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ANALYSIS OF MACRO-, MICRO- AND MEDIOSTRUCTURES IN SPORTS DICTIONARIES

The aim in this research was to analyse the convenience sample comprised of 87 mono-, bi- and multilingual sports dictionaries in terms of their macro-, micro- and mediostructures. The results showed that an alphabetical organisation of the lemmas prevailed rather than a systematic (i.e. thematic) arrangement, and it was the predominant choice in monolingual dictionaries. Most dictionaries in the sample had a complex macrostructure. This macrostructural complexity appeared to be inversely proportional to the number of languages in the terminological reference work – namely, the more languages included in a dictionary, the lower its macrostructural complexity. Further, the definition article structure format – be it with or without any supplementary information – was the most frequent of all the article structures and was by far the most recurrent in monolingual dictionaries. A translation equivalent in a target language as the only component of an article was a dominant article structure format in multilingual dictionaries. In general, the most commonly included grammatical data were on word class and the number in nouns, whereas additional information included in articles varied from diatechnical labels, different kinds of restrictions in terms of usage, historic backgrounds, etymology, the first use of terms, etc. Ultimately, the cross-referencing system was most frequently applied in monolingual dictionaries.

1. Introduction

The increasing development of the language for specific purposes (LSP) realm led to an escalating body of research into its many aspects, terminological reference works being one of them (Bergenholtz 1994,

1995, 2012; Bergholtz–Tarp–Wiegand 1998; Bergholtz–Nielsen 2006; Bergholtz–Tarp 2010; Fuertes–Olivera–Nielsen 2011; Fuertes–Olivera–Tarp 2014; Nielsen 2018; Tarp 2000). As for the variety of topics addressed, research was done into either one or simultaneously more than one structural component in mono-, bi- and multilingual terminological reference works. Mihaljević (1994) focused on the microstructure, and Flinz (2011) and Mihindou (2004) on both macro- and microstructural features of monolingual dictionaries. While Giacomini's (2015) focal point was on the macrostructure of bilingual dictionaries, Fuertes–Olivera and Velasco–Sacristán (2001), Karpinska (2018) and Kazakova, Kraevskaya and Frik (2019) targeted both the macro- and microstructural facets of bilingual dictionaries. Zagórska (2017) studied the macro- and microstructure of multilingual dictionaries, and Araúz, Benítez and Hernández (2008) spotlighted simultaneously the macro- and microstructure in both mono- and multilingual dictionaries. Nielsen (1994) looked simultaneously into the macro-, medio- and microstructures in bilingual dictionaries, but in his scientific output he also inquired into the mediostructure exclusively in, for example, bilingual dictionaries (Nielsen 1999).

Overall, the macrostructure of dictionaries has been scrutinized in terms of various principles, for instance, with reference to the order of entries, i.e. lexical units (alphabetical arrangement, systematic/thematic arrangement) (cf. Bergholtz–Tarp 1995:15) or concerning front and back matter (Nielsen 1990:51). Thus, among other things, Nielsen posits that the macrostructure consisting of two components – a preface and the actual list of the lemmas, i.e. the lemma stock or lemma aggregate (cf. Nielsen 1990:50) – may be regarded as simple, whereas those macrostructures that add at least one additional macrostructural component to these two components (e.g. an appendix) may be regarded as complex (Nielsen 1990:52–55).

The microstructure of a dictionary pertains to the internal arrangement and contents of a dictionary article (Šimić 2017:103). The process of structuring dictionary articles must be specified in advance and on the basis of meticulously set criteria to achieve a high level of consistency through a terminological reference work (Petrović 1999:171). In past research this microstructural facet of dictionaries, i.e. the structure of information in dictionary articles, was studied in terms of multifarious issues, e.g. treatment of a lexical item (Mihindou 2004), polysemous entries (Al-Ajmi 2002), types of information (Fata 2010:90) among many others. As for dictionary mediostructure, researchers conceptualize it as a cross-referencing system done by means of a reference entry, the reference relation be-

ing established between the reference entry on the one hand and the reference address on the other (Gouws–Prinsloo 1998:19). Various criteria such as semantics-related ones, grammar-related ones, etc. (Petrović 2002:132) may be applied in the cross-referencing system. Nielsen (2008:183) distinguishes between various types of cross-references, for instance, cross-references within articles, cross-references from one article to another, cross-references from articles to outer texts or vice versa, cross-references to places outside the dictionary and so on. Ultimately, cross-references may serve various purposes, depending on the dictionary's function (Nielsen 1999). As for the field of study, the dictionaries of legal terms (Karpinska 2018; Nielsen 1994), accounting (Bergenholtz 2012; Fuertes-Olivera–Nielsen 2011), economics (Fuertes-Olivera–Velasco–Sacristán 2001; Konieczna-Serafin 2018) and business (Fuertes-Olivera–Arribas-Baño 2008:19–43, Chapter 2: The macrostructure, mediostructure and access structure of business dictionaries), but also sport (Milić 2015) seem to have attracted the interest of researchers in terms of the dictionaries' structure analysis.

2. Methods

The aim in this research was to analyse the convenience sample comprised of 87 mono-, bi- and multilingual sports dictionaries in terms of their macro-, micro- and mediostructures. The basic criterion of including the cases in the sample was whether or not they contained the word *dictionary* (German *Wörterbuch*; Spanish *diccionario*; French *dictionnaire*; etc.) in their names. Secondly, if the notion of a publication being a dictionary was referred to by the word *term(s)* (i.e. its counterparts in other languages) in the title of a terminological reference work, then such cases were also included in the sample, provided that the inspection of the structure of each of these publications unequivocally proved it to be a dictionary. Further, of the total number of publications, seven contained the word *lexicon* in their name and since their structure was not different from the structure of some other publications including the word *dictionary* in their names, they too were included in the sample¹. Eventually and for the sake of a simpler presentation, the term *dictionary* was opted for as a common denominator for all publications included in the sample. Additionally, for simplicity's sake the term *sports* was used in a broad meaning covering

¹ For reference to the research into various conceptualizations of terminological reference works – a term used by Mihaljević (1986, 1988:87) and referred to as *lexical resources* by Araúz, Benítez and Hernández (2008) – and different names used to designate them see also Dziemianko (2010), Hartmann and James (1998:69), Hartmann (2005:195), Medelyan, Witten, Divoli and Broekstra (2013:260), etc.

both the actual sports and sports sciences (anatomy, physiology, biomechanics, etc.), but also the theory of training and in addition the science of exercise.

The convenience sample was comprised of: a) printed dictionaries accessible in the Centre for Library Information and Publication Activities of the Faculty of Kinesiology, the University of Zagreb, b) printed dictionaries from private collections, c) printed dictionaries whose online preview in a digital form has been approved by a copyright owner (e.g. a publisher) and whose preview was sufficient for the collection of data necessary for this analysis, and d) dictionaries in the Portable Document Format (PDF) available on web sites of research institutions. All the dictionaries were published between 1949 and 2017. As for the number of languages used in the dictionaries, they were categorized into mono-, bi- and multilingual (three or more languages). The three types of dictionaries were then cross-tabulated with their macro-, micro- and mediostructure categories to display the joint frequency distributions.

The macrostructure of dictionaries was scrutinized both with regard to the principle order of entries (alphabetical *versus* systematic/thematic) and with regard to the macrostructural complexity. Following Nielsen's macrostructural complexity categorization in terms of the number of components, i.e. two macrostructural components constituting a simple macrostructure, the two-component margin was selected for the identification of the macrostructural complexity levels ranging from 1 (*simple macrostructure* – one and two macrostructural components), 2 (*low macrostructural complexity* – three and four macrostructural components), 3 (*medium macrostructural complexity* – five and six macrostructural components) to 4 (*high macrostructural complexity* – seven and eight macrostructural components), whereas the last category (5 – *very high macrostructural complexity*) was comprised of all cases containing more than eight macrostructural components.

The microstructure analysis was concerned with the structure of information within the articles. The inspection of dictionaries in terms of the microstructure of dictionary articles was done at random, not by surveying each dictionary page by page in its total volume. Namely, the aim was to collect and display *possible* categories of article structures, so that subsequently the presented results are a manifestation of observed tendencies. The reasoning behind such a methodology lies in the assumption that exact numbers in this respect would not provide any additional relevant data. In this paper the term *entry* has been used to refer to the *entry head*, i.e. a lexical unit as a member of the list of lexical entries. The term *article*

was used to designate the aggregate comprised of an entry and any other text – translation equivalent(s), definition, cross-references pointing to synonyms, etc. Further, the term *lexical unit* was also used to refer to both single- and multiword units as entry heads.

Finally, the mediostructure scanning appertained to the inclusion of any possible type of cross-references in the dictionary articles.

3. Results and discussion

Since the analysis by language was not in the focus of this paper, a survey of languages is presented here for the sole purpose of providing an overview that served as a compelling disposition and reference point in the overall analysis. Regardless of the type of dictionary (mono-, bi- or multilingual), English was by far the most frequent language in the dictionaries (75 cases) included in the sample, followed by French, German, Russian, Croatian and Spanish (Table 1).

Table 1. Incidence of languages across dictionaries

LANGUAGE	COUNT	PERCENT
English	75	86.21
French	31	35.63
German	27	31.03
Russian	17	19.54
Croatian	16	18.39
Spanish	15	17.24
Czech	2	2.30
Italian	2	2.30
Serbian	2	2.30
Slovene	2	2.30
Chinese	1	1.15
Hungarian	1	1.15
Latvian	1	1.15
Portuguese	1	1.15
Turkish	1	1.15

Note. The incidence shown per row refers to the total incidence of each language occurring either individually (across 47 monolingual dictionaries) or when in combination with other languages (across 40 bi- and multilingual dictionaries)

Although the incidence of other languages in the dictionaries from the sample was significantly lower, the total list points in all likelihood to a tendency of compiling and organizing the terminology of sports in a variety of languages, which might presumably be the result of the global character and the omnipresence of this domain throughout history.

3.1. The macrostructure

The analysis of the macrostructure of dictionaries included in the sample was two-fold. As evidenced by the results displayed in Table 2, the alphabetical order of entries was more dominant than the systematic, i.e. thematic arrangement ($n = 74$; 85% and $n = 13$; 15%, respectively). Monolingual dictionaries opted mostly ($n = 40$; 54.1%) for the alphabetical order of lexical units although the incidence of such an arrangement was also rather high in multilingual dictionaries ($n = 28$; 37.8%). Apropos the systematic, i.e. thematic arrangement alone, it seemed to be somewhat more frequently preferred ($n = 7$; 53.8%) in mono- rather than in multi- and bilingual dictionaries. The systematic/thematic ordering – e.g. as into groups or genera (Mihindou 2004:132) – varied in type across the dictionaries, as an illustration, according to the sport (if a dictionary was comprised of terms from various sports) (cf. Ujlaki Šubić 2010), according to the groups of sports (cf. Cox 1999), according to an athlete's name and various sports (cf. Seidler–Pariante 1963), according to the language (cf. Yildirim 2006), etc. To illustrate, in Ujlaki Šubić's (2010) dictionary, the terms were arranged into lexical items common in all sports, and then alphabetically by the sport (e.g. terms from archery, athletics, badminton, baseball, etc.) and alphabetically within the sport.

Table 2. Ordering of entries

	ORDERING OF ENTRIES	MONO.	BI.	MULTI.	ROW TOTALS
Count	Alphabetical	40	6	28	74
Column Percent		85.1%	75.0%	87.5%	
Row Percent		54.1%	8.1%	37.8%	
Total Percent		46.0%	6.9%	32.1%	85.0%

Count	Systematic/ thematic	7	2	4	13
Column Percent		14.9%	25.0%	12.5%	
Row Percent		53.8%	15.4%	30.8%	
Total Percent		8.1%	2.3%	4.6%	15.0%
Count	All groups	47	8	32	87

Legend. MONO. – monolingual. BI. – bilingual. MULTI. – multilingual

Secondly, to introduce the analysis of the dictionaries' macrostructural complexity, the macrostructure of dictionaries was analysed in terms of the number of front and back matter compounds (Table 3). The first outcome in this respect was that the number of front matter components ranged from zero to nine, whereas the number of back matter components was between zero and as many as 24. This created an excellent starting point for the analysis of the front and back matter complexity. The second outcome was the highest incidence of dictionaries (all but one being *multilingual* terminological works) consisting of one front matter component, the list of entries as middle matter and two ($n = 13$; 14.9%) and four ($n = 11$; 12.6%) back matter components. What must be taken into account to interpret the yielded incidence correctly is the fact that 12 out of the total of 13 dictionaries with the 1-□-2 structure were a series of dictionaries published for the event of the XIV. Summer Universiade held in 1987 in Zagreb (Croatia) and all 11 dictionaries with the 1-□-4 structure were published as a series of works in 1979 for the event of the 1980 Summer Olympic Games held in Moscow. Thus, the high incidence in both cases was a corollary of a sporting event's organization-related circumstances. Data in Table 3 additionally reveal one dictionary to be comprised of only one macrostructural component – the list of entries – and no front or back matter components. The dictionary that contained no front and no back matter – in other words it was comprised of the body of entries only – was the multilingual systematically, i.e. thematically arranged *Slovník – Dictionary – Dictionnaire – Wörterbuch – Dictionario – Словарь* compiled by the International Committee of the European Athletics Championships, edited by V. Trkal and published in Prague in 1978 for the event of the 12th European Athletics Championships.

Further findings are to be compared to Nielsen's (1990:52–53) conceptualization of the simple and complex macrostructures of dictionaries. Two compelling perceptions were that most dictionaries in the sample had a complex macrostructure (more than two macrostructural compounds),

and that the notion of the complex macrostructure was highly diversified. In other words, the only adamant shared feature was exceptional macrostructural intricacy.

Table 3. Counts of the combinations of front and back matter components by dictionary type

NO. OF FRONT AND BACK MATTER COMPONENTS	COUNT	NO. OF FRONT AND BACK MATTER COMPONENTS	COUNT
9-□-24	1	4-□-4	1
8-□-24	1	4-□-3	1
7-□-24	1	4-□-2	3
7-□-18	1	4-□-1	1
7-□-13	1	4-□-0	3
7-□-11	1	3-□-7	1
7-□-3	1	3-□-5	1
7-□-1	1	3-□-3	1
6-□-22	1	3-□-2	2
6-□-14	2	3-□-1	2
6-□-13	2	3-□-0	1
6-□-12	1	2-□-5	2
6-□-11	1	2-□-4	1
6-□-10	1	2-□-2	1
6-□-6	1	2-□-1	7
6-□-4	1	2-□-0	1
5-□-21	1	1-□-9	1
5-□-16	1	1-□-4	11 (12.6%)
5-□-4	1	1-□-2	13 (14.9%)
5-□-2	1	1-□-0	5
5-□-0	2	0-□-9	1
4-□-9	1	0-□-0	1
4-□-6	1		

Legend. □ – lemma list

The dictionary with the most elaborate macrostructure was the monolingual (English) *Historical Dictionary of the Olympic Movement* (2011) by Bill Mallon and Jeroen Heijmans. Apart from three forewords, a preface, the list of acronyms and abbreviations, a chronology of the Olympic

Games, short descriptions of all the Summer Olympic Games and Olympic Winter Games and an introduction (totalling nine front matter components), the dictionary enclosed as many as 22 appendices, a bibliography and a section about the authors, totalling 24 back matter components. It is a comprehensive work extending over 500 pages and containing more than 900 alphabetically arranged entries on various concepts: sports (e.g. jeu de paume – p. 293; synchronized swimming – p. 564), countries (e.g. Taiwan – p. 570), people (e.g. Jordan, Michael Jeffrey (USA_BAS) – p. 295), awards (e.g. Val Barker Award – p. 609), technical elements (e.g. walkover – p. 617), etc. The included cross-references contributed to the entire structural prowess of this dictionary.

Examples of front and back matter components varied considerably from dictionary to dictionary. Apart from the components typically belonging to the front matter – like contents, preface, foreword, introduction, list of acronyms and/or abbreviations used, acknowledgements and/or dedication, etc. – other types of components were also identified: instructions on how to use the dictionary (e.g. in Dickson 2009:xxi–xxiv), sources in the *Acknowledgements and sources* section in Cummings (1949:ix–xiii), etc. Still, some components that were typically included in the front matter by some authors were untypically included in the back matter by others. For instance, the acknowledgements – a component typically included in the front matter – was an element in the back matter in Dickson (2009:959). Apart from some conventional components of the back matter like a bibliography (also labelled *references* or *list of references*), examples of the back matter components were a body mass calculator, a measurement conversion table, anatomical figures, British and international sport federations and resources in the web in the *Dictionary of Sport and Exercise Science* (2006), abbreviations of ruling bodies and administrative organizations in the *Dictionary of Sports and Games Terminology* (Room 2010), as well as indices of terms in monolingual (e.g. in *The Dictionary of Sport* by Cox from 1999) and multilingual dictionaries (the series of dictionaries published for the event of the XIV. Summer Universiade held in 1987 in Zagreb and for the event of the Moscow 1980 Summer Olympic Games), name and subject indices as in *The SAGE Dictionary of Sports Studies* by Malcolm (2008), records according to the sport as in Seidler and Pariente (1963), useful addresses, websites and recommendations for further reading as in Jennett (2008), etc.

The results of the analysis of the macrostructural dictionaries' complexity – assessed in this paper on the ordinal scale anchored at 1 (simple macrostructure) and 5 (very high macrostructural complexity) designed for

the purpose of this research and described in the Methods – revealed several cogent details (Table 4). Firstly, only five (5.7%) dictionaries in the sample had a simple macrostructure, i.e. they were comprised of no more than two macrostructural components one of which was the list of entries. Secondly, these simple-macrostructure dictionaries were almost equally distributed across mono-, bi- and multilingual dictionary groups.

Table 4. Macrostructural complexity by dictionary type

	MACROSTRUCTURAL COMPLEXITY	MONO.	BI.	MULTI.	ROW TOTALS
Count	Simple macrostructure	2	1	2	5
Column Percent		4.3%	12.5%	6.3%	
Row Percent		40.0%	20.0%	40.0%	
Total Percent		2.3%	1.1%	2.3%	5.7%
Count	Low macrostructural complexity	7	1	15	23
Column Percent		14.9%	12.5%	46.8%	
Row Percent		30.4%	4.4%	65.2%	
Total Percent		8.1%	1.1%	17.3%	26.5%
Count	Medium macrostructural complexity	7	4	12	23
Column Percent		14.9%	50.0%	37.5%	
Row Percent		30.4%	17.4%	52.2%	
Total Percent		8.1%	4.6%	13.8%	26.5%
Count	High macrostructural complexity	7	1	1	9
Column Percent		14.9%	12.5%	3.1%	
Row Percent		77.8%	11.1%	11.1%	
Total Percent		8.1%	1.1%	1.1%	10.3%

Count	Very high macrostructural complexity	24	1	2	27
Column Percent		51.0%	12.5%	6.3%	
Row Percent		88.9%	3.7%	7.4%	
Total Percent		27.6%	1.1%	2.3%	31.0%
Count	All groups	47	8	32	87

Legend. MONO. – monolingual. BI. – bilingual. MULTI. – multilingual

The monolingual dictionaries of low macrostructural complexity were of the same number as the monolingual dictionaries of medium macrostructural complexity, and the total frequencies of both low and medium macrostructural complexity dictionaries were only slightly lower than that of dictionaries with a very high macrostructural complexity. According to the dictionary type survey, it is seen that 51% of all monolingual dictionaries (and 37, i.e. 78.7% of the total of 47 monolingual dictionaries were in English) had a very high macrostructural complexity. The frequencies of low, medium and high macrostructural complexity monolingual dictionaries were evenly distributed amounting to almost 15% each. Medium macrostructural complexity was dominant among all the bilingual dictionaries, whereas the multilingual dictionaries predominantly had either a low (n = 15; 46.8%) or a medium (n = 12; 37.5%) macrostructural complexity.

3.2. The microstructure

The yielded results clearly reveal (Table 5) that the definition article structure format either with or without any supplementary information was typically used in as many as 45 monolingual dictionaries. Another telling statistic is the figure of 28 multilingual dictionaries in which the preferred article structure was comprised exclusively of (a) (translation) equivalent(s) in (a) parallel target language(s). Both results correspond to two intelligible facts. The first one is that monolingual dictionaries focused on describing the concept designated by a term, i.e. a lexical unit. Such a find is in congruence with one of two crucial goals of languages for specific purposes – to define as accurately as possible the concepts designated by selected terms. The second find – that of 28 multilingual dictionaries which render translation equivalents of listed lexical units – concurs with the second of the two goals of languages for specific purposes which is, when correlated to other languages, to find in them the best possible translation equivalents (counterparts) of terms under consideration. This pro-

cess is not always easy, and it frequently encounters problems that cannot be overcome. One of them is, for example, the level of equivalence which may vary from absolute, to partial, to zero (cf. Vrbinc–Vrbinc 2017:523) – in the last case the absence of a corresponding concept in another language, and thus also of a corresponding lexical counterpart with the same communicative equivalence. This is typical, for instance, for legal terminology due to dissimilar legal systems in various countries. However, such examples exist in other professions as well.

Table 5. Article structure by type of dictionary

	ARTICLE STRUCTURE	MONO.	BI.	MULTI.	ROW TOTALS
Count		45	-	1	46
Column Percent	Lexical unit + definition (with or without supplementary information)	95.8%	-	3.1%	
Row Percent		97.8%	-	2.2%	
Total Percent		51.8%	-	1.1%	52.9%
Count			-	3	28
Column Percent	Lexical unit + equivalent only	-	37.5%	87.5%	
Row Percent		-	9.7%	90.3%	
Total Percent		-	3.5%	32.2%	35.7%
Count			1	1	-
Column Percent	Lexical unit + definition (with or without supplementary information) or gloss + equivalent	2.1%	12.5%	-	
Row Percent		50.0%	50.0%	-	
Total Percent		1.1%	1.1%	-	2.2%
Count			1	4	3
Column Percent	Lexical unit + equivalent with supplementary information	2.1%	50.0%	9.3%	
Row Percent		12.5%	50.0%	37.5%	
Total Percent		1.1%	4.6%	3.5%	9.2 %
Count		All groups	47	8	32

Legend. MONO. – monolingual. BI. – bilingual. MULTI. – multilingual

Supplementary information was of two types – grammatical and additional. The most frequent type of grammatical information in all types of dictionaries (mono-, bi- and multilingual) was on word class (usually nouns and verbs, and less frequently adjectives) and number in nouns. In the *Dictionary of Sport and Exercise Science* (2006) the plural of nouns was provided in two ways – either as a piece of information before the indication of the word class if a lexical unit is listed in a plural form (Table 6, Example 1, p. 123) or in the form of a note at the end of an article if a lexical unit (in the form of a noun usually from Latin) is listed in the singular (Table 6, Example 2, p. 122). The notion of additional information covered diverse input such as diatechnical labels (cf. Milić 2015:190) designating, for instance, a sport in which a term is typically used, bibliography details, synonymous terms/phrases and abbreviations *not* used as cross-references in a dictionary (i.e. neither synonymous terms/phrases nor full terms can be found as separate lexical units), labels indicating a restricted usage of a lexical unit (e.g. slang, US – American English, informal), etc. The definition of the lexical unit “stooper” (originally written in inverted commas) in Parke Cummings’ monolingual (English) *The Dictionary of Sports* (1949:433) lists a piece of grammatical information – in this case an indication of a word class – of the lexical unit, a diatechnical label (*Horse racing*), a piece of additional information addressing the note on usage restriction (*Slang.*) and the meaning of this lexical unit in the indicated sport (Table 6, Example 3).

Table 6. Examples of articles containing grammatical and/or additional information I.

<p>EXAMPLE 1</p> <p>lats <i>plural noun</i> ▶ latissimus dorsi</p>	<p>EXAMPLE 2</p> <p>Lacuna <i>noun</i> a small hollow or cavity (NOTE: The plural is lacunae.)</p>
<p>EXAMPLE 3</p> <p>“stooper.” <i>n., Slang.</i></p> <p><i>Horse racing.</i> A person who keeps picking up littered paper at a race track, hoping to find a winning ticket that has been discarded by mistake.</p> <p>(The optimism is seldom warranted, but the back muscles are exercised.)</p>	<p>EXAMPLE 4</p> <p>“in irons”</p> <p><i>Nautical.</i> The situation when a sailboat is pointed exactly into the wind and with no way on (i.e., it is motionless), and cannot get off on either tack. Also called “in stays”.</p>

<p>EXAMPLE 5</p> <p>Kicking strap (UK) Line or tackle used to pull the <i>boom</i> down to keep it horizontal on all <i>points of sailing</i>, and in particular to prevent it from lifting on a <i>reach</i> or <i>run</i>. The usual US term is <i>boom vang</i>, q.v.</p>	<p>EXAMPLE 6</p> <p>Moderate gale (US) Near gale (WMO) <i>Beaufort force 7, 28–33 knots</i>.</p>
<p>EXAMPLE 7</p> <p>Dip-pole gybe (US jibe) When <i>gybing</i>, the <i>spinnaker pole</i> is not detached from the mast; the outboard end is disengaged from the original guy or tack, dipped beneath the forestay, and clipped on to the new guy or tack when the boat has gybed.</p>	<p>EXAMPLE 8</p> <p>Actio-Reaction-Prinzip</p> <p>Siehe: Wechselwirkungsgesetz [Physik]</p>

Another piece of additional information in this example is to be found in parentheses at the end of an article. However, it can hardly be said to correspond to the discourse style used in the rest of the text. A further illustration of a piece of additional information is to be found at the end of the article for the lexical unit *stolen base* (Cummings 1949:433) and it reads: “Abbreviation: SB.” Here this piece of information is not regarded as a cross-reference since no such entry as SB to which it might point exists in the dictionary. Still another example from Cummings’ (1949:223) dictionary shows again the usage of a diatechnical label (*Nautical*) (Table 6, Example 4). Cases of labels pointing to restricted usage of lexical units are to be found in Schult’s monolingual *The Sailing Dictionary*² (1992) (Table 6, Example 5, p. 144; Example 6, p. 179; Example 7, p. 76). Examples 5 and 6 contain the label which specifies restricted usage of the lemmas regarding the actual term used in standard varieties of the English language (UK = British English; US = American English). Example 6 contains an additional label also marking the restricted usage, however, this time concerning the usage of a term used by a professional institution (WMO = World Meteorological Organization). Finally, example 7 contains the label demonstrating restricted usage with reference to spelling in one (US = American Eng-

² Translated from *Segler Lexicon* (published in German by Klasing & Co GmbH, Bielefeld) into English, extensively revised by Barbara Webb, revised for the second edition by Jeremy Howard-Williams.

lish) of the two standard varieties of the English language. An illustration of a bilingual dictionary providing an equivalent in a target language as well as a piece of additional information is Schiffer and Mechling's *Wörterbuch Bewegungs- und Trainingswissenschaft. Deutsch – English / English – Deutsch* (2013) in which diatechnical labels – like [Physik] (cf. Schiffer–Mechling 2013:31) (Table 6, Example 8) – are to be found in square brackets.

Grammatical information in the monolingual (English) *The Dickson Dictionary of Baseball* (Dickson 2009) relates to parts of speech, usually nouns and verbs (Table 7, Example 9, p. 33) but also adverbs and adjectives (Table 7, Example 10, p. 247). Illustrations of additional information are the inclusion of the historic background, indication (*hist.*) for archaic or obsolete terms, and etymology (cf. Dickson 2009:xxi–xxiv). An example of an etymology description is to be found for the lexical unit *deke* (p. 249) (Table 7, Example 11). A further example of an additional piece of information – on the first use of a term – in this dictionary also exists for some lexical units (see p. 250) (Table 7, Example 12).

Table 7. Examples of articles containing grammatical and/or additional information II.

<p>EXAMPLE 9</p> <p>attempt 1. <i>n.</i> An effort to steal a base; e.g., “Smith has 26 steals for 47 attempts.” 2. <i>v.</i> To try to steal a base.</p>	<p>EXAMPLE 10</p> <p>deep 1. <i>adv.</i> Far from home plate; [...] 2. <i>adj.</i> Said of that part of the field that is the greatest distance from home plate; [...]</p>
<p>EXAMPLE 11</p> <p>deke 1. Short for <i>decoy</i>, 2. ETYMOLOGY. The term is long established in hockey for pulling the goaltender out of position. It also has a long football application. It began to find wide baseball application by around 1990. 2. To mislead with a decoy sign.</p>	<p>EXAMPLE 12</p> <p>dent the ozone <i>hist.</i> To swing and miss. See also <i>ozone</i>, 2. IST USE. 1909 (<i>Baseball Magazine</i>, December, p. 53; Edward J. Nichols).</p>

Hepp's (1960) multilingual (English, German, Spanish, French, Hungarian and Russian) dictionary of swimming and water polo³ provided

³ Although only two sports were listed in the title – swimming and water polo – the dictionary contained terms from four sports: swimming, fancy swimming, springboard diving and water polo.

– depending on the language – both grammatical information in terms of the gender of nouns and additional information such as the indication of the language in which a term is used (p. 18) (Table 8, Example 13). The previous example shows that in Spanish (*S*) the term may be of masculine (*m*) and feminine (*f*) gender, however, in French, German and Italian it is only of masculine gender, whereas no gender has been specified for Hungarian (*M* → *Magyar*) and Russian, it being the case that Hungarian has no grammatical gender and Russian has three genders applied in the singular only. However, there was no indication of gender for the noun *atléta* and interestingly there was no indication of the word class, i.e. that the term *athlete* is a noun. In some cases this fact has obviously been connoted by the indication of gender (*m, f, n*) (Table 8, Example 13, p. 18) and in some cases this piece of information was omitted for no obvious reason. Still, there were cases when an indication of the word class did exist, regardless of whether the translation equivalents in all parallel target languages were (Table 8, Example 14, p. 18) or were not (Table 8, Example 15, p. 18) – be it noun or verb, respectively – listed. Additionally, no indication of language was to be found for any of the terms in Russian – presumably, it was implied and considered as self-evident that terms written in Cyrillic were words from the Russian language.

Table 8. Examples of articles containing grammatical and/or additional information III.

<p>EXAMPLE 13</p> <p>athlete – <i>S</i> atleta <i>m, f</i> – <i>F</i> athlete <i>m</i> – <i>D</i> Leichtathlet <i>m</i> – <i>I</i> atleta <i>m</i> – <i>M</i> atléta – атлét</p>	<p>EXAMPLE 14</p> <p>Attack <i>n</i>, assault – <i>S</i> ataque <i>m</i> – <i>F</i> assaut <i>m</i>, attaque – <i>D</i> Angriff <i>m</i> – <i>I</i> attacco, assalto – <i>M</i> támadás – atáka</p>
<p>EXAMPLE 15</p> <p>attaquer <i>F</i> attack <i>v</i></p>	<p>EXAMPLE 16</p> <p>átúszás <i>M</i> crossing <i>SW</i></p>
<p>EXAMPLE 17</p> <p>auditorium – <i>S</i> lugar <i>m</i> de los es- pectadores – <i>F</i> gradins <i>m, pl</i>, trib- unes <i>f, pl</i> – <i>D</i> Zuschauerplatz <i>m</i> – <i>I</i> tribune <i>f, pl</i>, gradinate <i>pl</i> per gli spettatori – <i>M</i> nézőter – трибуны <i>f, pl</i></p>	<p>EXAMPLE 18</p> <p>Arbeitspulssumme Die Summe aller Pulse, die während einer Arbeit und in der Erholung-phase über dem Ruheausgangswert liegt. <i>Hollmann</i></p>

Example 16 shows the usage of a diatechnical label (*SW* for swimming) in Hepp’s dictionary (1960:19) as additional information (Table 8) and another piece of grammatical information was a note on number (plural – *pl*) in nouns, as was the case with the term *auditorium* (Table 8, Example 17, p. 19). Cases of diatechnical labels as additional information may be found in other dictionaries as well. For instance, in Anshel et al. (1991:74) the label [pd] in the article for the second meaning listed for the lexical unit *incentive* stands for *sport pedagogy*. In Beyer’s (1987:62) trilingual dictionary the names of the writers authoring certain pieces of text are listed at the end of the corresponding articles (Table 8, Example 18).

3.3. The mediostructure

The dictionaries were also investigated in terms of whether they did or did not contain (absence *versus* presence) any cross-references regardless of their type and frequency. Of the 87 dictionaries cross-references were used in the total of 29 (33.3%) cases, 25 of them (86.2%) being monolingual publications (Table 9). The cross-referencing system was applied in only two bilingual and two multilingual dictionaries. This might point to a conclusion that in these two types of dictionaries more attention was paid to translation equivalents only and less to the system of interconnecting the articles to achieve in such a way the coherence of the whole dictionary structure. It may be presumed that this concatenation is technically more demanding and more difficult to apply in bi- and multilingual dictionaries, which ultimately resulted in avoiding its employment.

Table 9. Absence/presence of cross-references in sports dictionaries

	ABSENCE / PRESENCE OF CROSS-REFERENCES	MONO.	BI.	MULTI.	ROW TOTALS
Count	Cross-references excluded	22	6	30	58
Column Percent		46.8%	75.0%	93.7%	
Row Percent		37.9%	10.4%	51.7%	
Total Percent		25.3%	6.9%	34.5%	66.7%

Count	Cross-references included	25	2	2	29
Column Percent		53.2%	25.0%	6.3%	
Row Percent		86.2%	6.9%	6.9%	
Total Percent		28.7%	2.3%	2.3%	33.3%
Count	All groups	47	8	32	87

Legend. MONO. – monolingual. BI. – bilingual. MULTI. – multilingual

The types of cross-references varied from case to case. In the already mentioned *The Dictionary of Sports* by Parke Cummings (1949) indication of cross-references was mainly done by using the format ‘See’ and ‘which see’ – the latter being a literal translation of the Latin *quod vide* (qv) and written in parentheses. Also, the entries “in irons” (p. 223) and “in stays” (p. 224) are examples of circular cross-references (the former using the ‘Also called’ format to refer to the latter and the latter using the ‘See’ direction to refer to the former) in this terminological reference work. In the monolingual *The Sailing Dictionary* (Schult 1992) several cross-reference modes were drawn on – the abbreviation q.v. (written with periods) was used together with the ‘See’ format, and the cross-reference was also indicated by typesetting the lexical units in italic or by simply linearly listing two lexical units in bold typeset. The practice of linearly listing two synonymous lexical units is evident in the already mentioned article for the lexical unit *moderate gale* from *The Sailing Dictionary* (Schult 1992:186) (Table 6, Example 6).

In the monolingual (English) *Dictionary of the Sport and Exercise Sciences* (Anshel et al. 1991), as explicated in the *Rules of Use* (p. xi) section at its beginning, there were three types of cross-referencing from one article to another: ‘See’, ‘See also’ and ‘Also called’ constructions. ‘Also called’ form listing a synonymous term directs readers to refer to the specified entry which is a less common term from the one in whose article this cross-reference format is used after the definition of a term. The ‘See’ format directs the reader to refer to the entry specified, however, there is no definition of the term, and the ‘See also’ format type refers to another entry for supplemental information. In the work by Anshel et al. (1991:2) the ‘Compare’ direction also appeared in some cases as an additional cross-reference to a term (a lexical unit) connected therewith in one way or another (Table 10, Example 19). In the monolingual (English) *The Dickson Dictionary of Baseball* (Dickson 2009) cross-references for synonymous terms were introduced by the ‘Syn.’ format and were indicated either at the beginning

of a definition in an article or at the end of the whole article. Other types of cross-reference forms were ‘See’, ‘See also’ and ‘Compare’. An example of a bilingual dictionary that included the cross-referencing system was Schiffer and Mechling’s *Wörterbuch Bewegungs- und Trainingswissenschaft. Deutsch – English / English – Deutsch* (2013). Cross-references (more than 880 in the main part of the dictionary – Müller 2014:120) were indicated by ‘Siehe’, i.e. the German equivalent of ‘See’ (Table 10, Example 20, p. 29). A multilingual dictionary that included cross-references was the already mentioned Hepp’s (1960) dictionary of swimming and water polo. In it the cross-references were of two types. The first one was the cross-references directing the readers to refer to another term – such cross-references were of the *see also* (Table 10, Example 21, p. 18) format – with the lowercase *s* in ‘see’ and the whole phrase in italic typeset. The second cross-referencing type was the synonymous references (Table 10, Example 22, p. 36).

Table 10. Examples of cross-references

<p>EXAMPLE 19</p> <p>acquired disability: Disability that occurs after birth through injury, trauma, or illness. Also called <i>adventitious disability</i>. Compare <i>congenital</i>.</p>	<p>EXAMPLE 20</p> <p>Abdominalmaschine Siehe: Bauchmuskeltrainingsmaschine</p>
<p>EXAMPLE 21</p> <p>athlete <i>E see also:</i> sportsman</p>	<p>EXAMPLE 22</p> <p>breast <i>E chest</i>²</p>
<p>EXAMPLE 23</p> <p>lats ▶ latissimus dorsi</p>	<p>EXAMPLE 24</p> <p>herniated disc <i>noun</i> ▶ displaced intervertebral disc</p>
<p>EXAMPLE 25</p> <p>direct free kick <i>noun</i> ▶ free kick</p>	<p>EXAMPLE 26</p> <p>disc <i>noun</i> a flat round structure. ⇨ intervertebral disc</p>

Cross-referencing was also found to be indicated by using various graphical formats, usually arrows of different types. Two examples of the types of arrows used in the already mentioned the *Dictionary of Sport and Exercise Science* (2006) and presented in Table 10 have different functions. The first one is used to point either to a full term (Table 10, Example 23, p. 123) or to a synonymous term where a full definition is provided (Table 10, Example 24, p. 104), but also to refer the reader to a term connect-

ed with the lexical unit in question (Table 10, Example 25, p. 68). Seemingly, the second arrow type was used to guide readers to a term specifically used in the domain under consideration (Table 10, Example 26, p. 68).

4. Conclusion

The research results allow for several concluding remarks. First, an alphabetical organization of entries prevailed over a systematic (i.e. thematic) arrangement preference. The former ordering was the predominant choice in monolingual dictionaries, and this type of data presentation – although not preponderant as was the case in monolingual dictionaries – was a frequent selection in the multilingual ones. As for the thematic arrangement viewed separately, it was somewhat more frequently preferred in mono- than in multi- and bilingual dictionaries. Second, most dictionaries in the sample consisted of more than two macrostructural compounds, i.e. they had a complex macrostructure. This macrostructural complexity was highly disparate and appeared to be inversely proportional to the number of languages in the terminological reference work – it was very high in a half of all the monolingual dictionaries (which were to a great extent in English), medium in the bilingual and the lowest in the multilingual dictionaries.

Further, the definition article structure format with or without any supplementary elements (e.g. grammatical and/or additional information) was the most frequent of all the article structures and was by far the most recurrent in the monolingual dictionaries. A translation equivalent in a target language as the only component of an article was a dominant structure format option in the multilingual dictionaries. In general, the most commonly included grammatical data were on word class – mostly only nouns and verbs were specified in this sense followed significantly less frequently by an indication on adjectives and adverbs – and the number in nouns. Information on the gender of nouns was also one of the recorded choices in dictionaries including languages with a noun gender distinction. Additional information included in articles varied from diatechnical labels, reference to different kinds of restrictions in terms of usage, historic backgrounds, etymology, the first use of terms, etc. Finally, cross-references were not a predominant preference in the language for specific purposes dictionaries. Still, by comparison of dictionary type it was revealed that the cross-referencing system was most frequently applied in the monolingual dictionaries. Presumably, the inclusion of more than one language significantly complicated the incorporation of cross-references, so that eventually most authors opted for their omission.

On the whole, it is hoped that this analysis would encourage research into LSP dictionaries collecting the terminology of other domains, thus ultimately providing a more thorough insight into practices pertaining to this subject matter.

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Analiza makrostrukture, mikrostrukture i mediostrukture u sportskim rječnicima

Sažetak

Cilj je ovoga istraživanja bio analizirati prigodni uzorak od 87 jednojezičnih, dvojezičnih i višejezičnih sportskih rječnika s obzirom na njihovu makrostrukturu, mikrostrukturu i mediostrukturu. Rezultati su pokazali da je abecedna organizacija jezičnih jedinica bila češća od konceptualne (tj. tematske) organizacije, te je takav ustroj bio dominantan u jednojezičnim rječnicima. Većina je rječnika u uzorku imala složenu makrostrukturu. Ta makrostrukturna složenost bila je obratno proporcionalna broju jezika u terminološkim djelima – drugim riječima, što je više jezika bilo uključeno u rječnik, to je njihova makrostrukturna složenost bila manja. Nadalje, definicija je – bez obzira na to je li u rječničkom članku bilo ili nije dodatnih informacija, bila najčešća struktura članka, i to najviše u jednojezičnim rječnicima. Prijevodni ekvivalent u ciljnome jeziku kao jedina sastavnica članka bio je prevladavajuća struktura u višejezičnim rječnicima. Općenito, najučestaliji gramatički podatci bili su oni o vrsti riječi te broju imenica, dok su dodatne informacije u rječničkim člancima uključivale oznake struke, uputnice za različita ograničenja u uporabi naziva, zatim povijesnu podlogu, etimologiju, prvobitnu uporabu naziva itd. U konačnici je sustav uputnica bio najčešći u jednojezičnim rječnicima.

Ključne riječi: makrostruktura, mediostruktura, mikrostruktura, rječnici, sport, strukovni jezik

Keywords: macrostructure, mediostructure, microstructure, dictionaries, sport, language for specific purposes