

**Emmerich Kelih**

Loanwords in South Slavic Languages (Bulgarian, Slovene, Croatian) from a  
crosslinguistic perspective: Problems and pitfalls

Ljubljana, 23.09.2017

12. letno srečanje Združenja za slovansko jezikoslovje//  
12th Slavic Linguistics Society Annual Meeting

## Overview

- Introduction
- Loan words in basic vocabulary
- Problems of determination
- Empirical contribution: Loanwords in the basic vocabulary of South Slavic languages
- Perspectives & current projects
- Summary

## Introduction: contact linguistics, sociolinguistics, cognitive linguistics, historical linguistics ...

### Lexical borrowing

- Lexis as open and dynamic system
- Alternatives: word formation, shift of meanings, neologisms ...
- Borrowings – loans: variation in form (loanwords, „foreign“ words, calques, „translations“ ...)
- various layers: Fachsprachen, spoken language ... **basic vocabulary**

## Traditional claims

1. Basic vocabulary resistant against borrowings/loans
  2. Borrowing only in case of intensive language contacts (Swadesh 1952, Embleton 1986, Hock & Joseph 1996, Zenner et al. 2014 )
- 

## Problems and pitfalls (selection)

- what is the **basic vocabulary** of a language?
- which definition of loanword is suitable?
- how to “catch” the intensity of language contact?
- which **further information on loanwords** are interesting?
- what about the time-depth of the determination of loanwords?

## How we can determine the basic vocabulary?

Basic/core vocabulary, „Grundwortschatz“, learner’s dictionaries (advanced learner) ... experiences by lexicography and/or language didactics

- communicative-pragmatic criteria of selection
- **goal**: handling of different (basic) communication situations

## In particular glottochronology, language typology etc. are working with

- fundamental (everyday) vocabulary
- Swadesh-list (Swadesh 1952, 1955 etc.)
- 100 or 200 meanings

Selected items			
I	man	louse	hand
thou	person	egg	swim
this	fish	hair	lie
that	bird	breasts	come
what	dog	heart	walk

## What about Slavic languages?

Swadesh-List adapted and modified by Mel'nyčuk 1962 and Carlton 1991

### COMMONLY USED ADJECTIVES

<i>PSl</i>	<i>OCS</i>	<i>Ukr</i>	<i>R</i>	<i>Br</i>	<i>Blg</i>	<i>M</i>	<i>SC</i>
běľь(jь)	бѣль	білий	белый	белы	бял	бел	бѐо
cěľь(jь)	цѣль	цілий	целый	цэлы	цял	цел	цѐо
čistь(jь)	чисть	чистий	чистый	чысты	чист	чист	чйст
čьgnь(jь)	чрънъ	чорний	черный	чорны	черен	црн	црн

<i>Sln</i>	<i>P</i>	<i>Cz</i>	<i>Slk</i>	<i>UL</i>	<i>LL</i>	<i>Polab.</i>
běl	biały	bílý	biely	běly	běly	b'olě
cěl	cały	celý	celý	cyły	ceły	c'ol
čist	czysty	čistý	čistý	čisty	cysty	caistě
črn	czarny	černý	čierny	čorny	carny	corně

215 lexemes in 7 groups

- (1) Commonly used adjectives
- (2) Common animals and birds
- (3) Common plants
- (4) Commonly used verbs
- (5) Kinship terms
- (6) Nature, tools, housing
- (7) Terms referring to nourishment
- (8) Parts of body (human and non-human)

**Focus of the pilot study: Bulgarien, Slovene, Croatian (cf. Kelih 2015, Kelih/Garić 2016, Kelih/Šimko 2017)**

## Slovene basic vocabulary – adapted Swadesh list

Adjectives	
bel	‘weiß’
rdeč	‘rot’
črn	‘schwarz’
mlad	‘jung’
star	‘alt’
dober	‘gut’
tuj	‘fremd’
grenak	‘bitter’
kisel	‘sauer’
ljub/mil	‘niedlich’
majhen	‘klein’
mehek	‘weich’
čist	‘sauber’
poln	‘voll’
zdrav	‘gesund’
slab	‘schlecht’, ‘schwach’
dolg	‘lang’
velik	‘groß’
zelen	‘grün’
zloben	‘böse’
živ	‘lebendig’

Animals and birds			
pes	‘Hund’	orel	‘Adler’
krava	‘Kuh’	osa	‘Wespe’
bik	‘Stier’	čebela	‘Biene’
ovca	‘Schaf’	jegulja	‘Meeraal’
koza	‘Ziege’	jagnje	‘Lamm’
konj	‘Pferd’	kača	‘Schlange’
svinja	‘Schwein’	riba	‘Fisch’
živina	‘Vieh’	žrebe	‘Fohlen’
gos	‘Gans’	jeseter	‘Stör’
jež	‘Igel’	sraka	‘Rabe’
kobila	‘Stute’	tele	‘Kalb’
jelen	‘Hirsch’	tur	‘Auerochse’
bober	‘Biber’	merjasec	‘Wildeber’
črv	‘Wurm’	volk	‘Wolf’
kokoš/kura	‘Huhn’	vol	‘Ochse’
medved	‘Bär’	vrana	‘Krähe’
mravlja	‘Ameise’		

Plants and fruits			
jabolka	‘Apfelbaum’, ‘Apfel’	koper	‘Dill’
jagoda	‘Erdbeere’	cvet	‘Blüte’
hruška	‘Birne’	gozd	‘Wald’
lipa	‘Linde’	trava	‘Gras’
bukev	‘Buche’	lan	‘Leinpflanze’
sliva	‘Zwetschke’	malina	‘Himbeere’
črešnja	‘Kirsche’	oreh	‘Nuss’
česen	‘Knoblauch’	oves	‘Hafer’
drevo	‘Baum’	proso	‘Hirse’
dob/ hrast	‘Eiche’	pšenica	‘Weizen’
ječmen	‘Gerste’	rž	‘Roggen’
jela	‘Tanne’	žito	‘Getreide’
bob	‘Bohne’	smreka	‘Fichte’

## Slovene basic vocabulary – adapted Swadesh list

Verbs	
živeti	‘leben’
biti	‘sein’
boleti	‘wehtun’
čuti	‘hören’
dati	‘geben’
držati	‘halten’
iti	‘gehen’
hoteti	‘wollen’
pečti	‘backen’
kuhati	‘kochen’ ‘sieden’
kleti	‘fluchen’
krmiti	‘füttern’
mleti	‘mahlen’
moliti	‘beten’
mučiti	‘foltern’
sejati	‘säen’
tresti	‘schütteln’
voziti	‘fahren’
vezati	‘binden’
biti	‘schlagen’

Kinship terms	
mati	‘Mutter’
oče	‘Vater’
sestra	‘Schwester’
brat	‘Bruder’
dete	‘(Klein)kind’
hči, hčera	‘Tochter’
sin	‘Sohn’
babica, stara mama	‘Großmutter’
ded, stari oče	‘Großvater’
mož	‘(Ehe-)Mann’
nevesta	‘Braut’
djver	‘Schwager’, ‘Mannesbruder’
svak	‘des Mannes Vater’
tast	‘Schwiegervater’
vnuk	‘Enkel’

Nourishment	
jesti	‘essen’
hleb	‘(Brot-)Laib’
mleko	‘Milch’
maslo	‘Butter’
meso	‘Fleisch’
moka	‘Mehl’
testo	‘Teig’
med	‘Honig’
piti	‘trinken’
vino	‘Wein’
pivo	‘Bier’
slanina	‘Speck’
sir	‘Käse’
sit	‘satt’



## Slovene basic vocabulary – adapted Swadesh list

Parts of body	
srce	'Herz'
roka	'Hand', 'Arm'
prst	'Finger'
glava	'Kopf'
črevo	'Darm'
jezik	'Zunge'
noga	'Fuß', 'Bein'
dlesni	'Zahnfleisch'
dlan	'Handfläche'
Kost	'Knochen'
koža	'Haut'
kri	'Blut'
noht	'(Finger-)Nagel'
nos	'Nase'
oko	'Auge'
brada	'Kinn', 'Bart'
palec	'Daumen', 'große Zehe'
peta	'Ferse'
čeljust	'Kiefer'
čelo	'Stirn'
obr	'Augenbraue'
telo	'Körper'
zob	'Zahn'

Nature, tools, housing			
dan	'Tag'	leto	'Sommer'
noč	'Nacht'	mesec	'Monat'
zvezda	'Stern'	breg	'Ufer', 'Hügel'
voda	'Wasser'	ogenj	'Feuer'
sonce	'Sonne'	os	'Achse'
Sneg	'Schnee'	plug	'Pflug'
dež	'Regen'	polje	'Acker', 'Feld'
Reka	'Fluss'	vrata	'Tür'
čoln	'kl. Boot'	rosa	'Tau'
dim	'Rauch'	dom	'Heim'
dolina	'Tal'	kamen	'Stein'
dvor	'Hof'	zlato	'Gold'
jezero	'See'	brana	'Egge'
gora	'Berg'	voz	'Wagen'
zemlja	'Erde'	veter	'Wind'

## Analysis (1): Loanwords in Slovene (basic vocabulary)

### in advance:

- Determination of loanwords by the means of etymological dictionaries (Bezljaj 1976ff, Skok 1971-73, Snoj 2003)
- expected: Rather old loanwords, highly adapted

### Adjectives

*tuj* 'fremd', different interpretations: PIE. \**teut*, ursl. \**tiudiu*, got. *þiuda* 'Volk', OCS. туждь, тоуждь, штоуждь / стоуждь

### nourishment

*hleb* 'Brot', germ. \**hlajba-*, got. *hlaifs*, aks. *xlěbъ*, ahd. *hleib*, dt. *Laib*

Group	Loanwords
Adjectives	<i>tuj</i>
Animals and birds	-
Plants	<i>bukev, črešnja, hruška,</i>
Verbs	∅
Kinship terms	∅
Nourishment	<i>hleb, vino</i>
Body parts	∅
Nature, tools, housing	<i>plug, zlato</i>

## Analysis (1): Loanwords in Slovene (basic vocabulary)

Group	Loanwords
Adjectives	<i>tuj</i>
Animals and birds	-
Plants and fruits	<i>bukev, črešnja, hruška,</i>
Verbs	∅
Kinship terms	∅
Nourishment	<i>hleb, vino</i>
Body parts	∅
Nature, tools, housing	<i>plug, zlato</i>

### In-between results

- No general resistance against borrowings
- Verbs, Kinship terms, body parts: no loans
- Adjective, Animals and birds, plants and fruits, Nature, tools, housing: few

**BUT:** are these loans indeed proofs for the language contact of Slovene?

## Analysis (2): Crosslinguistic view on Slavic languages

Croatian	Slovene	Bulgarien	Russian	
<i>bukva</i>	<i>bukev</i>	бук	бук	'Buche'
<i>plug</i>	<i>plug</i>	плуг	плуг	'Pflug'
<i>vino</i>	<i>vino</i>	вино	вино	'Wein'
<i>zlato</i>	<i>zlato</i>	злато	золото	'Gold'
<i>trešnja</i>	<i>črešnja</i>	череша	черешня	'Kirsche'
<i>krūška</i>	<i>hruška</i>	круша	груша	'Birne'
<i>skot</i> <i>(stoka)</i>	<i>skot</i> <i>(živina)</i>	скот <i>(добитък)</i>	скот <i>(скотина)</i>	'Vieh'
<i>tuđ</i>	<i>tuji</i>	чужд	чужой	'fremd'
<i>luk</i>	<i>luk (čebula)</i>	лук	лук	'Zwiebel'

1. Common loanword stock from older periods (Proto-Slavic, Common Slavic)
2. Limited insights into the language contact of the individual Slavic languages

### Analysis (3): Selected examples of individual developments

Croatian	Slovene	Bulgarian	Russian
<i>čamac</i> 'Boot'	<i>pivo</i> 'Bier'	<i>хубав</i> 'schön'	<i>лошадь</i> 'Pferd'
	<i>tur</i> 'Auerochse'	<i>карам</i> 'fahren'	<i>собака</i> 'Hund'
	<i>jegulja</i> 'Aal'	<i>хора</i> 'Land, Volk'	<i>глаза</i> 'Augen'
		<i>бира</i> 'Bier'	

1. Low number of „individual“ loanwords
2. But there is some evidence for language specific developments

## PROBLEMS AND OUTLOOK

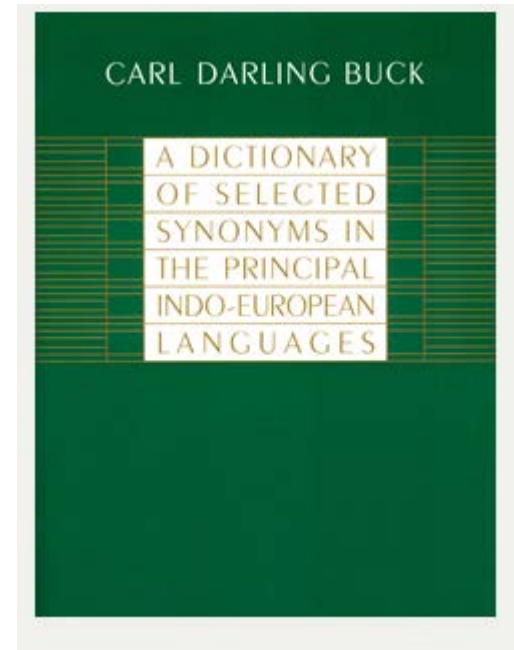
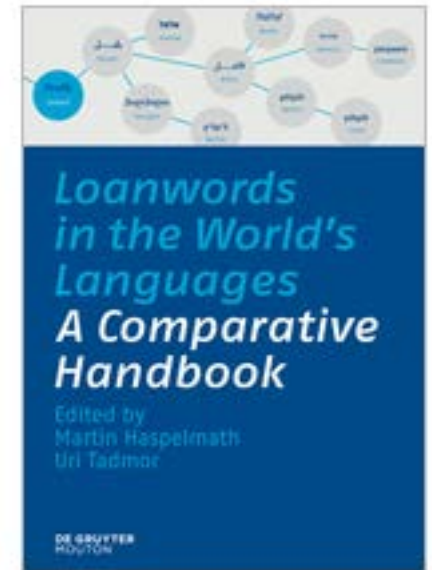
- Used “Swadesh list” for South Slavic languages is an insufficient data base (partly archaic, partly Fachsprache, no weighting of parts of speech)
- *Basic vocabulary* has to be specified theoretically
- **Enlargement** of the word list ( e. g. WOLD)
- **More information** about the **status of a loanword**

## The World Loanword Database (WOLD)

list of approx. 1500 meanings (given in English)

Buck, Carl Darling (1949): *A Dictionary of Selected Synonyms in the Principal Indo-European Languages*. Chicago.

- Special focus: Analysis of **basic vocabulary**
- material is grouped into **22 lexico/semantical subgroups**
- Word list, including meta-information about loan words status for over 40 languages



## General linguistics: loan/borrowings

- Basic data about the frequency of loan words/borrowings (different registers, corpora)
- frequency counts – various aspects (POS – loans, length of loans etc.)

New input and approach by the project of Haspelmath/Tadmor (2009)



### The World Loanword Database (WOLD)

It **provides vocabularies (mini-dictionaries of about 1000-2000 entries) of 41 languages from around the world, with comprehensive information about the loanword status of each word.** It allows users to find **loanwords, source words and donor languages** in each of the **41 languages**, but also makes it easy to **compare loanwords across languages**. Each vocabulary was contributed by an expert on the language and its history. The database can be accessed by language, by meaning or by author.

The list of **1460 meanings on which the vocabularies are based is called the Loanword Typology meaning list**, and it is in turn based on the list of the Intercontinental Dictionary Series.

The World Loanword Database is the result of a collaborative project coordinated by Uri Tadmor and Martin Haspelmath between 2004 and 2008, called the Loanword Typology Project (LWT).

<http://wold.clld.org/>



## Some further details

Nr.	lexico-semantic group	Nr. of meanings
1	The physical world	75
2	Kinship	82
3	Animals	96
4	The body	157
5	Food and drink	81
6	Clothing and grooming	59
7	The house	48
8	Agriculture and vegetation	74
9	Basic actions and technology	78
10	Motion	82
11	Possession	46
12	Spatial Relation	75
13	Quantity	38
14	Time	57
15	Sense perception	49
16	Emotions and values	48
17	Cognition	51
18	Speech and Language	41
19	Social and political relations	36
20	Warfare and hunting	40
21	Law	26
22	Religion and belief	26
Sum		1460

### Languages analysed:

Swahili, Iraqw, Gawwada, Hausa, Kanuri, Tarifiyt Berber, Seychelles Creole, Romanian, Selice Romani, Lower Sorbian, Old High German, Dutch, English, Kildin Saami, Bezhta, Archi, Manange, Ket, Sakha, Oroquen, Japanese, Mandarin Chinese, Thai, Vietnamese, White Hmong, Ceq Wong, Indonesian, Malagasy, Takia, Hawaiian, Gurindji, Yaqui, Zinacantán Tzotzil, Q'eqchi', Otomi, Saramaccan, Imbabura Quechua, Kali'na, Hup, Wichí, Mapudungun

Extra-category (added by Haspelmath/Tadmor 2009)

- Modern world
- Miscellaneous function words (both are not analysed)

## What kind of meta-information information do we get?

	Upper-Sorbian		
meaning	word form	borrowed status	source words
world	swět	5. no evidence for borrowing	land 'land, country' New High German
land	land	1. clearly borrowed	kraj 'country, land' Upper Sorbian
land	kraj	2. probably borrowed	
soil	zemja	5. no evidence for borrowing	
dust	proch	5. no evidence for borrowing	
mud	kuř	5. no evidence for borrowing	
sand	pěsk	5. no evidence for borrowing	
mountain or hill	góra	5. no evidence for borrowing	
cliff or precipice	skała	5. no evidence for borrowing	
plain,	rownina	5. no evidence for borrowing	
field	plonina	5. no evidence for borrowing	
valley	doł	5. no evidence for borrowing	
island	kupa	5. no evidence for borrowing	
...	...	...	...

1. Absolute frequency of loan words within one lexico-semantic group
2. total amount of loan words per language

→ quantitative loan word profile

„However, different languages display a remarkable degree of consistency which regard to which fields are more or less affected by borrowing. While there are certainly cross-linguistic differences, most languages tend to borrow more words into similar fields, and the same fields turn up again as the ones most resistant to borrowing. (Tadmor 2009: 64)

**frequently affected by loans:**

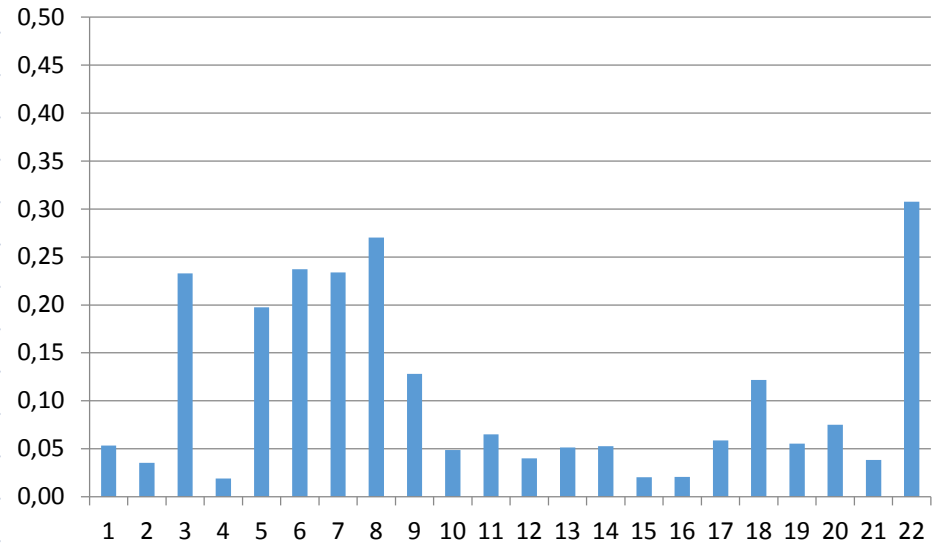
1. Religion and belief
2. Clothing and grooming
3. House/living

***less affected by loans:***

1. The body
2. Spatial relation
3. Sense perception
4. Function words with deictic function

## Case study: Loan Words in Slovene (South Slavic, Indo-European)

Nr.	lexico-semantic group	Nr. of meanings	abs. f.
1	The physical world	75	4
2	Kinship	82	3
3	Animals	96	27
4	The body	157	3
5	Food and drink	81	16
6	Clothing and grooming	59	14
7	The house	48	11
8	Agriculture and vegetation	74	20
9	Basic actions and technology	78	10
10	Motion	82	4
11	Possession	46	3
12	Spatial Relation	75	3
13	Quantity	38	2
14	Time	57	3
15	Sense perception	49	1
16	Emotions and values	48	1
17	Cognition	51	3
18	Speech and Language	41	5
19	Social and political relations	36	2
20	Warfare and hunting	40	3
21	Law	26	1
22	Religion and belief	26	8
Sum		1460	147



rel. frequency of loanwords in lexico-semantic groups

- language specific behaviour
- 10% loan words in basic vocabulary

<http://homepage.univie.ac.at/emmerich.kelih/>

<http://lissl.univie.ac.at/bibliography/>

## LISL - Loanwords in South Slavic Languages - A usage-based and synergetic approach



▶ [Loanwords in South Slavic Languages](#)

Suche 🔍

[Quicklinks](#)

[Project description](#)

[Basic vocabulary](#)

[Bibliography](#)

[Conferences](#)

[Publications](#)

[Resources](#)

Sie sind hier: ▶ ... ▶ [Bibliography](#)

Bibliographies concerning **Loanword Research**, **Loanwords in Slavic Languages**, **Quantitative Linguistics Approach**, **Project-related Bibliography**, as well as Loanwords in **Proto-Slavic/Common Slavic/Old Church Slavonic**, **Bosnian/Croatian/Serbian**, **Bulgarian**, **Macedonian**, and **Slovene** are currently available for download.

Please keep in mind that the bibliographies are still under construction, hence do not claim to be exhaustive.

Please contact [lissl.slawistik@univie.ac.at](mailto:lissl.slawistik@univie.ac.at) for further information, comments, or suggestions.

### Bibliography

[General Bibliography](#)

[Bosnian / Croatian / Serbian](#)

[Bulgarian](#)

[Macedonian](#)

[Slovene](#)

### Kontakt

Assoz. Prof. Mag. Dr. Emmerich Kelih,  
Privatdoz.

Institut für Slawistik

Universität Wien

Spitalgasse 2, Hof 3

A-1090 Wien

#### Web

T: +43-1-4277-428 10

F: +43-1-4277-8 428 10

[emmerich.kelih@univie.ac.at](mailto:emmerich.kelih@univie.ac.at)

Table 1: Basic structure of a lemma in the core vocabulary: Schematic representation of a database entry

to cook	<b>semantic field 5</b> Food and drink	<b>4. time of borrowing</b> Proto-Slavic: 1 older period – Middle ages: 2 up to standardization: 3 during standardization: 4 after standardization: 5	<b>7. stylistically marked</b> 7.1. neutral: yes / no 7.2. pejorative: yes / no 7.3. archaic: yes / no 7.4. standard language: yes / no 7.5. colloquial language: yes / no 7.6. technical language: yes / no
	<b>translation/equivalent</b> <i>kuhati -am v. impf.</i> 'to prepare (food) by the use of heat'	<b>5. polysemy</b> yes / no (1) 'getting a new product (jam, schnapps, lime etc.) by the use of heat' (2) 'to plan something secretly or insidiously'	
	<b>1. synonymy</b> yes / no (if yes: <i>variti</i> → subentry)	<b>6. morphological productivity</b> <i>kuhar/kuharica</i> <i>kuhalnik, kuhalnica,</i> <i>kuhinja,</i> { <i>do-, s-, iz-, na-, po-, pre-, pri-,</i> <i>raz-, s-, u-, v-, za-</i> } <i>kuhati,</i> <i>kuhan, kuhalen,</i> No. of part of speech: 4 (frequency: high: 3 middle: 2 low: 1)	<b>8. part of an idiomatic expression</b> yes / no (1) <i>rdeč kot kuhan rak</i> (2) <i>kuhan in pečen</i>
	<b>2. category</b> 2.1. no evidence for borrowing 2.2. clearly borrowed 2.3. unknown/unclear status 2.4. calque: yes / no 2.5. neologism: yes / no 2.6. luxury loan: yes ( <i>*variti</i> ) / no 2.7. necessary loan: yes / no 2.8. migratory loan: yes / no		
	<b>3. donor language(s)</b> Old High German Latin		<b>9. frequency in corpora</b> high: 3 middle: 2 low: 1

**Hvala za vašo pozornost!**

## References (selection)

### Etymological dictionaries

Étimologičeskij slovar' slavjanskich jazykov (1974): praslavjanskij leksičeskij fond (/ Rossijskaja Akademija Nauk, Institut Russkogo Jazyka. Otv. red.: O. N. Trubačev. - Moskva: Nauka (bis Bd. 17: Akademija Nauk SSSR.

Georgiev, Vladimir; Račeva, Maria et al., Bălgarski etimologičen rečnik, Sofia: BAN, 1971 (t. I), 1979 (t. II) 1986 (t. III), Sofia: Marin Drinov, 1995 (t. IV), 1999 (t. V), 2002 (t. VI)

Skok, Petar (1971-1973): ERHSJ (Bd. I-III) = Skok, Petar (1971–1973): Etimologijski rječnik hrvatskoga ili srpskoga jezika. Zagreb: JAZU. Zagreb: JAZU.

Snoj, Marko (1997): Slovenski etimološki slovar. Ljubljana: Založba Mladinska Knjiga.

Rejzek, Jiří (2002): Český etymologický slovník, Praha: SLON, 2002.

Vasmer, Max (1953ff): *Russisches etymologisches Wörterbuch*. Heidelberg: Winter.

### Basic vocabulary

Carlton, Terence R. (1991): Introduction to the phonological history of the Slavic Languages. Columbus, Ohio: Slavica.

Kelih, Emmerich (2015): Probleme der empirischen Lehnwortforschung: Lehnwörter im Basiswortschatz (Slowenisch) und ein frequenzbasierter Ansatz (Kroatisch). In: Emmerich Kelih, Jürgen Fuchsbauer und Stefan Michael Newerkla (Hg.): Lehnwörter im Slawischen: Empirische und crosslinguistische Perspektiven. Wien u.a.: Peter Lang (Sprach- und Kulturkontakte in Europas Mitte, Studien zur Slawistik und Germanistik, 6), S. 15–46.

Kelih, Emmerich; Garić, Katharina (2016) Lehnwörter im kroatischen Basiswortschatz (Swadesh-Liste) und ein Vergleich Kroatisch – Slowenisch: Eine Pilotstudie. (submitted)

Embleton, Sheila M. (1986): Statistics in historical linguistics. Bochum: Brockmeyer (Quantitative Linguistics, 30).

Hock, Hans Henrich; Joseph, Brian D. (1996): Language history, language change, and language relationship. An introduction to historical and comparative linguistics. Berlin, New York: Mouton De Gruyter (Trends in Linguistics. Studies and Monographs, 93).

Moravcsik, Edith A. (1978): Language Contact. In: Joseph H. Greenberg (Hg.): Universals of human language. Volume 1: Method and Theory.. Stanford: Stanford University Press, S. 93–122.

Matras, Yaron (2007): The borrowability of structural categories. In: Yaron Matras und Jeanette Sakel (Hg.): Grammatical Borrowing in Cross-Linguistic Perspective. Berlin, New York: Mouton De Gruyter (Empirical approaches to language typology, 38), S. 31–73.



### **Basic vocabulary – continued**

- Matras, Yaron; Sakel, Jeanette (2007): Introduction. In: Yaron Matras und Jeanette Sakel (Hg.): *Grammatical Borrowing in Cross-Linguistic Perspective*. Berlin, New York: Mouton De Gruyter (*Empirical approaches to language typology*, 38), S. 1–13.
- Thomason, Sarah Grey; Kaufman, Terrence (1988): *Language contact, creolization, and genetic linguistics*. Berkeley: University of California Press.
- Thomason, Sarah Grey (2001): *Language contact*. Edinburgh: Edinburgh University Press.
- Rabus, Achim (2013): *Die Rolle des Sprachkontaktes für die slavischen (Standard-)Sprachen (unter besonderer Berücksichtigung des inner-slawischen Kontaktes)*. Freiburg: Habilitationsschrift.
- Swadesh, Morris (1952): Lexico-Statistic Dating of Prehistoric Ethnic Contacts. With Special Reference to North American Indians and Eskimos. In: *Proceedings of the American Philosophical Society* 96 (4), S. 452–463.
- Zenner, Eline; Speelman, Dirk; Geeraerts, Dirk (2014): Core vocabulary, borrowability and entrenchment: A usage-based onomasiological approach. In: *Diachronica* 31 (1), S. 74–105.