The heritage of the linguistic work by Ján Horecký in contemporary morphemic research of the Slovak language

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In this paper we analyse two basic problems inspired by two monographs by Ján Horecký, namely Fonológia latinčiny [Phonology of Latin] (1949) and Morfematická štruktúra slovenčiny [Morphematic structure of Slovak] (1964). The results of the statistical research of the phonemic structures in the Slovak language (Sokolová-Genči 2006; Slovník koreňových morfém slovenčiny, hereafter as SKMS, 2005) are compared with the research of 4300 Latin words by Ján Horecký (1949: 92-108). The research of the morphemic-derivational structures follows up the research of the morphemic patterns by Ján Horecký (1964) (see also Ivanová-Genči 2006).

Key words: morphemic research, morphemic-derivational structures, Slovak, Latin, Horecký

1. Morphemic-derivational structures of the monoradix units

1.1 *The types of morphemes in the morphemic-derivational structures*

In the statistical elaboration of the morphemic-derivational structures, we have worked on the differentiation of morphemes through their meaning and position within a unit. The basic elements of morphemic-derivational structures are represented by the segments which are the bearers of meaning, i. e. radix morphemes, derivational morphemes, modification morphemes and grammatical morphemes. The radix (R) morpheme takes up a central position in a unit. Derivational and modification morphemes can be differentiated according to their position in front of or after the radix as either prefixes (P) or suffixes (S); a special type of derivational morpheme realised after a grammatical morpheme is represented as postfixes (Pf). Prefixes as well as postfixes can be realised independently of the radix; thus they represent autonomous prefixal (Ps) or autonomous postfixal (Pfs) morphemes. A special type is represented by the independently realised reflectional derivational morpheme *sa/si*. The symbol « realised within some structures signals the inflective status of a unit. Within the polyradix unit we delimit a connective element, confix (K). Monoradix and polyradix units are elaborated separately, both being analysed on three levels of abstraction, based on the specification of grammatical morphemes.

1.2 *Types of morphemic-derivational structures within monoradix units*

Our paper is focused on presenting results provided by statistical research on the second and third level of abstraction. On the third level of abstraction grammatical morphemes lack categorical information; on the second level of abstraction we work with three categorically determined grammatical morphemes: substantive (GMs), adjectival (GMa) and verbal (GMv) grammatical morphemes. On the third level of abstraction we delimited 82 types of monoradix morphemic-derivational structures which encompass 57 751 units. In the following table we present the ten most frequent types:

Numb.	3rd abstraction		2nd abstraction		
	Freq.:	**Structure:**	**Freq.:**	**Structure:**	**Examples:**
1.	13552	R-S-GM	7017	R-S-GMs	**adapt**-ác:i-*a*, **bab**-k-*a*
			4724	R-S-GMa	**adres**-n-*ý*, **blázn**-iv-*ý*
			1811	R-S-GMv	**blys**-n-ú:*ť*, **d**-áv-a:*ť*
2.	7757	R-S-S-GM	4310	R-S-S-GMs	**husl**-ist-k-*a*, **žobr**-ác-tv-*o*
			3249	R-S-S-GMa	**not**-ár-sk-*y*, **rok**-ov-ac-*í*
			198	R-S-S-GMv	**stup**-ň-ov-a:*ť*, **arch**-iv-ov-a:*ť*
3.	7005	P-R-S-GM	1640	P-R-S-GMs	po-**boč**-k-*a*, pred-**náš**-k-*a*
			1907	P-R-S-GMa	a-**mor**-ál:n-*y*, proti-**vlád**-n-*y*
			3458	P-R-S-GMv	do-**kriv**-k-a:*ť*, pre-**tanc**-ov-a:*ť*
4.	6295	R-GM	4657	R-GMs	**plén**-*um*, **cest**-*o*
			412	R-GMa	**škared**-*ý*, **malígn**-*y*
			1226	R-GMv	**jes**-*ť*, **dup**-a:*ť*
5.	6020	P-R-GM	1256	P-R-GMs	anti-**téz**-*a*, ú-**čes**-*ϕ*
			108	P-R-GMa	bez-**kríd**l-*y*, post-**modern**-*ý*
			4656	P-R-GMv	do-**hrýz**-*ť*, od-**let**-ie:*ť*
6.	3228	P-R-S-S-GM	1776	P-R-S-S-GMs	zá-**vis**-l-osť-*ϕ*, v-**stup**-en-k-*a*
			989	P-R-S-S-GMa	a-**soci**-ál-n-*y*, bez-**mot**-or-ov-*ý*
			463	P-R-S-S-GMv	in-**filt**-r-ov-a:*ť*, o-**chud**-ob-n-i:*ť*
7.	2050	P-R-GM sa/si			za-**nôt**-i:*ť* si, na-**prav**-i:*ť* sa
8.	1626	R-S-S«			**bež**-n-e, **automat**-ic:k-y«
9.	1598	R-S-S-S-GM	938	R-S-S-S-GMs	**cest**-ov-a:teľ-k-*a*, **vod**-n-at-osť-*ϕ*
			644	R-S-S-S-GMa	**bran**-k-ár-sk-*y*, **dier**-k-ov-ac-*í*
			16	R-S-S-S-GMv	**bal**-íč-k-ov-a:*ť*, **profes**-i-on:al-iz:ov-a:*ť*
10.	1055	P-R-S-GM sa/si			za-**žart**-ov-a:*ť* si, prez-**ent**-ov-a:*ť* sa
Total: 50 186 units, i. e. 86,9%					

The statistical elaboration of the morphemic-derivational structures reveals that 27 structures with a frequency > 100 correspond to 56 891 units, that is 98,94%. On the other hand, 55 structures with a frequency < 100 correspond to only 860 units, that is less than 1,1%. 13 types are unique mophematic-derivational structures, while 36 types exhibit rare morphemic-derivational structures with frequencies of less than 10 units.

1.2.1 *Types of morphemic-derivational structures of individual parts of speech*

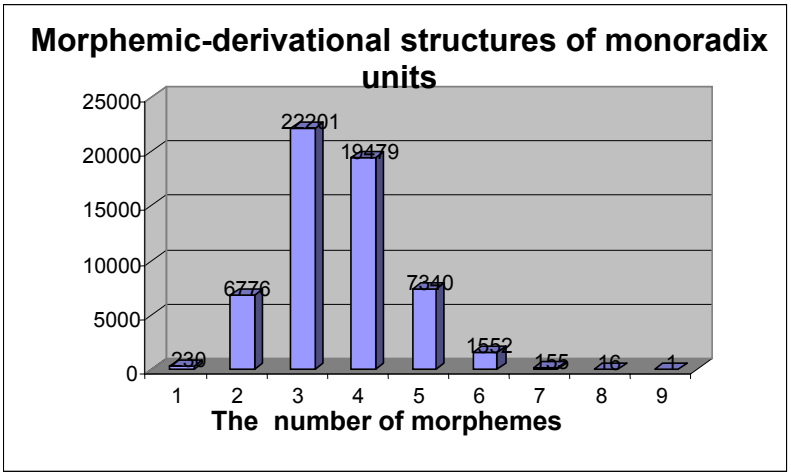
The statistical examination of morphematic-derivational structures is also focused on establishing the prototypical structures of individual parts of speech. In the following table, therefore, we present a survey of the three most frequent morphemic-derivational structures of nouns, adjectives, verbs and adverbs:

nouns:	**adjectives:**	**verbs:**	**adverbs:**
7017 R-S-GMs	4724 R-S-GMa	4655 P-R-GMv	1626 R-S-S«
4657 R-GMs	3249 R-S-S-GMa	3458 P-R-S-GMv	1029 P-R-S-S«
4310 R-S-S-GMs	1907 P-R-S-GMa	2050 P-R-GMv sa/si	755 R-S-S-S«

On the basis of the previous results we can conclude that the prototypical morphemic-derivational structure of nouns is suffixal in nature and that nouns typically form trimorphemic, or bi- and tetramorphemic structures. The prototypical morphemic-derivational structure of adjectives consists of three or four morphemes, involving both prefixal and suffixal patterns. The prototypical morphemic-derivational structure of verbs is generally prefixal with the most frequent structures containing three or four morphemes. Adverbs exhibit typically a combination of three or four suffix morphemes.

1.2.2 *Quantitative variability of the morphemic-derivational structures*

Monoradix units form morphemic-derivational structures comprising from one to nine segments. The largest percentage of monoradix units have trimorphemic (22 201 units, i. e. 38,6%), or tetramorphemic (19 479 units, i. e. 33,8%) structure. On the other hand, the structures comprising eight (16 units or 0,02%) or seven morphemes (155 units or 0,26%) as well as monomorphemic structures (230 units or 0,4%) are rare. Only one unit has a morphemic-derivational structure comprising nine morphemes. The following diagram represents the distribution of the individual quantitative types of these morphemic-derivational structures:



As to the variability of the morphemic-derivational structures, most subtypes are tetramorphemic and hexamorphemic structures (in each case there are 16 subtypes of these

morphemic-derivational structures). In contrast, a nonamorphemic structure is represented by only one subtype, while monomorphemic and octomorphemic structures are represented by two subtypes. Hence it follows that morphemic-derivational structures are of centric character, which means that in those having structures containing from one to nine elements the most frequent are the central patterns (tri-, tetra- and pentamorphemic). These also typically exhibit the greatest variability of subtypes. The structures with fewer numbers of elements (one or two morphemes), as well as the structures with more elements (seven, eight or nine morphemes), typically reveal less variability and correspond to a smaller number of units. In the following table we present a summary of the individual subtypes within the basic quantitative types of structure together with the corresponding number of units.

These results lead to the conclusion that the prototypical morphemic-derivational structure of monoradix units in the Slovak language is tri- or tetramorphemic, as the types with greater or lesser units are either less common or rare.

Types of strucures:	**Number of subtypes:**	**Number of units:**	**Examples:**
monomorphemic:	2	230	**ja**, **blues**«
bimorphemic:	6	6776	**biel**-*y*, na-**vrch**«
trimorphemic:	15	22201	ná-**strah**-*a*, **kroch**-k-a:*ť*
tetramorphemic:	16	19476	**bel**-oš-k-*a*, nad-**hviezd**-n-*y*
pentamorphemic:	14	7340	o-**smut**-n-iev-a:*ť*, **finanč**-n-íč-k-*a*
hexamorphemic:	16	1552	**zel**-en-in-ár-sk-*y*, do-**vol**-e:n-k-ov-a:*ť*
heptamorphemic:	10	155	vý-**ši**-v-k-ár-k-*a*, po-u-**ží**-v-a:teľ-sk-*ý*
octamorphemic:	2	16	pri-s-**ťah**-ov-a:l-ec-k-*ý*, s-pro-**stred**-k-ov-a:teľ-k-*a*
nonamorphemic:	1	1	z-u-**ži**-t-k-ov-a:teľ:n-osť-ϕ

1.2.3 *Morphotactic combinatory rules in the structures*

The individual morphemic-derivational structures are formed on the basis of morphotactic combinatory rules. In monoradix units, the radix morpheme occupies the central position. The independent realisation of a radix without any other morphemes is typical for two structures, the first one is the morphemic-derivational structure R, that is delimited within suppletive pronominal radixes (**ja**, **my**, **ty**, **vy**); the second one is the morphemic-derivational structure R« (226 units), that is characteristic for borrowed indeclinates (**milieu**«, **niveau**«, **nóbl**«) and native adverbal, pronominal and numeral indeclinates (**preč**«, **ináč**«, **päť**«).

Dependent derivational or modification prefixal morphemes occur in the position in front of the radix either singly or in combination. On examination, 22 138 units (38,3 %) within 20 structures (e.g., do-**bi**-*ť*, pa-**rož**-*ie*, a-**mor**-ál:n-*y*) have one prefixal morpheme in front of the radix; 109 adverb units (0,18%) within 9 structures have one independent prefix morpheme in front of the radix (napr. na **betón**«, do **belas**-a«, na **hlad**-k-o«); the combination of two prefix morphemes is typical of 2136 units (3,7%) within 18 structures (e.g., nad-vý-**rob**-*a*, po-do-**lie**-v-a:*ť*, bez-vý-**chod**-isk-ov-*ý*); in ten units within four structures, dependent and independent prefixal morphemes combine (e.g., na ne-po-**zn**-a:n-ie«, od ne-**pamät**-i«, na

za-**plak**-a:n-ie«); and the combination of three prefixal morphemes is characteristic for 50 units (0,08%) within nine structures (e.g., po-roz-pre-**stier**-a:*ť*, z-ne-u-**ži**-teľ:n-*ý*, ne-z-od-**poved**-n-osť-*ϕ*).

In the position after the radix, derivational or modification suffixal morphemes both appear. In this regard, 23 466 units (40,6%) within 18 structures have one suffixal morpheme in the position after the radix (e.g., **dám**-sk-*y*, **balzam**-ov-a:*ť*, **baret**-k-*a*); the combination of two suffixal morphemes is characteristic of 14 451 units (25%) within 18 structures (e.g., **bavln**-ár-sk-*y*, **bes**-n-ot-*a*, **chalup**-ár-č-i:*ť*); three suffixal morphemes combine in the case of 3480 units (6%) within 12 structures (e.g., po-v-**sta**-l-ec-k-*ý*, po-u-**ží**-v-a:teľ-k-*a*, vy-s-**krut**-k-ov-áv-a:*ť*); the combination of four suffixal morphemes is typical for 333 units (0,57%) within six types of structures (e.g., z-u-**ži**-t-k-ov-a:teľ:n-*ý*, s-pro-**stred**-k-ov-a:teľ-ň-*a*, za-**mest**-n-a:n-ec-k-*ý*); and, finally, 11 units (0,01%) within four structures (e.g., **taj**-n-ost-k:ár-sk-y«, **von**-k-ajš-k-ov-osť-*ϕ*, z-u-**ži**-t-k-ov-a:teľ:n-osť-*ϕ*) have the combination of five suffixal morphemes.

The independent reflexive derivational morpheme *sa/si* occurs in 4422 units (7,65%) within 15 structures (e.g., o-ne-**skor**-i:*ť* sa, po-vy-**pyt**-ov-a:*ť* sa, s-prí-**t**-om-ň-ov-a:*ť* sa).

Moreover, both independent or dependent postfixal morphemes may appear after a grammatical morpheme. A postfixal morpheme is delimited in the position after grammatical morpheme (**ak**-*ý*-si, **tak**-*ý*-to); on the basis of analogy it is also delimited in other positions (**kam**-si«, od-**kiaľ**-koľvek«). In our approach, postfixal morphemes are delimited also after such types of morphemes the status of which can be described as a desemantized submorph (nie-**kol'k**-ý-krát«, nie-**kol'k**-ý raz«). It gains the status of an element within morphemic-derivational structures it represents the former grammatical morpheme. Dependent postfixal morphemes are delimited in 83 units (0,14%), especially pronominals, within five structures (e.g., nie-**kol'k**-o-krát«, od-**kiaľ**-si«, **kt**-*o*-koľvek); independent postfixal morphemes are delimited in 38 numeral units (0,06%) within four structures (e.g., **siedm**-y raz«, **štyr**-i-dsať ráz«, **pár** ráz«).

1.3 *Types of morphemic-derivational structures of polyradix units*

On the third level of abstraction we found 219 types of polyradix morphemic-derivational structures which correspond to 6120 units. In the following table we present the ten most frequent types:

The statistical elaboration of the morphemic-derivational structures has proved that 10 structures with a frequency > 100 correspond to 4712 units, that is 76,9%. On the other hand, 119 structures with a frequency < 100 correspond to 1408 units, that is 23%. 100 types have a unique mophemic-derivational structure and up to 177 types have rare morphemic-derivational structure with a frequency of less than 10 units each.

3rd abstraction		**2nd abstraction**		
Freq.:	**Structure:**	**Type of structure:**	**Freq.:**	**Examples:**
1661	R-K-R-S-GM	R-K-R-S-GMs	795	**ant**-o-lóg-i-*a*, **dv**-oj-**bod**-k-*a*
		R-K-R-S-GMa	850	**cukr**-o-**var**-níc:k-*y*, **hom**-o-**fón**-n-*y*
		R-K-R-S-GMv	16	**fil**-o-**zof**-ov-a:*ť*, **spol**-u-**prac**-ov-a:*ť*
828	R-K-R-GM	R-K-R-GMs	651	**aut**-o-**strád**-*a*, **knih**-o-**ved**-*a*
		R-K-R-GMa	166	**dlh**-o-**krídl**-*y*, **zlat**-o-**hned**-*ý*

		R-K-R-GMv	11	**blah**-o-**pria**-*ť*, **cudz**-o-**lož**-i:*ť*
630	R-K-R-S-S-GM	R-K-R-S-S-GMs	378	**agr**-o-**tur**-ist-ik-*a*, **hor**-o-**lez**-ec-tv-*o*
		R-K-R-S-S-Gma	252	**elektr**-o-**inžin**-ier-sk-*y*, **tel**-o-**cvik**-ár-sk-*y*
		R-K-R-S-S-GMv	0	
513	R-R-S-GM	R-R-S-GMs	239	**aku**-**pres**-úr-*a*, **osem**-**vesl**-ic-*a*
		R-R-S-GMa	265	**poly**-**fón**-n-*y*, **viac**-**diel**-n-*y*
		R-R-S-GMv	9	**uni**-**form**-ov-a:*ť*, **fur**-**man**-č-i:*ť*
244	R-R-GM	R-R-GMs	226	**avant**-**gard**-*a*, **pol**-**cest**-*a*
		R-R-GMa	16	**dino**-**saur**-*í*, **sedem**-**hlav**-*ý*
		R-R-GMv	2	**fur**-**man**-i:*ť*, **proti**-**reč**-i:*ť*
234	R-K-R-S-S«			**aut**-o-**nóm**-n-e«, **boh**-a-**bo**:j-n-e«
201	R-S-K-R-S-GM	R-S-K-R-S-GMs	58	**kinem**-at-o-**graf**-i-*a*, **bod**-k-o-**čiar**-k-*a*
		R-S-K-R-S-Gma	142	**srd**-c-e-**lom**-n-*ý*, **karmín**-ov-o-**červ**-en-*ý*
		R-S-K-R-S-GMv	1	**ď'al**-ek-o-**pis**-ov-a:*ť*
171	R-R-S-S-GM	R-R-S-S-GMs	87	**basket**-**bal**-ist-k-*a*, **pol**-**roč**-n-ík-ϕ
		R-R-S-S-GMa	84	**bon**-**viv**-án-sk-*y*, **päť**-bo:j-ár-sk-*y*
		R-R-S-S-GMv	0	
127	R-S-K-R-GM	R-S-K-R-GMs	56	**kult**-ur-o-lóg-ϕ, **veľ**-k-o-**baň**-*a*,
		R-S-K-R-GMa	71	**šir**-ok-o-**plec**-*í*, **med**-ov-o-**žlt**-*ý*
		R-S-K-R-GMv	0	
103	R-S-K-R-S-S-GM	R-S-K-R-S-S-GMs	56	**am**-in-o-**kys**-el-in-*a*, **byl**-in-o-**žr**-av-ec-ϕ
		R-S-K-R-S-S-Gma	47	**gréc**-k-o-**katol**-íc-k-*y*, **drob**-n-o-**sem**-en-n-*ý*
		R-S-K-R-S-S-GMv	0	
Total: 4712 units, t. j. 76, 9%				

2. Phonemic structures of radixes

2.1 *Monophonemic radixes*

Structure of radixes (1)	**Number of PS**	**Number S / L**	**Examples:**
C	1	16 / 0	*č*[1], *d*[2], *j*[2] *k*[1], *n*[1], *m*[2], *n*[1], *j*[1], *n*[2] , *ň*, *r*, *s*[1]
V	1	6 / 2	*a*, *i*, *á*, *é*, *o*, *o*
Total	**2**	**22**	

The Slovak language (S) exhibits both possible combinations, e. g. *č-o*, *č-í*, *a*, *i*, *á-čk-o*, *d-a:ť*; Latin (L) has only vocalic type (Horecký 1949: 92).

2.2 *Biphonemic radixes*

Structure of radixes (2)	**Number of PS**	**Number S / L**	**Examples:**
CV	1	118 / 7	*be*, *bi*, *bu*, *by*, *bá*, *bé*, *bú*, *ce*, *cé*, *de*, *dé*, *di*, *ďia*, *ďie*, *du*, *dze*, *fi*, *fu*, *fŕ*, *mä*
CC	1	84 / 0	*bď*, *br*, *chc*, *cl*, *cť*, *cň*, *čk*, *čp*, *čň*, *čr*, *db*, *dch*, *dl*, *dm*, *dr*, *dv*, *džg*, *fl*, *lk*, *mk*
VC	1	75 / 18	*ah*, *al*, *ech*, *ef*, *in*, *it*, *ob*, *oj*, *ok*, *on*, *uch*, *ár*, *ér*, *ét*, *íl*, *ís*, *ód*, *óp*, *úd*, *úf*
VV	1	2 / 5	*eu*, *eo*
Total	**4**	**279**	

Out of four possible combinations, Slovak has all, e. g. *br-a:ť*, *ži-ť*, *ár-e*, *on-a*, *kl-y*, Latin lacks the type CC (Horecký, *Fonologia*, p. 93). In Slovak CV structures (*sa*, *lia*, *bé*) are more frequent than VC ones (*on*). In the structure CC, the type with the second sonorous consonant CC_s dominates (*br*, *cl*, *cň*, *dl*, *dm*, *dr*, *dv*, *fl*, *hm*, *hn*, *hr*, *kl*, *pn*, *pr*, *sl*, *sm*, *sn*, *sr*, *sň*, *tm*, *tľ*, *tr*, *vr*, *zl*, *zn*, *zv*, *zň*, *zr*, *žr*, *čň*, *čr*); the rare structure with two vowels VV appears in the international units (*eu*, *eo* – *eufória*, *eocén*). The combination of two consonants with the sonorous consonant first (*lk*, *mk*, *rv*, *wc*), with two sonorous consonants (*ml'*, *mr*, *ľn*) or representing other combinations (*bď*, *chc*, *cť*, *db*, *dch*, *džg*, *kd*, *kt*, *pch*, *sp*, *st*, *tk*, *zd*, *šp*, *šť*, *čk*, *čp*, napr. *lkať*, *lživý*, *mlieť*, *chcieť*, *dbať)* are possible, yet rare. The most frequent combination is CV (118), followed by CC (84) and then by VC (75). In the head word, biphonemic radixes and their triphonemic allomorphs can occur, e.g. $*VR^2$ (VER^3, $VIER^3$, VOR).

2.3 *Triphonemic radixes*

Structure of radixes (3)	**Number of PS**	**Number S / L**	**Examples:**
CVC	1	1880 / 79	*čas*, *hit*, *kap*, *klb*, *pik*, *piet*, *bás*, *bek*, *béž*, *dop*, *feš*, *bas*, *riek*, *rieč*, *bas*, *kur*
VCC	1	102 / 5	*agr*, *arg*, *atr*, *aud*, *aul*, *aur*, *aut*, *auť*, *udr*, *uhl*, *unc*, *ubr*, *urg*, *urn*, *urč*, *úst*
CCV	1	62 / 5	*chvie*, *gro*, *hno*, *hre*, *hria*, *hrie*, *hľa*, *hňi*, *hňí*, *kde*, *kdy*, *kre*, *krie*, *kro*, *kry*

CCC	1	20 / 0	*bzd*, *hml*, *mdl*, *mhm*, *mst*, *mzd*, *skl*, *skv*, *skľ*, *stl*, *str*, *tkv*, *zbl*, *škr*, *štv*, *ľsť*
VCV	1	16 / 39	*abbé*, *aku*, *alo*, *ecu*, *ego*, *eko*, *ide*, *idi*, *odi*, *ole*, *uhú*, *ujú*, *uni*, *ári*, *ódi*, *úni*
CVV	1	7 / 29	*fŕŕ*, *krŕ*, *méé*, *neo*, *reo*, *vŕŕ*, *zoo*
Total	**6**		

Out of eight possible combinations, both Slovak and Latin have six combinations, Slovak lacks the combination VVC (L: 2) and Latin lacks the combination CCC (S: 20). Five combinations of consonants and/or vowels which occur in both languages do not have the same incidence except for the type CVC, which is the most frequent in both languages (S: 1880, L: 171, compare Horecký 1949: 93). Whereas in Latin open structures are frequent, in Slovak closed structures dominate. We consider the type CCV open. It realises in native verbs of conjugation type *žuť* (*smia*, *chvie*, *hria*). The type VCV is found in native interjections (*ujú*, *uhú*) and especially in the international units (*uni*, *ári*). The type CVV dominates in interjections and international units (*krŕ*, *méé*, *neo*, *reo*). In the structure CCC (20), the combination with the sonorous consonant in final position dominates (*skl-*, *skľ-*, *skv-*, *stl-*, *str-*, *tkv-*, *škr-*, *štv-*; CC_sC_s *hml-*, *hmľ-*). When the sonorous consonant is in the initial position of the radix, it is *m* (*mst-*, *msť-*, *mzd-*, *ľsť-*; C_sCC_s: *mdl-*, *mdľ-*, *mhm-*) that is dominant. The rarest combination is the type without a sonorous consonant (*bzď-*, *bzd-*). In 62 instances of the dominant combination of two consonants involves the sonorous consonant occuring in final position, when the cluster is initial in the radix (*br-*, *chv-*, *gr-*, *hn-*, *hr-*, *hľ-*, *hň-*, *kr-*, *kv-*, *kľ-*, *-dr*, *-hl*, *-zl*, *-tr*, *-sm*), but in initial position when the cluster is final in the radix (*-lf*, *-nc*, *-rg*, *-rč*, *-vd*, *-vt*, *-vť*, *-rn*, *-vl*, *-vr*). The combination VV is rare (*neo*, *méé*, *krŕ*).

2.4 *Tetraphonemic radixes*

As the following table shows, tetraphonemic radixes in Slovak can be formed of the frequent combinations CCVC (1279) and CVCC (1022), of not frequent combinations VCVC (309) and CVCV (138) and of rare combinations with frequencies ranging from 31 to 1.

Structure of radixes (4)	**Number of PS**	**Number S / L**	**Examples:**
CCVC	1	1279 / 15	*blaž*, *bled*, *blen*, *blik*, *blíz*, *blok*, *bloč*, *blud*, *blús*, *bluf*, *blys*, *bláh*, *brad*
CVCC	1	1022 / 38	*brvn*, *brzd*, *bubl*, *bubn*, *bucht*, *heur*, *joule*, *kauc*, *kauz*, *leit*, *leuk*, *mail*, *taut*
VCVC	1	309 / 79	*ibis*, *ibiš*, *idol*, *idyl*, *igel*, *ihel*, *ihiel*, *iker*, *ikon*, *ilúz*, *iman*, *arog*
CVCV	1	138 / 556	*bedá*, *body*, *buly*, *báči*, *chili*, *chore*, *cupi*, *cupy*, *dada*, *deka*, *detto*, *dubi*
CVVC	1	31 / 28	*chaot*, *chuan*, *cyan*, *diol*, *diur*, *diét*, *feud*, *fial*, *guán*, *hiát*, *hyen*, *jüan*, *koal*,
VCCV	1	19 / 85	*ešte*, *ichty*, *iglu*, *inde*, *intu*, *okre*, *okria*, *okrie*, *ondia*, *osve*, *oxy*
VCCC	1	9 / 1	*altr*, *ampl*, *andr*, *angl*, *astm*, *astr*, *iskr*, *optr*, *ostr*

CCCV	1	7 / 0	*stry*, *strý*, *vždy*, *škvr*, *škvŕ*, *štru*, *štvr*
VVCC, VVCV	2	2 / 1	*aort*; *aero*
Total	**10**	**2816**	

Out of 16 possible combinations, Slovak has ten types; Latin, nine types. Slovak lacks the combination CCVV (L: 10), Latin lacks the combination CCCV (S: 1) and VVCV (S: 1). Even common combinations do not have the same degree of representation. In Slovak the closed combinations CCVC (1279) and CVCC (1022) are dominant, while in Latin the open combinations CVCV (556) and VCCV (85) appear most frequently (compare Horecký 1949: 93).

In the frequently occurring phonemic structures CCVC and CVCC in Slovak, both with two consonants, the combination in initial position of a radix that has the sonorous consonant last dominates (*bl-*, *br-*, *gr-*, *hr-*, *hľ-*, *kr-*, *dr-*, *-hl*, *-zl*, *-tr*, *-sm*); and in the final position of the radix, it is the combination with the sonorous consonant first (*-nk*, *-vc*, *-vč*, *-vk* (*uk*), *-vl* (*ul*), *-vn* (*un*), *-vt* (*ut*), *-vz* (*uz*), *-jt*, *-jl*) which is dominant. The structures with two vowels (*ao*, *ae*, *ua*, *ya*, *iu*, *ié*, *eu*, *ia*, *uá*, *iá*, *ye*, *üa*, *ai*, *io* , *eá*, *ui*, *eo*, *eó)* are rare and are characteristic of borrowed radixes. In the structures with three consonants, VCCC (9) and CCCV (7), it is the combination with the sonorous consonant last that dominates when the cluster is in the initial position of a radix (*str-*, *štr-*, *škv-*, *štv-*). When in the final position of a radix, the cluster C_sCC_s with sonorous consonants in the initial and final positions of the combination is likely (*-ltr*, *-mpl*, *-ndr*, *-ngl),* except for the combinations *-str*, *-skr*, *-stm*, *-ptr*.

2.5 *Pentaphonemic radixes*

Structure of radixes (5)	**Number of PS**	**Number S / L**	**Examples:**
CVCVC	1	1481/760	*super*, *surov*, *sutan*, *suter*, *sutin*, *sylab*, *synod*, *syseľ*, *sínus*, *síťel*, *súťaž*
CCVCC	1	368 / 0	*tlesk*, *tliesk*, *trajl*, *trakc*, *tramp*. *tranz*, *trask*, *trast*, *trend*, *skaut*, *traum*
VCCVC	1	197 / 0	*abdik*, *ableg*, *abrad*, *abraz*, *abráz*, *audit*, *audít*, *eidam*, *eufem*, *eufor*
CCCVC	1	126 / 0	*schvál*, *skrib*, *skriň*, *skrom*, *skrut*, *skrín*, *skľúč*, *smrad*, *smrek*, *smrieč*
CVCCC	1	84 / 0	*tendr*, *text*, *týždň*, *vandľ*, *veksl*, *verkľ*, *verst*, *zajtr*, *šerbľ*, *baux*, *kaukľ*
VCVCC	1	72 / 0	*árend*, *árešt*, *ónyx*, *úšust*, *účasť*, *abort*, *adapt*, *adekv*, *adept*, *adopc*, *adopč*
CVCCV	1	35 / 546	*bešti*, *buklé*, *buržo*, *buržu*, *cingi*, *dante*, *derby*, *fakci*, *fidli*, *forte*, *garde*
CCVCV	1	30 / 140	*klišé*, *krimi*, *promo*, *promó*, *proti*, *prémi*, *préri*, *spele*, *stere*, *trache*, *trivi*
CCVVC	1	15 / 0	*brioš*, *fluid*, *fluor*, *fluór*, *freón*, *griot*, *kloak*, *kreol*, *pleon*,

			pneum, *prior*
CVVCC	1	11 / 0	*deikt*, *georg*, *kiosk*, *koopt*, *neutr*, *nuans*, *point*, *seans*, *teatr*, *zaujm*, *záujm*
VCVCV	1	5 / 0	*apote*, *esero*, *inici*, *ováci*, *ujujú*
	3	**6** / 0	VCCCV: *embry*, *ultra;* CVVCV: *zauja*, *beáni;* VVCVC: *aerob*, *aerób*
Total	**14**	**2430**	

Out of 32 possible combinations, Slovak has fourteen types; Latin, nine. Latin lacks the combinations CCCVC (S: 126), CCVVC (S: 15), VCVCV (S: 5), CVVCV (S: 2), CCCVC (S: 2), VCVVC (S: 1). The common combination CVCVC, that is ideal for combining with affixes (*javor, tabak*), is the most frequent in Slovak (1481) as well as in Latin (760) (see Horecký 1949: 93). Uneven percentual representation between the two languages is typical of the same combinations, e.g. in Slovak CVCCV (1,4%) and CCVCV (1,2%), while in Latin CVCCV (38%) and CCVCV (9,7%) (see Horecký 1949: 93).

In the structures with more consonants, the combination with the sonorous consonant C_s last in the initial position of a radix dominates in what appears to be a tendency towards ascending sonority. On the other hand, in the final position of radixes the combination with the first and last sonorous consonant dominates in what corresponds with a tendency towards descending sonority. In the structures with three consonants in the final position (84) the combination C_sCC_s (*ndr*, *ndľ*, *rkľ*, *jtr*, *rbľ*, *ndľ*, *jdĺ*, *vkľ*, *jzm)* dominates. The structures with two vowels VV is characteristic especially of borrowed radixes: *ae*, *ea*, *eá*, *ei*, *eo*, *eó*, *eu*, *io*, *ió*, *oa*, *oo*, *oi=oe* (*pointa*), *ua*, *ui*, *uo*, *uó*.

2.6 *Hexaphonemic radixes*

Structure of radixes (6)	**N°. of PS**	**Number S / L**	**Examples:**
CVCCVC	1	657 / 675	*bonsaj*, *brmbol*, *brnšlen*, *kaučuk*, *maizen*, *pauper*, *paušál*, *paušal*
CCVCVC	1	263 / 131	*chlácholť*, *chrapač*, *dragún*, *drasel*, *flanel*, *flotil*, *fregat*, *frigid*, *frivol*
CVCVCC	1	256 / 206	*huriavk*, *jogurt*, *kalibr*, *kamufl*, *kanast*, *kapust*, *detail*, *kolaud*, *madeir*
VCVCVC	1	73 / 0	*obojok*, *ocelot*, *okarín*, *omelet*, *opater*, *opovrh*, *oregan*
VCCVCC	1	61 / 16	*absint*, *absolv*, *absurd*, *adjekt*, *adjust*, *advent*, *akcent*, *akcept*, *aplaud*
VCCCVC	1	41 / 18	*emblém*, *enkláv*, *espres*, *esprit*, *estrád*, *excel*, *exces*, *exhib*, *exhum*
CVCVVC	1	33 / 0	*bariér*, *beduín*, *faraón*, *jaguár*, *kaliop*, *kamión*, *kariér*, *kaviár*, *kuloár*
CCVCCC	1	24 / 1	*flajst*, *frustr*, *fľandr*, *grambľ*, *krumpľ*, *kvargľ*, *mľandr*, *prázdn*, *spektr*
CVCVCV	1	23 / 0	*žalúzi*, *cigóri*, *demisi*, *famili*, *homíli*, *hosana*, *lapáli*, *legato*
CCCVCC	1	20 / 0	*skrejp*, *sprost*, *strept*, *strečk*, *striebr*, *strikt*, *stript*, *stronc*,

			strung, *stručn*
CVVCVC:	1	12 / 0	*deutér*, *diorám*, *kaolin*, *koagul*, *kooper*, *teáter*, *toalet*, *zaujím*, *koefic*
VCCVCV	1	11 / 0	*akríbi*, *almázi*, *ambíci*, *ambici*, *entuzi*, *imperi*, *impéri*, *indici*
VCCVVC	1	6 / 110	*alkyón*, *alveol*, *axiom*, *axióm*, *encián*
	3	12 / 0	CCVCCV: *whisky*, *špongi*, *brandy*, *grizly* CCCCVC: *pstruh*, *pstruž*, *pstrúž*, *pštros* CVCCCC: *čerstv*, *dextr*, *lajstr*, *monštr*
	1	3 / 0	CVCCCV: *kántry = country*, *gangli*, *kongru*
	3	6 / 0	VCCCCV: *extra*, *inštru;* VCVCCC: *elektr*, *ilustr* VCVCCV: *onehdy*, *akorde*
	1	1 / 0	CCVVCC: *triumf*
Total	**21**	**1501**	

Out of 64 possible combinations, Slovak has 21 types, while Latin has ten types. Latin lacks the combinations VCVCVC (73), CVCVVC (33) CVCVCV (23), CCCVCC (20); Slovak lacks the combinations CVCCCV (L: 45) and CCCVVC (L: 2). For the common types in both languages the closed structures are dominant: CVCCVC (S: 657/ L: 675; however, in Latin it is proportionally more frequent), CCVCVC (S: 263 / L: 131), and CVCVCC (S: 256 / L: 206), (compare Horecký, *Fonologia*, p. 93). A considerable distinction between the two languages is connected with the type CCVCCV (S: 5 / L: 110).

Exceptionally, Slovak has clusters of four consonants: *rstv*, *xtr*, *jstr*, *nštr*; *pstr-*, *pstr-*, *pstr-*, *pštr-*. The structures with two vowels VV are again typical of borrowed radixes (*ao*, *eá*, *eu*, *io*, *iu*, *oa*, *oo*). In structures with more consonants, the combinations with the sonorous consonant last when in the initial position of a radix and the combinations with the sonorous consonants first and last when in the final position of a radix dominate.

2.7 *Heptaphonemic radixes*

Structure of radixes (7)	**N°. of PS**	**Number S / L**	**Examples:**
CVCVCVC	1	250 / 0	*farizej*, *feferón*, *fenikel*, *fenomén*, *fenomen*, *filagór*, *galamut*, *gilotín*
CVCCVCC	1	91 / 200	*hortenz*, *kognosk*, *kolport*, *kombajn*, *komfort*, *kompakt*, *komparz*
CVCCCVC	1	73 / 50	*komplet*, *komplik*, *komplot*, *kompres*, *komprim*, *kongreg*, *kongres*, *konkláv*
CCVCCVC	1	66 /106	*krištáľ*, *krumpeľ kruškpán*, *kryštál*, *plejbek*, *plejboj*, *predmet*, *prekvap*
VCCVCVC	1	48 / 0	*afrodit*, *aglomer*, *aglutin*, *agremán*, *aksamiet*, *aktiníd*, *aldehyd*, *environ*
CCVCVCC	1	47 / 42	*hromažď*, *klimakt*, *klimax*, *kredenc*, *placent*, *pranost*, *pravítk*, *prefekt*
VCVCCVC	1	20 / 0	*acylpyr*, *alikvot*, *amalgám*, *amalgam*, *anamnéz*, *anekdot*, *apokryf*, *apoštol*

CVCVCCC	1	15 / 0	*cylindr*, *decembr*, *fenestr*, *furunkl*, *kalandr*, *kanistr*, *katastr*, *magistr*
VCCCVCC	1	11 / 0	*excerp*, *exkurz*, *expand*, *expanz*, *expert*, *extern*, *impregn*, *instant*, *inšpekc*
CCCVCVC	1	10 / 15	*sgrafit*, *skrumáž*, *strateg*, *stratég*, *strečok striebor*, *škrupuľ*, *škrupul*
CVCCVCV; VCCCCVC	2	18 / 0	*kalvári*, *kondici*, *konzili*, *konzíli*, *makramé*, *negližé*, *neskafé*, *patrici*; *explod*, *explóz*, *exploz*, *expres*, *extrah*, *extrak*, *extrém*, *inštruk*, *obštruk*
CVCCVVC; VCVCVCC	2	14 / 0	*karfiol*, *tantiém*, *virtuóz*, *virtuoz* , *šampión*, *šampion*; *ametyst*, *anapest*, *apodikt*, *element*, *epileps*, *epilept*, *iredent*
CCVCVVC; CVVCCVC	2	8 / 0	*glaciál*, *precióz*, *staniol* , *štadión*; *diaspór*, *koordin*, *maestos*, *meander*
VCCVCCC	1	5 / 0	*adjunkt*, *ansámbl*, *exempl*, *infarkt*, *orchestr*
CCVCVCV	1	4 / 0	*prelúdi*, *štatari*, *štatári*, *staccato*/*stakato*
VCCCVCV	1	2 / 0	*experi*, *expozé*
	8	8 / 0	CVCVCCV: *katarzi*, VCVVCCC: *oleandr*, VCVVCVC: *aneuryzm* CVCCCCV: *menštru*, CVCVVCC: *biliard*, CVVCVCC: *hyacint* VCCVCCV: *andante*, VCVCVCV: *aleluja*
Total	**27**	**690**	

Whereas 27 types out of 128 possible combinations appear in the Slovak language, only six of them have frequency more than 45 units. In contrast, in Latin we can find only nine possible combinations. The most frequent type in Slovak is represented by a closed structure of seven elements CVCVCVC (250), in which the consonants alternate with vowels; Latin lacks this combination. Out of the structures which occur in both Slovak and Latin, the combinations that dominate are CVCCVCC (S91/L200), CVCCCVC (S73/L50), CCVCCVC (S66/L106) (compare Horecký 1949: 93). In Slovak, they are typical for adopted lexical units with indistinct segmentation.

In other structures the combination with the sonorous consonant last in the initial position of radix and the combination with the first and the last sonorous consonant in the final position dominate. In the central position of rare radixes even the combination of two vowels occurs.

2.8 *Octophonemic radixes*

Octophonemic radixes form 35 types out of 256 possible combinations in Slovak (six in Latin), but only three of them have a frequency of more than 20 units. Octophonemic radixes are characteristic for the highest number of structures, and a great number of rare structures (16 phonemic structures have only one representative, four phonemic structures have two representatives).

Structure of	**N°.**	**Numbe**	**Examples:**

radixes (8)	**of PS**	**r S / L**	
CVCVCCVC	1	73 / 0	*charakter*, *cholester*, *cylinder*, *december*, *dikobraz*, *domestik*, *dyzenter*
CVCCVCVC	1	64 / 0	*handicap*, *harlekýn*, *hermelín*, *jednoduch*, *karbonát*, *karneval*, *kastanet*
CVCVCVCC	1	37 / 0	*katafalk*, *katakomb*, *katapult*, *labyrint*, *malichern*, *manifest*, *memorand*
CVCCCVCC	1	19 / 0	*dištrikt*, *panghart*, *perspekt*, *pingpong*, *reštring*, *substanc*, *tajbrejk*
CCVCVCVC	1	16 / 0	*klarinet*, *krinolín*, *krokodíl*, *priemysel*, *privileg*, *promenád*, *propeler*
VCCVCCVC	1	13 / 0	*albatros*, *ansámbel*, *encyklik*, *impertin*, *interdikt*, *interfer*, *internet*
CVCVCVCV; CVCCVCCC	2	22 / 0	*ceremóni*, *hakybaky*, *harakiri*, *kamikadze*, *kikiriki*, *kikirikí*, *moratóri*; *disjunkc*, *distingv*, *dištinkc*, *konjunkc*, *kontempl*, *menčestr*, *ritbergr*
CCVCCVCC; CCVCCCVC	2	10 / 37 10 / 0	*kvisling*, *platform*, *prospekt*, *tranzist*, *škarnicľ*, *štamperľ*, *štandard*; *planktón*, *pluskvam*, *predstav*, *skulptur*, *transfúz*, *translác*, *transpar*
CVCVCVVC; VCVCVCVC	2	14 / 0	*batalión*, *chameleón*, *hemoroid*, *kolacion*, *marihuan*, *meridián*, *valerián*; *ajatolláh*, *aligátor*, *anabolik*, *anakolút*, *aperitív*, *originál*
VCCVCVCC	1	6 / 0	*algoritm*, *architekt*, *esperant*, *intelekt*, *ustavičn*
	3	9 / 0	CVCCVCCV: *kompendi*, *konzorci*, *sakristi* VCCCVCVC: *esplanád*, *estragón*, *improviz* VCVCCVCC: *anamnest*, *apendix*, *olovrant*
	4	8 / 0	CVCCCCVC: *foxtrot*, *sanskrit*, CVCCCVVC: *pankreas*, *pankreat*; VCCVCVCV: *individu*, *indivídu*, VCVCCCVC: *apartmán*, *apostrof*
	15	15 / 0	CCVCCVVC: *škorpión*, , CCVVCCVC: *preambul*; VCCCVCV: *experi* CVCVCCCC: *demonštr*, CVCVVCVC: *marionet*; VCCVCCCV: *industri* CVVCVCVC: *teodolit*, VCCCCCVC: *angström*, VCCCCVVC: *exploat* VCCCVCCC: *inštinkt*, VCCVCVVC: *obsidián*, VCVCVCCC: *alabastr* VCVCVVCC: *epizeux*, VCVVCCVC: *oleander*, VCVVCVCC: *aneuryzm*
Total	**35**	**316**	

The most frequent type in Slovak, CVCVCCVC (73), is closed and Latin lacks it. Out of the combinations found in both Slovak and Latin, the type CCVCCVCC (S10/L37) is fairly common. Within this group, moreover, the exceptional combination of five consonants occurs: C_sCCCC_s (*angström*).

Octophonemic radixes come into existence by perintegration of the former morphemic borders, which is signalized by indices 8, 7 in SKMS, e. g. *foxtrot*, *dikobraz*, *december*. In dictionaries, the morphemic borders of the former prefixes *dis-*, *kon-*, *trans-*, *inter*, *pro-*, *pred-*, *pre-* are signalized by the square brackets ([DIS]JUNKC, [KON]JUNKC, [TRANS], [INTER]DIKT, [PRO]SPEKT, [PRED]STAV, [PRE]AMBUL); in computer elaboration they have been skipped because they fulfil other functions, e.g. *ajatolláh*, *angström*, *menčestr*, *ritbergr*.

2.9 *Nonaphonemic, decaphonemic and undecaphonemic radixes*

These types of radixes are typical of a number of rare structures. Since Ján Horecký does not excerpt them, we will not analyse them in this paper. Their most frequent structures have only eight representatives.

Radixes with polyphonemic structure are often proprial, e.g. *hviezdoslav*, *neandertál*, *biedermeier*, *volkswagen*, *matuzalem*, *charleston*, *menčester*, *dekameron*, or perintergrated, e.g. *zašantroč*, *extravag*, *[kon]zervatór*, *[inter]dikt*, *[inter]rupc*, *[inter]rupč [pro]miskue*, *[pro]fylax*, *[pro]fylakt*, *[ne]okrôchan*, *[inter]mezz*, *[pro]zreteľn*, *[pro]zreteľň*, *[pere]strojk*, *[ex]tempore*.

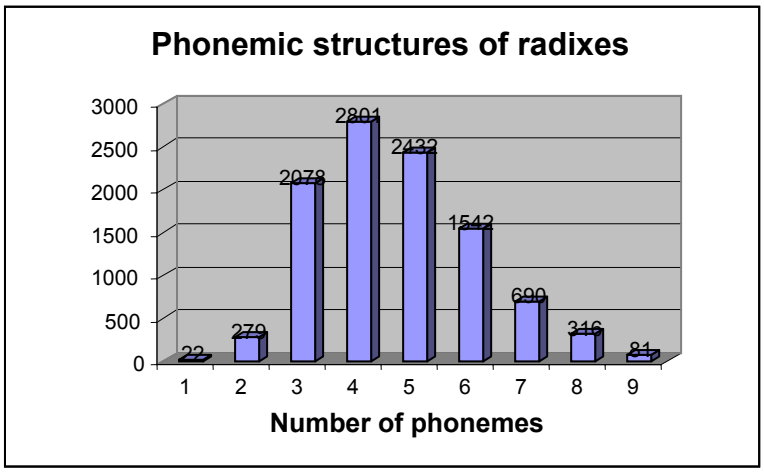
3. Relationship of frequency, the number of phonemes and open versus close structures of the phonemic types

According to J. Horecký (1949), the proportion of vowels and consonants in the phonemic structures of Latin radixes is V: 22,7% to C: 77,3%, in Slovak it is V: 35,7% to C: 64,3%.

Typical structure of radix in the Slovak language	**Number:**	**%**	**Typical structure of radix in the Latin language**	**Number**	**%**
CVC	1880	18,3	CVCVC	760	17,8
CVCVC	1481	14,5	CVCCVC	675	15,7
CCVC	1279	12,5	CVCV	556	12,9
CVCC	1022	9,99	CVCCV	546	12,7
CVCCVC	657	6,4	CVCVCC	206	4,8
CCVCC	368	3,6	CVCCVCC	200	4,7
VCVC	309	3,01	CCVCV	140	3,3
CCVCVC	263	2,7	CCVCVC	131	3,0
CVCVCC	256	2,5	VCCVVC	110	2,6
CVCVCVC	250	2,5	CCVCCVC	106	2,5
Total	**7765 out of 10 251 = 75,7%**			**3430 out of 4300 = 79,8%**	

Since the ten most frequent structures in Slovak represent 75,7% out of the total number and the ten most frequent structures in Latin represent 79,8%, they can be considered as typical for the given languages.

The 10,251 examined radixes form 165 structures comprising from one to eleven phonemes. The most frequent structures are those which are closed with consonants, e. g. CVC, CVCVC, CCVC, CVCC, CVCVCVC, CCVCVC.



The higher the number of phonemes in the phonemic structure with more than six elements is, the lower is their occurrence. At the same time, the higher the number of phonemes, the greater is the heterogenous nature of the structures, since, for example, eight elements produce 317 radixes representing 35 different structures.

Except for the open structures (VCCCVCVCV, VCCCV), low frequency is also connected with the occurrence of hiatus vowels (VCCVCCVV, VV) or with the occurrence of four consonants (CCCC). Three consonants are also rather rare: CCCVC (126); VCCCVC (9). Open phonemic structures occur in types CCV (even in native radixes), VCV (in international units), CVV (in interjections and international units). Radixes with phonemic structures having more than six elements are often perintegrated (compare the former morphemic borders in *zašantroč* ([za]šantr[oč] and **komplement** [kom]ple[ment]). This involves segments that are usually delimited, such as *-ment (*e.g. *department*, *temperament*, [establišment] or *-ent (*e.g., *transparent*, *transcendent)*.

4. Conclusions

The findings of this paper together with the results of previously existing research (Horecký 1949, 1964.; Sawicka 1974; Sabol 1979) can help to display the natural relations of the Slovak language from the perspective of its typology.

Research into the morphemic-derivational structures of Slovak clearly shows that monoradix units form 82 structures on the highest level of the abstraction, whereas polyradix units form 216 structures. This distinction can be explained on the basis of the facts that polyradix units not only have typical morphemic structure with their higher number of morphemes, but also that, at the same time, many polyradix units have unique morphemic-

derivational structure. The prototypical morphemic-derivational structure of monoradix units in the Slovak language is tri- or tetramorphemic, the types with eight or nine morphemes as well as monomorphemic structures are rare.

The prototypical radix in the Slovak language is an unbound radix without allomorphs, varies among three, four or five phonemes, and bears one meaning, e. g. *dom*, *javor*. It displays a closed phonemic structure compatible with the most frequent types of prefixal morphemes either ending with vowels or being just vocalic (*po-, vy-, za-, pre-, na-, ne-, o-, u-, do-, pri-, de-*), as well as with the most frequent type of the suffixal morphemes beginning with a vowel *(-ov-, -osť-, -áv-/-av-, -ík-/-ik-, -an-, -i-, -ec-, -ác-/-ac-, -it-, -ár-/-iar-/-ar-, -ok-, -ist-, -ic-, -ot-, -izm-, -iev-, -isk-, -eň-, -or-, -úv-, -ák-/-ak-/-iak-, -yň-, -at-/-át-, -en*). Closed phonemic structures are suitable for connections with grammatical morphemes (typically vocalic or vocal-consonantic).

References:

IVANOVÁ, Martina, GENČI, Ján. 2006. Afixy a morfematicko-derivačné štruktúry lexém. In *Morfematický výskum slovenčiny* (*možnosti jeho štatistického, elektronického a didaktického spracovania*). Prešov: Filozofická fakulta Prešovskej univerzity v Prešove, 2006.

HORECKÝ, Ján. 1949. *Fonologia latinčiny*. Bratislava: Slovenská akadémia vied a umení, 1949, pp. 92-109.

HORECKÝ, Ján. 1964. *Morfematická štruktúra slovenčiny*. Bratislava: Vydavateľstvo SAV, 1964.

SABOL, Ján. 1979. Konsonanticko-vokalické zloženie morfém v spisovnej slovenčine. In *Jazykovedný časopis*, 1979, vol. 30, pp. 120-133.

SAWICKA, Irena. 1974. *Struktura grup spółgłoskowych w językach słowiańskich*. Wrocław: Polska Akademia Nauk, 1974.

SOKOLOVÁ, Miloslava. 1999. Teoretické zásady morfematického spracovania slovenčiny. In *Morfematický slovník slovenčiny*. Prešov: Náuka, 1999, pp. 9-56.

SOKOLOVÁ, Miloslava, OLOŠTIAK, Martin, IVANOVÁ, Martina et. al. 2005. *Slovník koreňových morfém slovenčiny*. Prešov: Filozofická fakulta Prešovskej univerzity v Prešove, 2005.

SOKOLOVÁ, Miloslava. 2006. Morfematika vo vyučovaní slovenského jazyka na vysokých školách. In *Morfematický výskum slovenčiny* (*možnosti jeho štatistického, elektronického a didaktického spracovania*). Prešov: Filozofická fakulta Prešovskej univerzity v Prešove, 2006.

SOKOLOVÁ, Miloslava, GENČI, Ján. 2006. Štatistické spracovanie radixov, ich alomorf a variantov. In *Morfematický výskum slovenčiny* (*možnosti jeho štatistického, elektronického a didaktického spracovania*). Prešov: Filozofická fakulta Prešovskej univerzity v Prešove, 2006.

SOKOLOVÁ, Miloslava, GENČI, Ján. 2006. Fonematické štruktúry radixov. In *Morfematický výskum slovenčiny* (*možnosti jeho štatistického, elektronického a didaktického spracovania*). Prešov: Filozofická fakulta Prešovskej univerzity v Prešove, 2006.

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