

## Popular Science Texts in the Sphere of Fitness

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**Abstract.** This article focuses on the functional approach to LSP texts studies. An important aspect of this investigation is the way in which terms are distributed in the popular science texts. This research also provides the insight into the structure of the popular science texts as well as into their lexical and terminological design. The author of popular science texts presents the scientific information to non-experts/amateurs taking into accounts the level of their expertise. The author establishes a direct contact with a prospective reader by means of imperative constructions, personal pronouns, rhetorical questions and question-answer constructions.

**Keywords:** popular science text, term, functional approach, author, reader

**Introduction.** In recent decades, LSP studies have been continuously developing. The functional approach in LSP studies has become very effective in identifying the structure of scientific texts as a function of their purpose and content. According to this approach, a term exists in two spheres: fixation, where terms are presented in their ideal conditions of a closed system (in specialised dictionaries, thesauruses), and functioning, where terms are realized among other words, that is they function (in LSP texts) [2, p. 15]. Specialised texts got into the focus of LSP research in the 70s of the last century. Specialised texts occur during either academic or professional communication and their main function is to express and transmit specialised knowledge of a varied level. They exhibit some pragmatic, linguistic and cultural characteristics relevant to the traditions of a given discourse community [7, p. 297]. Texts, as they actually occur, must be the decisive points of departure for language descriptions and, consequently, for LSP descriptions.

The specialised content structured in texts is necessarily synthesised and rearranged in terminologies. This process serves to provide the end user with a satisfactory representation of specialised knowledge which makes it easily accessible and usable for specific purposes [6, p.85]. Different degrees of informative density can be recognised throughout the textual passages. All characteristics and peculiarities of terms can be traced and identified in specialised texts and oral communication of the experts. One cannot study literary language using only the definitions given in the dictionaries as well as terminology cannot be investigated using specialised dictionaries and thesauruses.

The aim of the research is to investigate the structure, terminological and pragmatic characteristics of popular science texts in the sphere of fitness.

**Materials and Methods.** The object of the present research is popular science texts on fitness and their pragmatic, structural and terminological features. The methodology of the work, based on the general scientific methods of induction and deduction, analysis and synthesis, presupposes the employment of pragmatic analysis (to understand communicative and pragmatic intentions of the authors, and to reveal interrelations between the author and the reader) and functional stylistic analysis (to reveal the role of lexical, syntactical and stylistic characteristics of popular science texts in connection with their communicative orientations). The texts

for our research were selected according to the following criteria: chronological limits (as language is constantly changing and developing to secure the needs of communication in the society, we have chosen the texts dating from 2001 to 2015); content-thematic limitations to ensure uniformity and representativeness of the samples (all the texts under study belong to the sphere of fitness); purpose-oriented limitations (allowing to analyze texts at different levels of stratification); the length of texts within 500 notional words.

**Results and Discussions.** Popular science texts represent scientific concepts in “ordinary” layout for average readers. They are aimed at promoting the achievements of scientific thought and implementing relevant pragmatic communicative tasks. The authors of these texts try to find the most optimal means for the dissemination of scientific facts. They set forth their ideas taking into account the level of reader’s expertise who, as a rule, is not an expert in this field. The addressor and the addressee of the text can be regarded as partakers “who are constructed by the text which they are engaged in producing and interpreting” [8, p. 342]. The popular science texts are characterized by expressivity, emotivity and author’s subjective evaluation.

As to their structure, popular science texts consist of a title and a text itself. The title enables the recipient to understand what will be discussed in the text. Depending on the purpose that the addresser pursues, three types of titles are distinguished: 1) title-narration; 2) title-question; 3) title-motivation [4, p. 212].

The most common headers were title-narrations (in 10 out of 13 texts under study). These titles are realized in the form of narrative sentences and usually possess a nominative structure: *Signs of Overtraining; The Second Principle of Intensity; Thermogenesis: Heat Production For Fat Loss; Physical Fitness May Be Tied To Slow Memory Decline; Resistance Training; The Skinny On Dietary Fat* [14; 19; 20; 21; 12; 15; 10; 11; 17; 18].

A title-question is a question to which the author tries to provide an answer in the text. This type of title intrigues the potential readers and prompts them to find the answer in the text. Only one text with a title-question was found within the frame of our research: *What’s Your Fitness Age?* [16].

A title-motivation expresses instruction or order, forcing the recipient to act. They are introduced in the form of imperative sentences: *Be Heart Smart* [20, c.94]; *For Fitness,*

*Push Yourself* [18].

Thus, we may conclude that the most frequent types of titles are title-narrations, which are characterised by a wide use of fitness terminology, nominative structures on the syntactical level and the use of present tense on the grammatical level, which indicates permanence and timelessness of the issues discussed in the texts.

Since the main function of popular science texts is to disseminate scientific facts, the authors of such texts use specialised terms as well as formal vocabulary and stylistic devices to render the scientific thought. To achieve the aim, the author uses highly technical/specialised terms in order to report the facts professionally and objectively. On the other hand, highly specialised terms may cause difficulties for non-experts/amateurs to perceive the presented information, and that is why they often mark terms graphically, usually using quotation marks: *Working to this "point of failure", when another rep is impossible despite the greatest effort, ensures that you pass through the "break-over-point," a point in the set below which growth cannot be stimulated, and above which growth will be stimulated* [13, p. 41]. *It is the "core temperature" – the amount of heat continually produced within the body* [10, p. 109]. *The convergence of those two developments has led to what some researchers have identified as a "lengthening of morbidity"* [17]. *To a large degree, this is a matter of understanding the "fatigue timeline" of muscles within your programme – which muscles get tired, when they get tired and how this effects your ability to train with intensity and effectiveness* [12, c. 140].

From the above examples, we can conclude that the authors not only graphically mark highly specialised terms, but also introduce their dictionary definitions or interpret them, using general vocabulary.

We have also found graphically highlighted terms used figuratively: *SDA concludes ... not only does the body temperature rise with food consumption, but it "costs" the body some energy in order to "untrap" the fuel found in foods* [10, p. 109]. *No, the "revolution" has come about more in terms of understanding how to construct more effective training programmes – including the training cycles, what equipment to use, how much and how long to train, when to rest, and in what order to do the exercises in your programme* [12, p. 142]. *One reason dietary fat is more "fattening" than carbs and protein, is due to fat's relatively tiny thermic effect* [10, p. 110].

In addition to graphical means, the authors use introductory phrases, such as *so-called*, *once called*, etc. to show that specialised terms are not usually used in such a type of LSP texts, e.g.: *Thermogenesis was once called the SDA effect or specific dynamic action* [10, p. 109]. *A new study of fitness and lifespan suggests that a person's so-called fitness age – determined primarily by a measure of cardiovascular endurance – is a better predictor of longevity than chronological age* [18]. *A machine measured the amount the amount of oxygen participants breathed in and carbon dioxide breathed out to calculate each person's so-called VO2max* [15].

The terms of foreign origin, namely the ones that were created based on the Latin or Greek languages are often replaced by their English synonyms, e.g.: *blood sugar* instead

of *insulin*, *high blood pressure* instead of *hypertension*, *fat tissue* instead of *adipose tissue*. Such a choice of terms contributes to better perception and understanding of the information presented in the text by non-experts/amateurs.

Also, the authors of popular science texts on fitness explain terminological units by providing examples: *Other than larger fibres, the protein content of your muscles also increases, and your connective tissues – tendons, cartilage, and ligaments – become thicker and stronger* [11, p. 7]. *This is best achieved by resistance exercise utilizing free weights (barbells and dumbbells) or resistance exercise machines such as Nautilus, Hammer Strength or Medx* [14, p. 14]; *interpretation of highly specialised terms using general vocabulary: Cortisol works to destroy and over ride the four anabolic (muscle friendly) hormones; testosterone, insulin, thyroid, and growth hormone* [9, p. 130].

The authors of popular science texts seek to establish a direct contact with their potential readers, i.e. to draw their attention to the content of the texts and direct the readers' perception of information by creating a relaxed atmosphere of communication which facilitates efficient transmission of information and intellectual perception. One of the means of establishing such a contact is a widespread use of the personal pronoun *you* and its possessive form, e.g.: *As you become more fit, your muscles do a better job of extracting oxygen from your blood, boosting your aerobic capacity and allowing you to exercise at a higher intensity before your body must switch to anaerobic energy production* [11, p. 6]. The first-person pronoun *we* also reduces the distance between the author and the reader: *Each and every time fuel from the foods we eat is introduced into the body, the temperature rises a bit* [10, p. 109]; *Americans are living longer, with our average life expectancy now surpassing 78 years, up from less than 74 years in 1980. But we are not necessary living longer* [16].

Furthermore, the pronoun *we* emphasizes the author's ideas by positioning him/her as a member of a reputable company or community, e.g.: *Although we at FLEX firmly believe that the old 100-rep system does have value, we designed a new version that offers greater benefits* [19, p. 94]. As to the pronoun *I*, it was only once used in the texts under study. It explicitly shows the author's attitude to the ideas and facts described in the text, e.g.: *I discovered my own fitness age is 15 years younger than my chronological age – a good number but still not as low as I could wish* [16]; *Remember, I advocate and use what is technically referred to as "high-intensity, low-force exercise" with my clients* [14, p. 15].

Thus, the author activates the reader's role by creating an effect of involving the addressees in the thinking process of the writer [9, p. 344]. This "tandem" removes the obstacles between the reader and the author that helps to maintain the reader's level of interest in the text.

The reader's attention is also sustained due to imperative constructions or mandatory appeals: *Compare the difference between..., just think about it..., remember*. They lead the reader to mutual cognitive and communicative actions aimed at decoding the text, and at the same time they perform the functions of establishing contact and of appealing

[5, p. 106-107]. In fitness texts, such constructions urge to action, force the reader to take a direct participation in cognitive activities of the addresser.

The use of pronoun *we* in interrogative sentences also reduces a mental distance between the author and the reader by activating the recipient, e.g.: *We know exercise is good for us, now how do we get it every day?* [15].

The question as a form of dictum combines multiple subjective perspectives. On the one hand, it is posed by the author and thus expresses subjective information and supports the reader's cognitive activity. On the other hand, an interrogative sentence implies the existence of the thought, not identical to the author's, and enhances the direction of the reader's communicative and cognitive activities [5, p. 107].

Rhetorical questions in popular science texts require the reader's emotional confirmation or denial, which leads to the enhancement of reader's point of view: *What's aerobic, anyway?* [21, p. 140] *Will having a younger fitness age add years to your life?* [16]. Thus, a rhetorical question is used as a means of establishing a direct contact between the author and the recipient of the text.

The construction *question-answer* can be treated as one utterance, as the author asks the question not to obtain the answer, but to draw the reader's attention to his message [3, p. 38]: *In some, an over eating thermic effect is far greater than experienced in others. For example, 2 brothers of similar weight, height, build and activity level could both over eat above and beyond their daily caloric needs for 8 to 10 pounds while another 7 or 8 pounds – though they ate the same exact foods and same total caloric intake Why? Thermogenesis. Some people experience greater heat increases with eating than others* [10, c. 111-112]. The example above indicates the interlocutory nature of scientific communication in which the author intends not only to introduce new information, but also to activate the cognitive activity of the recipient in the necessary direction.

The whole arsenal of stylistic devices such as metaphor, hyperbole, analogy, simile and others are used in order to add expressivity to popular science texts.

Metaphor in popular science texts is marked by great semantic capacity, generating a chain of associations which

make the text intelligible and easily perceptible [1, p. 24–25]. It should be noted that the author of popular science texts governs the process of generating associations, combining certain phenomena of everyday life with the scientific ones, e.g.: *ATP gives your muscle the energy they need to contract. Think of it as gasoline for the body* [11, p. 5]. *When it's really cold outside and an individual struggles to remain warm, he throws on a heavy jacket, right? That jacket acts to trap heat inside so heat cannot escape. Body fat is nature's jacket* [10, p. 110].

Comparison with the phenomena of everyday life is an extremely productive way of explaining complex concepts: *Two people decide to perform 40 minutes of cardio exercise each day. One man weighs 200 pounds and carries about 170 pounds of lean muscle weight while another man weighs 140 pounds and carries 119 pounds of lean muscle weight... Who gets leaner? The larger individual with more muscle mass. Why? ... Here's the analogy. The same two men decide to drive from Boston to New York, about 200 miles. One takes his Toyota Land Cruiser, the other drives his Honda Civic... The two arrive in New York and pull into a gas station. The Honda has burned 7 gallons of fuel while the Land Cruiser has burned through double, 14 gallons. More mass = more calories burned during long distance (aerobic) work* [10, p. 112]. Here the authors use different linguistic and rhetorical devices to sustain the reader's attention, keep him engaged in cognitive activities and, thus, to effectively disseminate scientific information.

**Conclusions.** The author of the popular science texts in the sphere of fitness tries to find the most optimal means to facilitate the dissemination of scientific facts by using highly specialised terms along with formal vocabulary and stylistic devices. When terms are introduced in the text, the author highlights them graphically, uses introductory phrases or substitutes terms of foreign origin by their English synonyms. To sustain the reader's attention, the author seeks to establish a direct contact with a reader using personal pronouns, rhetorical questions, imperative constructions and mandatory appeals. The popular science texts in the sphere of fitness are also characterised by expressivity, emotivity and author's subjective evaluation.

## REFERENCES

- [1] Batasheva, L.A. Figurative Means of Popularization in Popular Science Literature / L.A. Batasheva // Actual Problems of Modern Philology. – Saratov : Publishing house of Saratov Univ., 1985. – Is. 2. – P. 19-27.
- [2] Danilenko, V.P. Russian Terminology. The Experience of Linguistic Study / V.P. Danilenko. – M. : Nauka, 1977. – 246 p.
- [3] Dashkova S.Yu. Rhetorical Questions in the Structure of Argumentative Dictum / S.Yu. Dashkova // Bulletin of KemSU. – 2013. – № 2 (54), Vol. 2. – P. 36-40.
- [4] Kovalenko, A.M. Communicative Peculiarities of the Title in Micro Journal Message / A.M. Kovalenko // Philology. – Sumy : SSPU, 1999. – P. 209-216.
- [5.] Chernyavskaya, V.E. The Interpretation of Scientific Text / V.E. Chernyavskaya. – M. : Knizhnyi dom "LIBRIKOM", 2010. – 128 p.
- [6] Leonardi, N. Knowledge Organisation in LSP Texts and Dictionaries: A Case Study / Natascia Leonardi // Professional Communication Knowledge Management Cognition. – Copenhagen : LSP Journal, Vol.1, No.1 (2010) – P. 81–98.
- [7] Vargas Chelo A Pragmatic Model of Text Classification for the Compilation of Special-Purpose Corpora / URL: <http://www.ua.es/personal/chelo.vargas/Documentos/BH%20Vargas.pdf>.
- [8] Yakhontova, T. The genre of the conference handout: Textual features, interpersonal characteristics and peculiarities of interpretation / T. Yakhontova, S. Markelova // Constructing Interpersonality: Multiple Perspectives on Written Academic Genres. Ed. by R. Loréz-Sanz, P. Mur-Dueñas, E. Lafuente-Millán. – Newcastle upon Tyne : Cambridge Scholars Publishing, 2010. – P. 337-355.

**THE LIST OF ILLUSTRATIVE MATERIAL**

- [9] C. Championship Bodybuilding / Chris Aceto. – Nutramedia, 2001. – 260 p.
- [10] Aceto, C. Everything You Need to Know About Fat Loss / Chris Aceto. – Morris Publishing, 2003. – 164 p.
- [11] Applegate, L. Encyclopedia of Sports and Fitness Nutrition / Liz Applegate. – Prima Publishing, 2010. – 412 p.
- [12] Lockwood, C. 30 Fat Loss Tips / Chris Lockwood // Muscle and Fitness. – Weider Publications, LLC., 2003. – June. – P. 139–145.
- [13] Mentzer, M. High-intensity Training the Mike Mentzer Way / Mike Mentzer, John Little. – Contemporary Books, 2003. – 222 p.
- [14] Mentzer, M. Muscles in Minutes / Mike Mentzer. – Mentzer-Sharkley Enterprise, Inc., 2002. – 46 p.
- [15] Raven, K. Physical Fitness May Be Tied to Slow Memory Decline [Online] : /<http://www.reuters.com/article/2013/11/21/us-physical-fitness-idUSBRE9AK1EG20131121>.
- [16] Reynolds, G. For Fitness, Push Yourself / URL: [http://well.blogs.nytimes.com/2014/06/25/for-fitness-push-yourself/?\\_r=0](http://well.blogs.nytimes.com/2014/06/25/for-fitness-push-yourself/?_r=0).
- [17] Reynolds, G. The Benefits of Middle-Age Fitness / URL: <http://well.blogs.nytimes.com/2012/09/05/the-benefits-of-middle-age-fitness/>.
- [18] Reynolds, G. What's Your Fitness Age? / URL: <http://well.blogs.nytimes.com/2013/10/31/how-old-is-your-health/>.
- [19] Stoppani, J. Turn of the Century / Jim Stoppani // Flex. – 2007. – April. – P. 93-96.
- [20] Thornburg, Gina K. Be Heart Smart / Gina K. Thornburg // Muscle and Fitness. – Weider Publications, LLC., 2002. – December. – P. 94-97.
- [21] Thornburg, Gina K. The Skinny on the Dietary Fat / Gina K. Thornburg // Total Nutrition. – Weider Publications, LLC., 2003. – P. 33-37.