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Titles of Articles in Human Movement Science Journals

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The role of academic journals is well recognized by the members of scientific community. Consequently, the titles of articles published in them are also of importance since, by reflecting the contents of articles, they consequently mirror the scientific inquiry done in a particular scientific discipline. The aim of our study was to identify possible differences in terms of structure and type of information conveyed in the 654 titles of articles published in two different human movement science journals – *Research Quarterly for Exercise and Sport* and *Kinesiology*. The titles were analysed as regards their structural construction and the type of information that they present to prospective readers. The structural construction categories addressed the total of six groups: nominal group titles, compound titles (subsuming the nominal group/nominal group combinations), full-sentence titles, question titles, compound titles consisting of a nominal group and a question, and compound titles consisting of a nominal group and a full sentence. Additional six groups were formed in terms of information that a title presents to a reader – the actual subject matter of research without any additional information; both the subject matter of research and the information regarding a sample; the subject matter of research complemented by an information on a relation (effect, comparison, influence, difference, etc.) between the phenomena observed; the subject of research supplemented by information both on a relation between the phenomena and on the sample; the subject matter extended by information on statistical method(s) used; and the subject matter accompanied by information both on the statistical method used and on the sample. Pearson chi-square test was used to identify any possible differences between the two journals as regards the structural (grammatical) construction and the type-of-information-conveyed categories of titles. The analysis showed that the titles in the two journals differed both in terms of their grammatical construction as well as in terms of the type of information conveyed. A tentative conclusion is therefore drawn that editorial policy is a decisive factor, although not the only one, both for the structural construction of the titles and for the types of information included in the titles.

Theoretical background

The role of academic journals is highly recognized by academia (Xiao and Smith 2006), and the development of an academic community is reflected in the development and the performance of academic journals (McKercher 2005), thus ultimately reflecting the development of a research field (Cheng/Li/Petrick/O'Leary 2011). A title of a scientific paper denotes its content and consequently mirrors the scientific inquiry done in a particular scientific discipline. Titles are also gateways for data retrieval and a means for gaining insight into scholarly perception.

Titles of research papers are subject to scientific inquiry, be it from the point of view of linguistics, scientometrics, etc. Research in this respect has to date addressed a multitude of topics that brought new insights into the subject matter. The body of existing research could in general be said to address topics such as:

- pragmatic functions of titles from the point of view of various scientific disciplines (Goodman 2000; Haggan 2004; Soler 2007; Wang/Bai 2007);
- informative value of titles assessed in various ways (Yitzhaki 1994, 1997; Goodman/Thacker/Siegel 2001);
- article genre (research or review articles) in relation to the structural construction of titles, but also in relation to various languages (Soler 2007, 2011);
- structural construction—e.g. Haggan (2004) distinguished between three types of titles in this respect: full-sentence, compound and nominal phrase (with or without post-modification), Hyland (2002) researched into the titles written in the form of a question, Hartley (2007a) focused on colonic titles, etc.;
- role of titles (Hartley, 2005);
- type of information that titles convey (Harmon 2009), and many more.

A thorough survey of research into the titles of scientific publications was made, for example, by Sisó (2009) who also dealt with the topic of research articles titles in terms of their being either indicative (also termed *descriptive*) or conclusive (also termed *informative*, *declarative* or *declaratory titles*, as well as *conclusion titles*). The former have a grammatical form of a noun phrase or a compound title, and the latter take the form of a full sentence. Her survey also included a detailed description of research done into the structural construction of titles.

Although, according to Soler (2007) and Anthony (2001), there are no rules in terms of the 'good' writing style of titles, except that they should be clear, scientifically precise, concise, informative and without overgeneralizations, certain non-binding regulations do exist. One of them addresses the structural construction of titles. Usually four types of titles are distinguished in this respect (Soler 2007): nominal construction titles, full-sentence titles (sentences in the form of statements), question construction titles and compound titles, also termed *hanging titles*. Hanging titles usually consist of two parts separated by an appropriate punctuation mark, e.g. a colon or a dash, and are found to be on the rise in scientific writing (Hartley 2005, 2007a; Lewison/Hartley 2005). Some

authors (e.g. Alley 1996) recommend nominal construction titles as a desirable type.

Research results regarding full-sentence titles, however, are inconsistent, i.e. they even point to contradictory conclusions regarding their frequency (compare e.g. Berkenkotter and Huckin 1995 on the one hand, and Haggan 2004 on the other), and are consequently perceived in two opposing ways – some researchers regard them as desirable and proper (e.g. Lindsay 1995), whereas some do not. Hartley (2005) found that full-sentence titles were frequently used in life sciences.

Titles in form of questions are also found to be on the rise (Ball 2009); however, their usage is subject to dispute among scientists, as reported by Sisó (2009). In contrast to Ball's findings, Soler (2007), for example, found that the question titles were not very frequent. The disproportion in results was probably due to the sample size under consideration: whereas Ball's sample consisted of nearly 20 million titles, Soler's sample was comprised of several hundreds of titles. However, although being more and more frequent, this type of titles is still generally disregarded and discouraged by many, scientists and journals alike. Some researchers think they express the yet not completely verified research results, the question marks in titles being considered as signs of the uncertainty of scientific perception obtained. As Ball (2009: 677) says, question marks are used to express "the dubious nature of results", so "the question mark in an article title is therefore an elegant way of publishing vague data and findings on the one hand, and on the other, of remaining unassailable". In his opinion, the consequence of the competitive desire in disciplines such as medicine, life sciences and physics is that some scientists publish their results before their actual scientific confirmation and verification (as a part of the so-called *publish or perish race* (Papatheodorou/Trikalinos/Ioannidis 2008)). However, such an attitude can hardly apply to humanities, e.g. linguistics, since these sciences lack market orientation in this commercial sense. In contrast to Ball (2009), Hyland (2002: 2) expresses a point of view that questions "are used by academic writers to actively engage their readers".

Apart from the quadriform taxonomy of article titles as the above mentioned Soler's (2007), other taxonomies also exist. Busch-Lauer (2000) distinguished between *mono-structure* and *title-subtitle formats* of titles. She further elaborated that the sequencing of syntactic constructions in the latter format varies, e.g. nominal group-nominal group, verbal-clausal constructions, etc. Hartley (2007b, 2008) worked out a fine-grain list of as many as 13 different types of titles, and Jamali and Nikzad (2011) reduced the most common title types to three: *declarative titles*, whose aim is to state the main findings obtained by a particular analysis or to state the conclusions drawn from research results, thus conveying as much information as possible; *descriptive titles*, which actually describe the subject matter of research reported in the article, however, without revealing what the main conclusions might be; *interrogative titles*, which tend to introduce the subject matter by using the question format. Among other things they found that titles with colon tended to be longer than other types of titles and that they received fewer downloads and citations. They also found that titles in form of questions

were, on the one hand, downloaded more; however, they were less cited than declarative and descriptive titles.

Jamali and Nikzad's taxonomy is very similar to the one exemplified by Sisó (2009). The differences are in that Jamali and Nikzad (2011) do not specify grammatical structures of two categories that by their description overlap with the ones by Sisó, although a notion of grammatical structure could be deduced for declarative titles from the examples listed by them. In contrast to Jamali and Nikzad (2011), Sisó (2009) does not propose the third or any further group for that matter, and she concludes that in scientific studies there are too few titles that only aim at attracting the reader's curiosity, so they cannot be considered as an independent variation. However, she does not specify what type of titles is thus implied.

Harmon (2009) also proposed a tri-form taxonomy. However, based on a platform different from the one of Jamali and Nikzad (2011), he introduced a principle that combines grammatical form of a title and information that it conveys. The three title formats are consequently *claim-staking titles*, *problem-setting titles* and *thematic titles*. Regarding the conveyed information, claim-staking titles attempt to capture the major claim to new knowledge. As for their grammatical structure, they contain a *header noun*, labelled by Harmon (2009) also as *nucleus*, which is either pre- or post-modified (or both). He supplements his description of this title format by saying that the best effect is achieved if the header noun expresses the essence of the discovery, i.e. the finding. The information conveyed by problem-setting titles regards the problem to be solved in the research, i.e. the problem that the article actually addresses. Grammatical format of such titles is that of a question. The aim of thematic titles is to introduce the main theme. Their grammatical format is the same as that of claim-staking titles. Thus, the distinction between the first and the third listed group lies in the information that is at readers' disposal – claim-staking titles point to possible conclusions, whereas thematic titles simply "encapsulate the theme". Harmon (2009) further exemplifies some other minor types of titles; however, these do not fit into the principal tri-form taxonomy.

Cook, Beckman and Bordage (2007) regarded the titles to be indicative of what a study is about, i.e. what was done, informative in that they express the message of a study, i.e. what the results show, both or neither. Jacques and Sebire (2009) conducted a research study consisting of miscellaneous factors, i.e. both structural construction- and information-related, and found that the presence of a colon in a title, which consequently means that the title was in the compound form, positively correlated with the number of citations. However, the reference to a country included in a title was negatively correlated with the article's citation rate.

To analyse the article titles, Paiva, Lima and Paiva (2012) also used miscellaneous factors in terms of various categorization aspects and found, contrary to Jacques and Sebire (2009), that compound titles (with either a colon or a hyphen) had a lower number of citations, and so did the titles containing a question mark. As for the information contained in the titles, Paiva, Lima and Paiva (2012) divided the titles into three categories: titles that described the

research methods used, i.e. the research design; titles that described the results, i.e. the conclusions; and titles that they considered as non-classifiable. A higher citation rate was found for the titles describing the results of research than for the titles describing the methods used. As for the indication of a study design in a title, upon analysing the titles in dermatology journals, Ubriani, Smith and Katz (2007) found that most titles did not contain information on this important piece of information.

As for any principles that would prescribe a 'good' writing style of titles of scientific publications in general, the authors agree on only some of them. In other words, there exists no general agreement on what a good title should be like. A common opinion is that titles should fulfil several roles: they should attract readers' attention, they should be informative of the contents they denote and they should be accurate (Hartley 2008: 23, 2012). Each of these three aspects demands elaboration.

It might be incorrectly assumed that attractiveness of titles is primarily the feature of e.g. newspaper headlines, whose aim is to draw the attention of as many prospective readers as possible, thus ultimately aiming at a profit from selling a newspaper or a magazine. Is the aim of the title of a paper published in a scientific journal the same, and if so, what lies behind such reasoning? In the current era of electronic globalization science has overcome an obstacle that limited knowledge dissemination for thousands of years. Results of a scientific inquiry are nowadays accessible to many. However, in the multitude of titles in, for example, research databases, how much chance does an article have to be read if its title does not fulfil one of its functions, and that is to attract a prospective reader? As Hartley (2008: 23) says, there are thousands of articles accompanied by their titles that seek the attention of readers. To be selected for reading, a title must 'catch the eye' and provide accurate information on what the article is about.

Profit, in its commercialized denotation, is not, at least at a first glance, a feature that measures the usefulness of a research paper. However, the benchmarks of utility of scientific research cannot but admit that in some areas science competes for profit on the market. On the other hand, most of the research is aimed at trying to refute the theory on which the scientific discipline in question lies, thus fulfilling the basic aim of science in general, and that is to try to prove, by allowing the possibility of refutation of theories, that paradigm changes are possible and probable.

When one considers various journals, a perception cannot escape the eye that in terms of writing styles, and these also address the titles of articles, journals frequently find themselves in niches. Such niches then start to behave in the same way as a scientific paradigm – time and a critical mass are necessary to change it, and both depend on several factors. The first one is undoubtedly the editing policy of a journal. In an attempt to be as scientific as possible editorial boards of journals try to replicate the attributes of the journals already highly recognized by the scientific community. This also applies to the writing style – if 'scientificity' of published articles can be measured, and scientometrics is trying very hard to find all possible ways to do so, there are several factors that are nowadays

frequently acknowledged as indicators of the 'scientificity' of a text. One of the undisputed factors belongs to the category of linguistic expression. It is already recognized that science has its own language whose features distinguish it from other writing, or speaking for that matter, styles. According to Silić (2006: 43), as for its individual limitations, scientific discourse is markedly objective. Since science relies on logical organization of thought, its contents as well as its expression follow the same, rather strict, logical organization principles (Silić 2006: 43). Silić (2006: 44) further elaborates by saying that the language of science must therefore be objective and that expressive, i.e. subjective, stylistic means might be used only where they are, to a certain extent, allowed. The premier principle reads that the usage of expressive, subjective stylistic means should not be detrimental to the objective and accurate delivery of pieces of information that are a consequence of logical reasoning. Objectivity and accuracy of expression are therefore prioritized.

Research aim

The aim of our research was to identify possible differences in terms of structure and type of information conveyed in the titles of articles published in two different human movement science journals. On the basis of the research findings we tried to conclude about the source of differences among the analysed titles.

Method

Corpus

The corpus was comprised of 654 titles of articles published in two scientific journals – *Research Quarterly for Exercise and Sport* (RQES), published in the USA, and *Kinesiology*, published in Croatia. Their scopes are very similar: they both publish papers addressing topics from human movement science (or kinesiology), and they are both published in the English language.

These two journals were deliberately selected as indicators of the development of scientific inquiry into exercise and sport in two geographically and culturally distant parts of the world. We aimed at drawing conclusions regarding similarities or differences in terms of structural construction of the titles of papers on the one hand, and in terms of the subject matter foci and the type of information provided in the titles on the other.

The journal *Research Quarterly for Exercise and Sport* has been published since 1930 and its domain addresses topic areas such as motor behaviour, measurement, evaluation, psychological influences on motor phenomena, biomechanics, sociocultural aspects of exercise and sport, etc., with the aim of providing a scholarly outlet for knowledge in exercise and sport science (*American Alliance for Health, Physical Education, Recreation and Dance* 2012). Today it is indexed in several relevant databases, among them also in *Current Contents Social & Behavioral Sciences*. The oldest records of this journal's articles in the Web of Science date

back to 1980 and in the database Current Contents to 1996. The impact factor (IF) of the journal ranged from not lower than 0.642 in 1998 to the highest one of 1.490 obtained in the year 2011. Web of Knowledge classifies it, according to the JCR (Journal Citation Report) edition, both into the group of sciences (subject categories: *psychology* and *sport science*) and social sciences (subject category: *hospitality, leisure, sport & tourism*, and *applied psychology*). *SCImago Journal & Country Rank (SCImago Lab)* (SCImago 2007) and SCOPUS categorize this journal under the subject area of *medicine*, and subject category *orthopedics and sports medicine*.

Kinesiology (published since 1971) is a scientific journal that has been acknowledged as an international journal since 1985, and is indexed in several important databases. Since its 40th volume, published in the year 2008, it has also been indexed in Thomson Reuters' indexes and services, e.g. *Science Citation Index Expanded*, *Social Sciences Citation Index*, etc. Prior to the year 1996 it was published only in Croatian (the papers were accompanied by translations of titles and abstracts into English). Between 1996 and 1999 it was published simultaneously in Croatian and English, and from its 32nd volume onwards it has been published only in the English language. It publishes papers that address, within the scope of human movement science, changes in, for example, personality traits and motor abilities and skills occurring due to the influence of programmed processes of physical exercise and taking into account biological, psychological, social, educational, ethical, economics-related, historical and cultural aspects. According to the JCR edition of the Web of Knowledge, it is classified both under sciences (subject categories: *rehabilitation* and *sport science*) and under social sciences (subject category: *rehabilitation*). *SCImago Journal & Country Rank (SCImago Lab)* (SCImago, 2007) and SCOPUS categorize it under the subject area of *health professions* and under the subject category of *physical therapy, sports therapy and rehabilitation*. *Kinesiology* received its first impact factor within the Web of Knowledge in 2010 (0.525) and in the following year its IF was 0.238. Its first SJR factor as used by SCImago (2007) was for the year 2009 (0.119), followed by 0.153 in the year 2010 and 0.182 in 2011.

Procedure

Since *Research Quarterly for Exercise and Sport* publishes over 50 papers (in four issues) per year and *Kinesiology* around 20 papers (in two issues) per year, to make even the number of selected articles, i.e. their titles, the time span of approximately seventeen years was taken into account (1996 to 2012) and the selection was done in the following way. The titles of all articles published in the journal *Kinesiology* between the years 1996 and 2011 (n=327) were taken into account, whereas the titles from the journal *Research Quarterly for Exercise and Sport* were selected from the same time span at random, totalling the same number of titles (n=327) as in the subset of titles extracted from *Kinesiology*. Categorization of articles (whether original scientific papers, preliminary communications,

reviews, etc.) has not been taken into account.

The titles from the two journals were analysed as regards their structural construction and the type of information that they present to prospective readers.

The structural construction categories addressed the four categories as suggested by Soler (2007), i.e. nominal group titles, compound titles (subsuming the nominal group/nominal group combinations), full-sentence titles (either in affirmative or in negative form) and question (full or elliptical) titles, supplemented by two additional categories. The first additional category consisted of titles that were actually compound titles; however, one of their parts was in the form of a nominal group and the other in the form of a question. Such titles were allocated to the group termed *compound nominal group/question titles*. The second additional group contained titles that were comprised of a full sentence (either in affirmative or in negative form) and a nominal group, and were hence termed *compound nominal group/full-sentence titles*. Although not many titles of this type were found, the two previously described categories were intentionally included in the analysis, thus pointing to some newly emerging types of titles. They are sometimes only indicated by the authors, e.g. by Sisó (2009) and Harmon (2009), but we have nevertheless decided to highlight them in our study.

To refer to the type of information that a title offers to a reader, the authors opted for a novel classification. A criterion of the type of information conveyed by a title was also applied by Harmon (2009), however, subsuming categories different from the ones used in this research. Gesuato (2008) also attempted to design categories in terms of the type of information contained in them and the sequence of pieces of information (e.g. *topic – context, topic – method, topic – method + context, general – specific, specific – general*), and the classification in our research was done in a similar way, however, excluding information sequencing and focusing more on elements important in any research, e.g. the actual subject, methods, sample, etc. Subsequently, six groups were formed in terms of information that a title presents to a reader: the actual subject matter of research without any additional information (the *what*); both the subject matter of research and the information regarding the sample (the *what* and the *who*); the subject matter of research complemented by information on the relation (effect, comparison, influence, difference, prediction, congruence, association) between the phenomena observed (the *what* and the *relation*); the subject of research supplemented by information both on the relation between the phenomena and on the sample (the *what*, the *relation* and the *who*); the subject matter extended by information on statistical method(s) used (the *what* and the *how*); and the subject matter accompanied by information both on the statistical method used and on the sample (the *what*, the *how* and the *who*).

Pearson chi-square test was used to identify possible differences between the two journals as regards the structural construction (grammatical) and the type-of-information-conveyed categories of titles.

Results

Structural construction title category

The survey of title types categories for the two journals considered together is presented in Table 1.

Table 1. Absolute (frequencies) and relative (percentages) values of structural construction title categories distributions

TITLE CATEGORY	FREQUENCY	PERCENTAGE
Nominal group title	436	66.7
Full-sentence title	21	3.2
Question title	11	1.7
Compound nominal group / nominal group title	154	23.5
Compound nominal group / question title	26	4.0
Compound nominal group / full-sentence title	6	0.9

Table 1 clearly shows that nominal group titles were the most frequent type of titles in the analysed corpus, followed by compound titles in which each constituent was in the form of a nominal group. The remaining four title type categories amounted to almost 10%. However, what is surprising is that compound titles in which at least one constituent was in the form of a question were more frequent than, for example, simple-structure titles in interrogative form. In other words, a more complex title form appeared to be more in use than a simpler structural construction, although even the latter alone is still subject to the bias regarding the structural construction of titles, e.g. question or full-sentence titles.

When considering the interaction between the two journals and the six structural construction title types (Table 2), a Pearson chi-square test revealed statistically significant differences ($\chi^2=72.959$, $df=5$, $p=.000$).

Table 2. Frequency distributions of structural construction title categories per journal

TITLE CATEGORY	KINESIOLOGY	RQES
Nominal group title	269	167
Full-sentence title	4	17
Question title	4	7
Compound title (nominal group / nominal group)	43	111
Compound nominal group / question title	6	20
Compound nominal group / full-sentence title	1	5

In other words, nominal group titles were significantly more frequent in *Kinesiology* than in *RQES*. Additionally, compound titles were more than two

times more frequent in *RQES* than in *Kinesiology*. An even greater difference was found for the number of full-sentence titles in favour of *RQES* and the titles belonging to the group of compound titles that combine a nominal group with either a question or a full sentence.

Type-of-information-conveyed title category

As for the six groups of titles considered from the perspective of the type of information they convey, the frequency distribution table (Table 3) considering the total sample of titles shows that the greatest number of titles addressed the *what*, i.e. purely the actual subject matter of research, followed by the titles that contained information on both the *what* and the *who*, i.e. on the sample in which the desired attributes were analysed. The third most frequent titles in this respect were those that codified a relation under consideration, these being followed by the titles that add the *who* to the notion of relations investigated. Methods in terms of statistical analysis were not frequently denoted in titles, although their 7-percent incidence could not be regarded as low. Titles adding both the information about applied statistical analysis and the subjects participating in the study to the expressed subject matter seemed to be the least frequent.

Table 3. Absolute (frequencies) and relative (percentages) values of type-of-information-conveyed title categories distributions

TITLE CATEGORY	FREQUENCY	PERCENTAGE
WHAT	277	42.4
WHAT-WHO	139	21.3
WHAT-RELATION	94	14.4
WHAT-RELATION-WHO	80	12.2
WHAT-HOW	50	7.6
WHAT-HOW-WHO	14	2.1

Considering the interaction between the two journals and the six type-of-information-conveyed title types (Table 4), a Pearson chi-square test revealed statistically significant differences ($\chi^2=26.303$, $df=5$, $p=.000$).

Table 4. Frequency distributions of the type-of-information-conveyed title categories per journal

TITLE CATEGORY	KINESIOLOGY	RQES
WHAT	146	131
WHAT-WHO	85	54
WHAT-RELATION	28	66
WHAT-RELATION-WHO	41	39
WHAT-HOW	19	31
WHAT-HOW-WHO	8	6

The titles in *Kinesiology* more frequently added the *who* to the information regarding the subject matter of research, whereas the titles in *RQES* contained information on the actual relation under consideration more often. To be able to quantify the phenomena, and due to the fact that statistical analyses offer a way for gaining insight into the relations of events, statistical methods represent the tools that will serve to infer on significant proceedings in the research field. However, although undoubtedly used in many studies, their explication in the titles, as indicated by the results, is not customary as yet.

Discussion and conclusions

The editorial board of a journal might want the writing styles of articles to conform strictly to the rules of scientific objectivity and accuracy of scientific expression. Aberrations in this respect are not always regarded as desirable for fear that they might distort the image of the 'scientificity' of a journal. However, as science changes, so do the phenomena connected therewith, thus also the style of scientific writing. Editorial boards must therefore show a certain measure of braveness and openness to new winds of change by allowing, to a certain degree, some elements in terms of writing styles that were previously unheard of in the scientific community. Our findings suggest that the 'scientificity' of a research does not deteriorate because of the usage of a somewhat different writing style of titles. A highly respected journal, *RQES*, which has a more than 80-year-long tradition, publishes articles with titles that vary more than the titles in the journal *Kinesiology*. More full-sentence, question and compound titles (in all three varieties) in the American journal are very probably the result of the fact that it is a long-ago established journal and has been open to the inflow of articles from all over the world longer than the journal *Kinesiology*. In the last decades this openness has been the result of the so called visibility and accessibility of the journal through highly respected databases. Scientific recognition and quality are nowadays measured in terms of impact factors of journals, and impact factors are determined on the basis of citation frequency of articles published in a journal. Citation frequency again depends on several factors, such as the importance of the actual research published, the recognition of an author in the scientific community, recognition of a journal, indexing of a journal, etc. *RQES* has been indexed in research databases for a longer time than the journal *Kinesiology*, and has already received more recognition in the scientific community. Ultimately, more authors from all parts of the world send their articles to *RQES* to be peer-reviewed and considered for publication. This fact, due to the diversity of writing styles habitually used in certain areas of the world on the one hand and due to the readiness of the editorial board to allow changes in writing style of titles, might also be said to contribute to the somewhat changing winds in the style of scientific writing.

Nominal group titles have already been found to be the most frequent type of structural (grammatical) construction in scientific writing and the results

of our research complied with this conclusion. However, their number was significantly higher in the journal *Kinesiology* than in the journal *RQES*. Although compound titles have been increasingly present in scientific writing style for approximately more than three decades, nominal group titles had since long ago been dominantly preferred as an appropriate scientific writing style format of titles. Since *Kinesiology* has by far not yet achieved the level of recognition of *RQES* in the world-wide scientific community and since it still strives for wider recognition, we could assume its editorial board opted for title writing style that is unquestioned as regards its appropriateness and acceptability in terms of scientific writing style, thus conforming to a rather strict format, in an attempt to secure the 'scientificity' of texts published in it.

Compound titles, consisting of two nominal groups as constituent parts of the compound, were the next most frequent type of titles in both analysed journals. However, their number in the journal *RQES* was significantly greater than in the journal *Kinesiology*. Such a finding could also be interpreted in terms of previous argumentation. Still, their number in *RQES* being almost three times greater than in *Kinesiology* probably points to the notion of more leeway taken both by the editorial board of *RQES* and by the authors who send their articles for publication consideration in this journal. The latter is regarded in terms of the fact that the authors tend to conform to the writing style of the journal in general, so that the title format need not necessarily be the result of editorial board's intervention, but of the author's adaptation to the habitual title formats in that particular journal.

Compound titles consisting of a nominal group and a question seem to appear more and more frequently. This holds true for both journals under consideration in this analysis, although the number of titles written in this format is greater in *RQES*. Another notion seems to be introduced here—the question format and what it denotes. There are authors who regard the interrogative title format to express uncertainty of results, as well as indecisiveness and inconsistency of thought which, as already said, should be logically organized in scientific inquiry in general, thus also in scientific writing as a means of disseminating newly obtained perceptions. However, in opposition to such an opinion an argumentation could be made that science relies on challenge and questioning of the existing theories, and ultimately the existing scientific paradigms. As Hyland says (2002), academic writing is governed by questioning. Hence, a question format, as a linguistic expression, is only a linguistic means for denoting the very nature of science, and that is inquiry which has its doubts and fears, but which shows that questioning even one's own scientific research footsteps is only natural. Thus the science's garment which sometimes makes it a myth disappears and admits that logical, organized reasoning operates on the principal of asking questions to which answers are sought for. That question format is combined with the most frequent type of title format, the nominal group, might be interpreted as an expression of a structural notion of science in general – substance, i.e. the subject matter, and the dilemma, the challenge, the drive that is connected therewith. Taken into account together with the question-only title format, the results of our research show that, although still not very frequent title formats,

these two title types permeate more and more frequently the writing style of titles, in the case of our research in both journals, somewhat more frequently as regards the journal *RQES*. This again is an evidence of a greater readiness for changes in the writing style by a journal that has a longer tradition and has been recognized by the scientific community for a longer time.

Full-sentence titles, as already said, are termed in different ways by different authors – conclusive, informative, declarative, declaratory or conclusion titles (Sisó 2009). In other words, they include information on the results of research. If that be the case, could such titles be regarded as sufficiently attractive since they directly express the conclusions, so that prospective readers could immediately tell whether the results obtained are of interest for them or not? However, as a structural construction, this title format is generally not frequent.

As for the contents of titles in terms of the informativity of the contents of the whole article, the number of pieces of information and their type in a title naturally depends on the conducted research itself. According to Yitzhaki (2002), it is difficult to say whether the complexity of a paper, i.e. the complexity of research, and ultimately of its length could be said to be associated with the length of a title. However, other factors are in operation as well. To start with, the term *informativity* of a title is a concept that is not always understood in the same way, either by authors or by, for example, editors of particular journals. Thus McGowan and Tugwell (2005: 84) describe the policy regarding the titles format of articles sent for the peer-review process in the *Journal in Clinical Epidemiology*: the authors were instructed to write no-longer-than-fifteen-word titles that are simple declarative statements including the main message of the conclusion and the study design. In 1977 Buxton and Meadows measured the informativity of titles by the number of content words they contained and found that titles in natural sciences were more informative than those in the social sciences. Yitzhaki (1992) found that the titles in social science journals were more informative than the titles in the humanities, whereas the titles of scientific journals (implying the natural sciences) contained a somewhat greater number of words that Yitzhaki (1992) called *significant* words (also termed *substantive words*)— whose list excludes auxiliary verbs, pronouns, articles, prepositions and conjunctions— than the titles in social science journals.

Traditionally, the very substance, the actual topic, the very focus of research is denoted in the title, and that is what the titles in both journals seem to do most frequently. However, since the two journals publish articles connected with human movement science, the piece of information regarding the research sample, i.e. the *who*, seems to be a logical choice to be included in a title. The titles in *Kinesiology* appear to denote the sample more often than the titles in *RQES*, and the explanation might be sought in the tradition of title writing style according to which a title should not be too long (which is an undefined category), but it should be concise. Although the length of titles was not in the focus of this research, a brief overview of the titles analysed in this research shows that the number of pieces of information contained in a title is not necessarily directly proportionate to its length.

However, when it comes to relations between phenomena, and relations imply such associations as correlation, difference, prediction, etc., the fact that human movement science might be said to belong to the so-called nomothetic sciences, meaning that it tries to investigate the regularities of phenomena, is a relevant piece of information. In other words, regularities are the result of causal relations between phenomena under scrutiny in scientific research, so that denoting in the title the relation addressed in the research points not only to one of the main foci of nomothetic sciences in general, i.e. relations between occurrences, but also to the wish for these relations to be emphasized in the title.

Further, the titles in *RQES* seem to pay more attention to expressing how a scientific perception is obtained, i.e. they indicate the statistical method used in a research study. Statistics has nowadays become a tool that enables, with all its limitations taken into account, the inference on the significance of phenomena addressed. Additionally, it can also indicate a relation under consideration—correlations point to the connectedness of phenomena, and factor analysis to the latent structure underlying the analysed aspects. Statistical significance level has nowadays become a standard that is regarded as a limit denoting what does and what does not deserve further attention in terms of its relevance in scientific research. Inferring upon statistical analysis might have its pitfalls, so that, for example, the hypotheses set at the beginning of research must not be overlooked and the influence of their violation on ultimate interpretation should not be ignored (Chen/Zhu 2001). In spite of the fact that, to the authors' knowledge, the body of research within the field of human movement science in Croatia widely relies on statistical methods and inferences connected therewith, methods of data analysis, as well as any other methods (e.g. expert systems), are more frequently expressed in *RQES* than in *Kinesiology*. Such a finding could also be attributed to the tradition of title writing style, but perhaps also to the wish to say more about some other information in the title that an author/authors consider to be more important.

To conclude, we think that the editorial policy is a decisive factor both for the structural construction of article titles formats and for the types of information included in the titles, although some other factors are to be considered as well. Tradition, cultural references, international recognition, influx of articles from various parts of the world and some other factors also determine the design of article titles. Further research could contribute valuable perceptions to the topic addressed in our paper, so that analyses done on a greater number of titles would yield new, more detailed insights in this respect.

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NASLOVI ČLANAKA U KINEZIOLOŠKIM ČASOPISIMA

Akademski časopisi imaju značajnu ulogu u razvoju svake znanstvene discipline. Naslovi su članaka objavljenih u tim časopisima također važni jer, odražavajući sadržaj članaka, odražavaju znanstvena istraživanja unutar znanstvene discipline.

Cilj je istraživanja bio da se na temelju analize provedene na uzorku od 654 naslova članaka iz dva različita kineziološka časopisa – *Research Quarterly for Exercise and Sport* i *Kinesiology*, utvrdi postoje li razlike u strukturi naslova te u vrsti informacije koju naslov pruža potencijalnim čitateljima. Struktura je naslova podrazumijevala šest kategorija: naslovi u obliku nominalne skupine, složeni naslovi (pritom se podrazumijevaju naslovi koji se sastoje od dvije nominalne skupine), naslovi u obliku rečenice (u afirmativnome ili negativnome obliku), naslovi u obliku pitanja, složeni naslovi u kojima je jedan u obliku nominalne skupine, dok je drugi u obliku pitanja te složeni naslovi u kojima je jedan dio u obliku nominalne skupine, a drugi u obliku rečenice. Što se vrste informacije koju naslov pruža potencijalnome čitatelju tiče, naslovi su podijeljeni također u šest kategorija: naslove koji navode predmet istraživanja bez dodatnih informacija (*što*), naslovi koji navode predmet istraživanja i informaciju o uzorku (*što i tko*), naslovi u kojima je informacija o predmetu istraživanju dopunjena informacijom o relaciji (učinak, usporedba, utjecaj, razlika itd.) među promatranim pojavama (*što i relacija*), naslovi u kojima su predmet istraživanja i podatak o promatranome odnosu među pojavama dopunjeni i podatkom o uzorku (*što, relacija i tko*), naslovi koji osim informacije o predmetu istraživanja sadrže i informaciju o statističkoj metodi analize podataka (*što i kako*) te naslovi u kojima se osim podatka o predmetu istraživanja i statističkoj metodi nalazila i informacija o uzorku na kojemu je istraživanje provedeno (*što, kako i tko*).

Za analizu razlika između dva časopisa u strukturi naslova i vrstama informacija koje se u njima nalaze upotrijebljen je hi-kvadrat test. Analiza je pokazala da su se naslovi u dva analizirana časopisa razlikovali i po strukturi i po vrstama informacija koje se u njima nalaze. Stoga se može zaključiti da je uređivačka politika odlučujući, ali ne i jedini, čimbenik i za odabir formata strukture naslova i za odabir informacija koje naslov pruža potencijalnome čitatelju.

Key words: scientific journals, article titles, structural construction, type of information
Ključne riječi: znanstveni časopisi, naslovi članaka, struktura naslova, vrsta informacije