THE SIZE OF WORD ASSOCIATIVE STRUCTURES
IN ENGLISH AND LITHUANIAN

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I. Introduction

Word associative structures are constituent parts of the mental lexicon. They do not directly indicate speech generation or speech perception, but they influence those processes. Firstly, the mental lexicon is the potential basis, without which the strategies of the choise and usage of lexical units are impossible. Secondly, word associative structures, the strength of links within them may render speech generation and sense perception easier or encumber it. For example, V. Andrievskaya [1971, III–116] has shown that strong syntagmatic links are conducive to speech production.

That is why one of the psycholinguistic problems, bearing upon the methodology of teaching/learning languages, is the degree and character of coincidence and diversity in the word associative structures of languages. There exist universal features in the associative structures of words of differents languages, but there are also considerable disparities depending upon the character of the language, as "... different languages may require different organization of the mental lexicon" [Aitchison, 1987, 204].

The article reflects the results of the quantitative analysis of the Lithuanian and English word associative structures. This analysis was carried out with two objectives in view:

I. To establish the sizes of the word associative structures in English and Lithuanian and carry out the overall comparison.

2. To find out whether the size of the associative structure is a haphazard phenomenon, or there is some kind of regularity in it: a/ to answer the question whether the same words in English and Lithuanian have larger or, conversely, smaller associative structures; b/ if the answer to the previous question is positive, to establish what kind of words have larger associative structures, and what kind of words have smaller associatvie structures.

II. Method

It is common knowledge that the main method of establishing word associative structures is a free verbal association experiment. Though the method has its weaknesses, it is still one of the most reliable ways. It is important that the level of norms be achieved in the experiment. Writing on

this issue, A. Leontyev [1977, 5–16] maintains that the data of 1000 subjects give grounds for formulating the norms which are a source of linguistic and psychological information. The status of the norm allows to disregard individual differences / if the purposes of investigation do not require that/, and to consider the associative structures of words as representative of the language investigated.

In English, the Minnesota Word Association Norms acquired by W. A. Russel and J. J. Jenkins [1970, 9–38] were used. In Lithuanian – the Lithuanian word association norms acquired by S. Steponavičienė [1986, 14–112]. In both the free verbal association experiments the G. Kent – A. Rosanoff 100 word list was used. In both the experiments the subjects were students of different specialities, both male and female, 1008 subjects in the Englisch experiment, 1000 in its Lithuanian counterpart. Thus, the experiments were carried out according to the same method. There is twenty years' difference in the time of the experiments. But it is important when we look into concrete lexemes-associates as they may reflect social processes / anyway, they would reflect different social realities even at the same time/. But twenty years' difference in time is notssential when looking into the types of association, their variety, the size of associative structures etc., that is the qualities of associative structures reflecting universal features of linguistic peculiarities.

The sizes of the associative structures of words, both in English and Lithuanian, were established by way of counting the number of different words-associates to each word-stimulus. The average size of the word associative structure in English, and the average size of the word associative structure in Lithuanian were calculated.

In order to find out whether the same words had larger /or, conversely, smaller/ associative structures in English and Lithuanian, the method of rank was applied. The words in English were ordered in ranks beginning with the largest associative structure and ending with the smallest one. The same was done with the words in Lithuanian. Then the computer analysis of the correlation of the two lists was carried out.

As the correlation appeared to be significant, the analysis of the nature of the lexemes in the first and second halves of the English and Lithuanian rank lists was performed.

III. Results

The count of the sizes of word associative structures in English has shown that the sizes vary from 260 different associates of the word "trouble" to 41 different associate of the word "dark". The average of the 100 English words is 105 associates.

In Lithuanian the sizes of word associative structures vary from 284 different associates to the word "pyktis" /"anger"/ to 68 different associates to the word "žydėjimas" /"blossom"/.

The average of the 100 Lithuanian words is 147.

Thus the results of the count show that the Lithuanian word associative structures are larger in size than the English ones.

The ranks of the English words and their Lithuanian counterparts according to the size of their associative structures are shown in table 1[1].

T a b l e   1.   **The ranks of G. Kent – A. Rosanoff word list according to the sizes of word associative structures in English and Lithuanian.**

N	The English word and its Lithuanian counterpart	The ranks according to the size of the word associative structure	
		In English	In Lithuanian
1	2	3	4
1	Afraid – baisu	5	12
2	Anger – pyktis	3	1
3	Baby – kūdikis	30	33
4	Bath – vonia	86	83
5	Beautiful – graži	15	64
6	Bed – lova	67	88
7	Bible – biblija	70	45
8	Bitter – kartus	62	82
9	Black – juodas	79	20
10	Blossom – žydėjimas	95	100
11	Blue – mėlynas	40	89
12	Boy – berniukas	76	7
13	Bread – duona	96	86
14	Butter – sviestas	84	93
15	Butterfly – peteliškė	47	56
16	Cabbage – kopūstas	63	80
17	Carpet – kilimas	58	47
18	Chair – kėdė	81	85
19	Cheese – sūris	43	97

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[1] In cases where the semantic coincidence of the words is not full the approximated translation was used.

1	2	3	4
20	Child – vaikas	16	17
21	Citizen – pilietis	21	9
22	City – miestas	60	51
23	Cold – šaltas	78	72
24	Comfort – patogumas	8	16
25	Command – komanduoti	6	14
26	Cottage – vasarnamis	32	23
27	Dark – tamsi	100	94
28	Deep – gilus	85	70
29	Doctor – daktaras	31	26
30	Dream – sapnas	22	46
31	Eagle – erelis	48	39
32	Earth – žemė	17	49
33	Eating – valgymas	49	18
34	Foot – koja	52	34
35	Fruit – vaisius	87	92
36	Girl – mergaitė	50	11
37	Green – žalias	45	61
38	Hammer – plaktukas	82	62
39	Hand – ranka	54	22
40	Hard – kietas	72	66
41	Head – galva	25	43
42	Health – sveikata	23	31
43	Heavy – sunkus	29	60
44	High – aukštas	64	77
45	House – namas	13	27
46	Hungry – alkanas	34	76
47	Joy – džiaugsmas	18	58
48	Justice – teisingumas	38	2
49	King – karalius	51	15
50	Lamp – lempa	93	68
51	Light – šviesus	61	57
52	Lion – liūtas	24	36
53	Long – ilgas	37	41
54	Loud – garsus	65	32
55	Man – žmogus	88	3
56	Memory – atmintis	4	38
57	Moon – mėnulis	36	69

1	2	3	4
58	Mountain – kalnas	35	35
59	Music – muzika	12	48
60	Mutton – aviena	94	71
61	Needle – adata	90	95
62	Ocean – vandenynas	73	75
63	Priest – kunigas	56	8
64	Quiet – tylus	57	24
65	Red – raudonas	44	63
66	Religion – religija	26	4
67	River – upė	39	74
68	Rough – šiurkštus	9	28
69	Salt – druska	71	90
70	Scissors – žirklės	98	79
71	Sheep – avis	10	52
72	Short – žemas	77	87
73	Sickness – liga	80	59
74	Sleep – miegoti	41	98
75	Slow – lėtas	59	30
76	Smooth – lygus	33	42
77	Soft – minkštas	46	55
78	Soldier – kareivis	20	10
79	Sour – rūgštus	97	99
80	Spider – voras	74	37
81	Square – aikštė	27	50
82	Stem – kamienas	83	73
83	Stomach – skrandis	55	67
84	Stove – krosnis	91	91
85	Street – gatvė	11	54
86	Sweet – saldus	68	96
87	Swift – greitas	53	65
88	Table – stalas	99	84
89	Tief – vagis	14	6
90	Thirsty – ištroškęs	92	78
91	Tobacco – tabakas	89	44
92	Trouble – nemalonumai	1	13
93	Whiskey – degtinė	19	53
94	Whistle – švilpti	42	21
95	White – baltas	75	25
96	Window – langas	66	81
97	Wish – norėti	7	40
98	Woman – moteris	69	19
99	Working – darbas	2	5
100	Yellow – geltonas	28	29

Using table I, the computer analysis of the correlation between the ranks of the words according to the sizes of their associative structures in English and Lithuanian we done. The correlation coeficient was found to be 0,55.

This shows that the relation between the ranks of words in English and Lithuanian is sufficiently strong. The same words in English and Lithuanian tend to have larger or, conversely, smaller associative structures.

Next the amount of identical lexemes between the 50 higher rank words in English and Lithuanian was counted. It was found to be 34, which constitutes 68 per cent of the lexemes. Conversely, the same amount of coincidences /34/ and non-coincidences /16/ appears among the 50 lower-rank words in English and Lithuanian.

The study of the nature of the words having larger associative structures both in English and Lithuanian in comparison with the nature of the words having smaller associative structures in the respective languages revealed the following tendency: words of more abstract nature tend to have larger associative structures, whereas words of more concrete nature tend to have smaller associative structures.

Thus, the following Lithuanian words rank high according to the size of their associative structures: pyktis, teisingumas, žmogus, religija, darbas, pilietis, baisu, nemalonumai, patogumas, komanduoti etc. /anger, justice, man, religion, working, citizen, afraid, trouble, comfort, command etc./. The following English words rank high according to the size of their associative structures: trouble, working, anger, memory, afraid, command, comfort, music, joy, citizen etc.

The following Lithuanian words rank low according to the size of their associative structures: rūgštus, sūris, saldus, adata, sviestas, krosnis, druska, lova, duona, kėdė, stalas, vonia, langas, kopūstas, žirklės etc. /sour, cheese, sweet, needle, butter, stove, salt, bed, bread, chair, table, bath, window, cabbage, scissors etc./. The following English words rank low according to the size of their associative structures: table, scissors, sour, bread, mutton, lamp, stove, needle, tobacco, bath, butter, stem, hammer, chair etc.

IV. Conclusions

The word associative structures in English are larger than the word associative structures of the corresponding Lithuanian words. Further analysis is necessary to reveal the causes of this discrepancy.

The same words both in English and Lithuanian tend to have larger or, conversely, smaller associative structures. The study of the nature of words having larger or smaller associative structures reveals the tendency: words

of abstract nature tend to have larger associative structures, words of concrete nature tend to have smaller associative structures.

These conclusions have direct bearing upon the methodology of teaching/learning English and Lithuanian.

Reziumė

Buvo tiriamas anglų ir lietuvių kalbų žodžių asociacinių struktūrų dydis. Naudojant tą pačią tyrimo metodiką gauti laisvųjų žodžių asociacijų eksperimento duomenys.

Nustatyta, kad anglų kalbos žodžių asociacinės struktūros yra mažesnės nei lietuvių kalbos žodžių atitikmenų asociacinės struktūros.

Anglų ir lietuvių kalbų žodžių rangų eilių pagal asociacinės struktūros dydį koreliacija (koeficientas 0,55) rodo tendenciją: tie patys anglų ir lietuvių kalbų žodžiai turi didesnes arba atitinkamai mažesnes asociacines struktūras.

Žodžių pobūdžio analizė rodo, kad tiek anlgų, tiek lietuvių kalbos didesnės asociacinės struktūros žodžiai turi labiau abstraktų pobūdį, o mažesnės asociacinės struktūros žodžiai – labiau konkretų pobūdį.

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Vilniaus pedagoginio universiteto   Įteikta 1993 m.
Anglų kalbos katedra