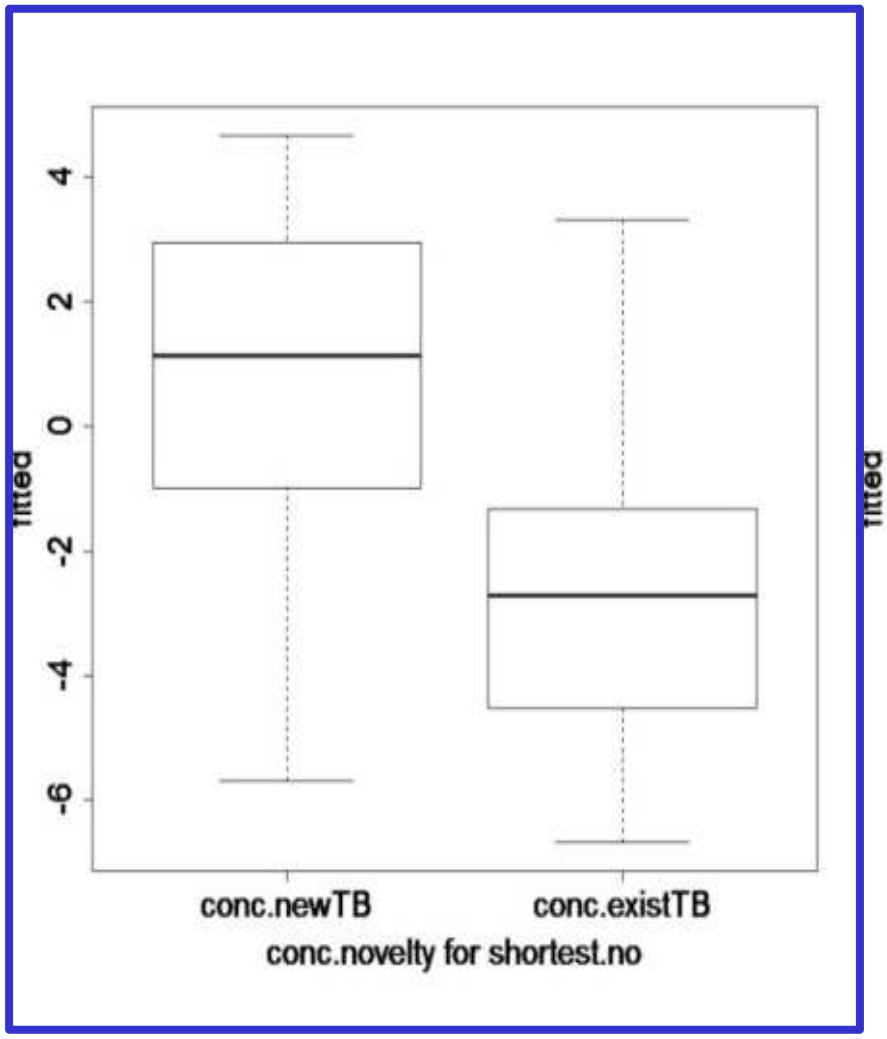
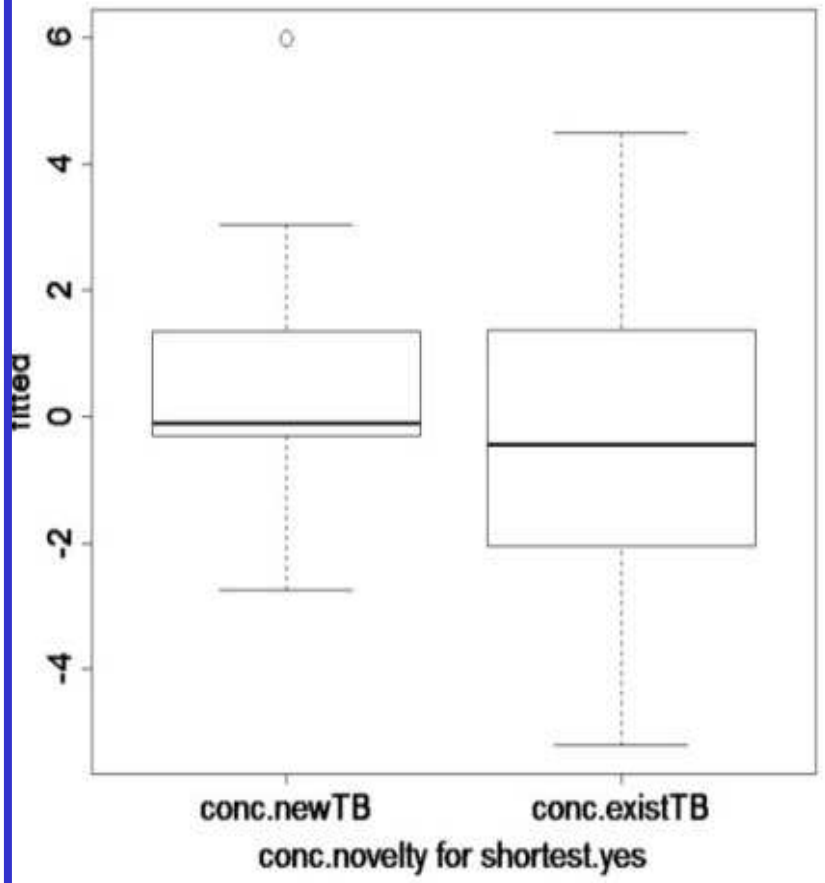


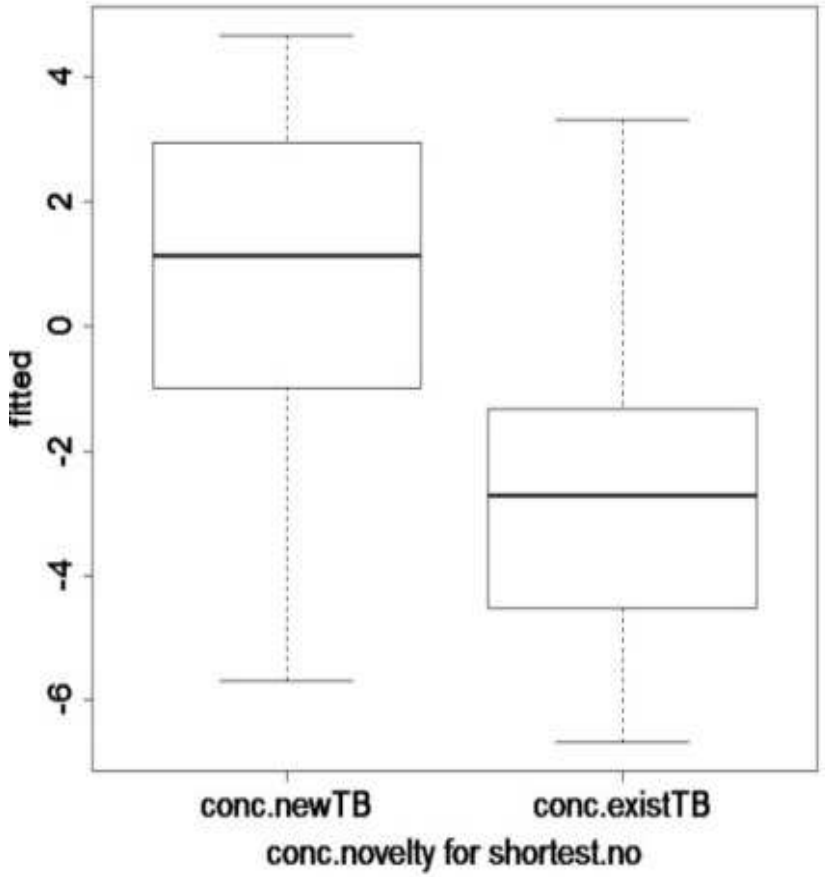


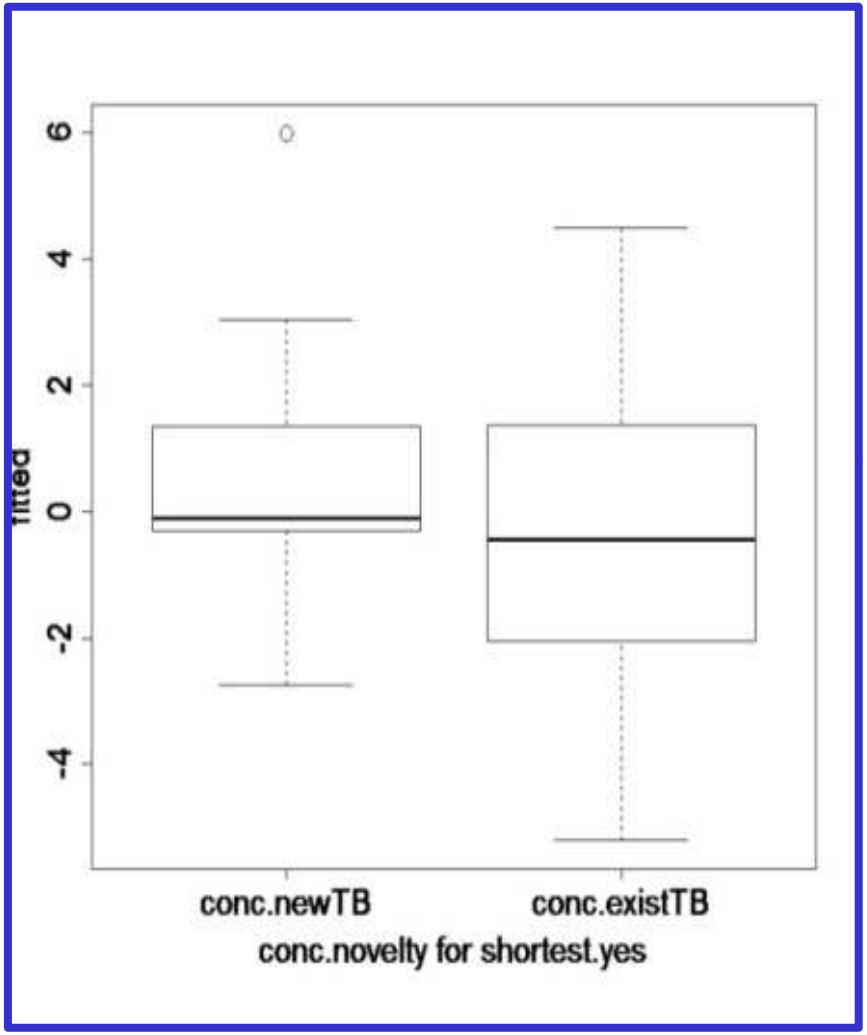
More success when filling lexical gap





Anglicism is the shortest equivalent (bellboy vs. piccolo)





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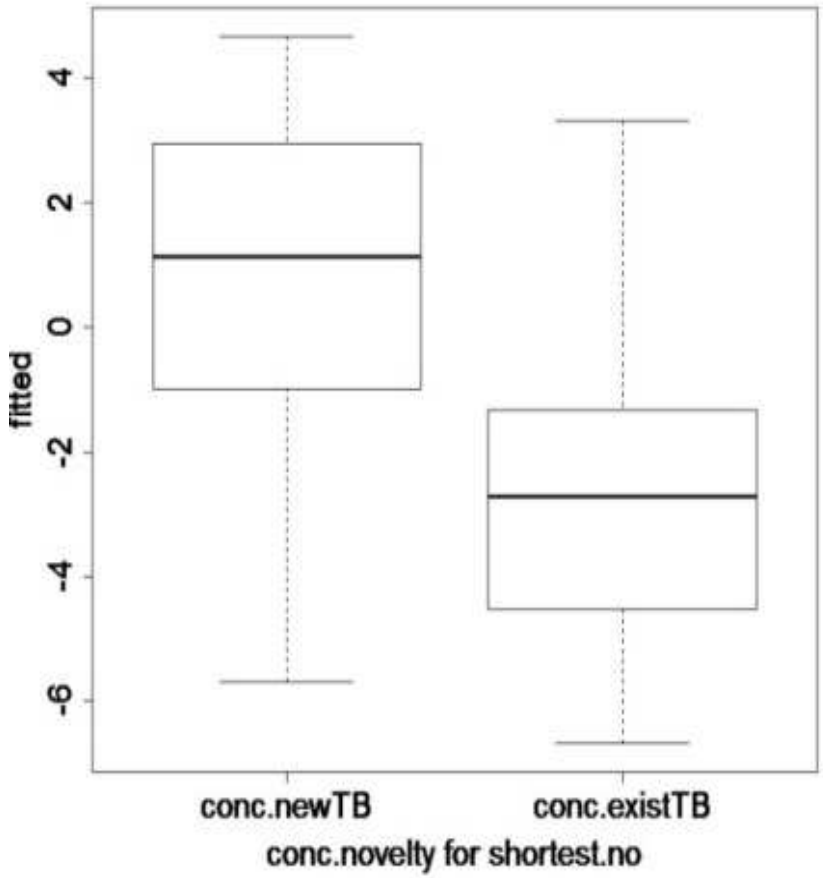
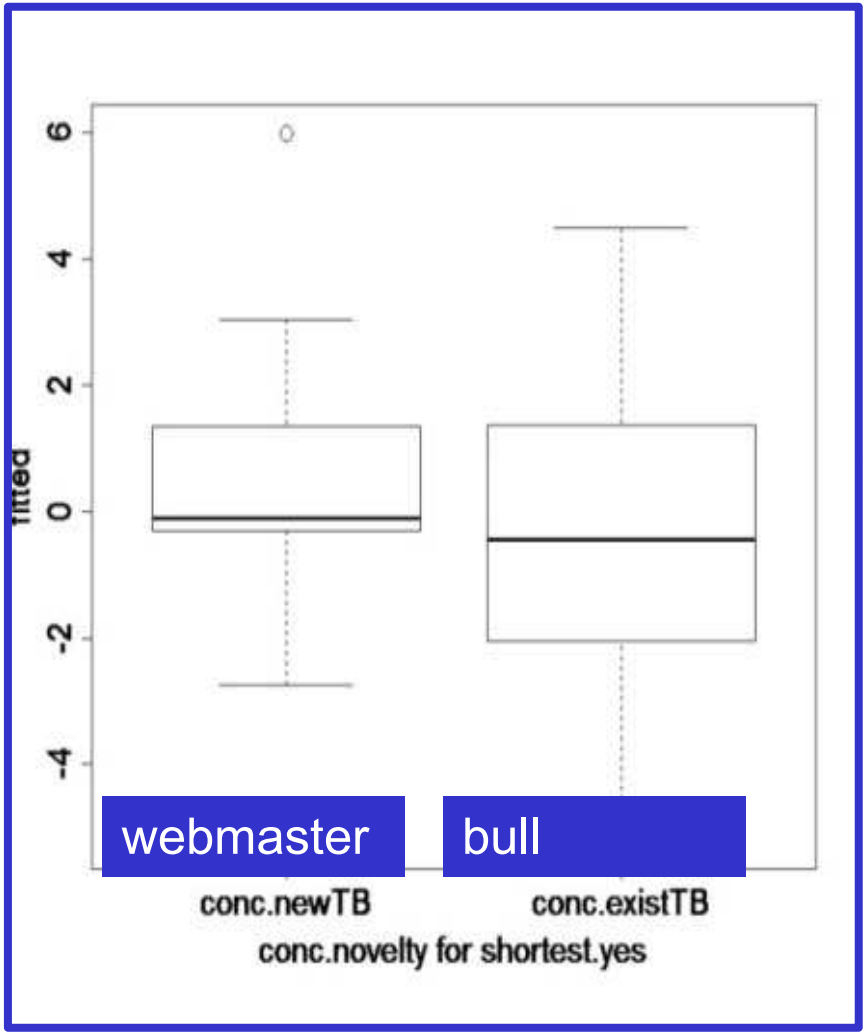
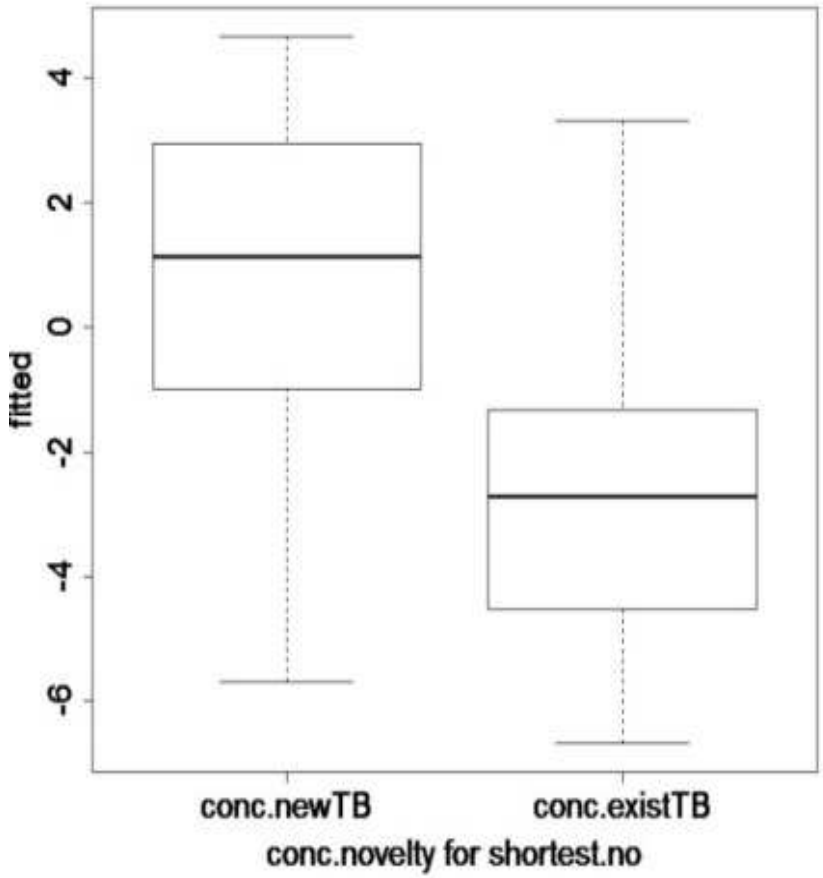
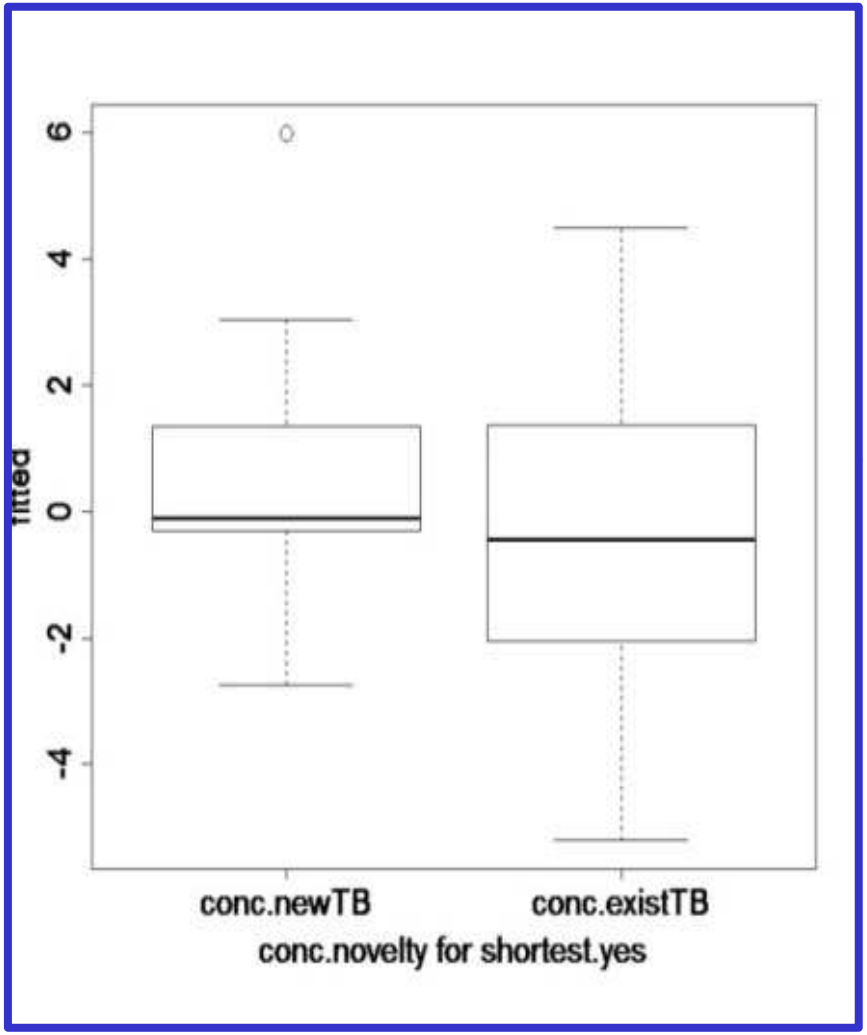




No effect for concept novelty





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Results

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- neutralizing effect for speech economy

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Future

- how about concepts without variation?
- applicability to comparative historical linguistics?

For more information:

http://wwwling.arts.kuleuven.be/qlvl

eline.zenner@arts.kuleuven.be

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