Syntactic-Derivational Composition of the Computational Linguistics Terminology

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ANNOTATION

Syntactic derivational analysis of computational linguistics terms were investigated in this article due to syntactical method in different languages system. As well as other word formation methods also touched upon according to terminological principles. Specific peculiarities of computational terminology were revealed according to the internal and external factors. The problems of adequate translation of computational linguistics terms were analyzed in different languages systems.

KEYWORDS: Terminology of computational linguistics, syntactic derivation, word-formation methods, lexeme, term, single-component and multi-component terms.

In the syntactic aspect, linguistic signs are the rules for the relationship of words in a sentence. Adding words in which the order of the terms expresses certain meanings such as putting the words "clean" and "air" in a different order can lead to different meanings. Syntactic derivation shares the properties of formal derivation, which is limited from semantic derivation along the line lexical meaning - grammatical meaning. But unlike lexical (word-building) derivation, syntactic derivation covers the grammatical form of a word, and the grammatical form of a sentence or phrase: it leads to a change in the links between lexemes, that is, to a syntactic change in the sentence (phrase).

The survey of the structure of any terminology includes several interrelated and sequential processes. They include establishing methods of derivation, taking into account the number of components in the term and the nature of the relationship between them. In order to determine the structure of a certain terminology, it is necessary to solve the following tasks:

➤ to determine the most frequent word-building models of the chosen terminology;

➤ identify the components of these models;

➤ find term elements that are most often used when creating terms.

When distributing terminological vocabulary by categories, the following principles and criteria were taken into account in this study.

1. Simple non-derivative terminology includes lexical units consisting of one root morpheme. According to a number of linguists, the establishment of this structural category of terms does not cause any particular difficulties, since the root often coincides with the basis of the word.

2. Derived terms include terms that are a combination of a stem with term elements acting in a prefix, suffix or prefix-suffix function.

Taking into consideration the structural classifications of terms existing in linguistics and terminology which are based on the morphological-syntactic principle, and also in accordance with the objectives of this study, all the terms selected for analysis were distributed according to the structural models given below.

➢ model 1 - simple non-derivative terminology;

➢ model 2 - simple derivative terminology;

➢ model 3 - complex terminology;

➢ model 4 - composite terminology.

In the process of solving these problems, we analyzed the structure of terms included in the terminological system of computational linguistics. This study showed that the most productive way of word formation in terms of computational linguistics is the formation of two-component phrases. It is interesting to note that it is two-component expressions that have the ability to most correctly explain and describe both computer phrases in general and expressions of computational linguistics. The most common structural models of two-component terms include structures, for the disclosure of which we give a list of conventions:

N - noun; A - adjective; V – verb.

➢ ed - verbal suffix expressing the passive voice

➢ ing - verbal suffix forming a noun

The most common structural models of two-component terms include the following structures:

Structure	Examples
N+N	*Application layer, base character, character code, command shell, data mining, error checking, file format, hand shaking, information extraction, laser printer;*
A+N	*Autonomous System, computational semantics, digital image, hard disk, hierarchical file, linguistic corpora, natural language, open platform, phonetic transcription;*
V+ed+N	*Applied linguistics, bitmapped terminal, compiled language, distributed database, linked data*
V+ing+N	*Collating sequence, scripting language*

Three-component phrases were also noted having the following structure:

N+N+N: data link layer, database management system;

A+N+N: "black box" evaluation, hierarchical file structure;

A+A+N: reverse alphabetical order;

V+ed+N+ N: distributed file system;

A+ N +V+ing: statistical language modeling.

The investigation showed that another productive method of word formation of the terminology of computational linguistics is morphological and syntactic. Abbreviated terminology makes up about 18% of this collection of terminology, which is represented by acronyms: ACL (Access Control List), Application Programming Interface / API, Artificial Intelligence / AI, BIOS (Basic Input / Output System), CLI (Command-Line Interface), CAT (Computer-Assisted Translation), FAQ (Frequently Asked Questions), GUI (Graphical User Interface), HMM (Hidden Markov Model), IPA (International Phonetic Alphabet), TCP (Transmission Control Protocol).

The analyzed terminology includes numerous compound words consisting of various components, namely

1. A+N: freeware, software;

2. N+N: keyboard, gateway, mailbox, network, backbone, database;

3. prepositions backup, output, input

The syntactic type of word formation in the study is represented by terms-composites, which make it possible to identify terms with one metaphorized component (base) in the composition of this category of terms. They are represented by the following hyphenated examples: on-line, off-line, object-based, user-friendly, dial-up, multi-processing, object-oriented. Thus, the term system of computational linguistics is characterized by a standard set of term elements of various origins that are used on a regular basis in prefix and suffix functions as part of a simple derivative terminology. For complex (mono lexeme) terminological vocabulary, the implementation of regular word-formation and elementary syntactic models is typical, according to which newly created terms of the corresponding categories of terminological vocabulary can be formed.

The syntactic way of forming computer units in the studied languages is realized in terms with a similar structure. Most of the terms-phrases are binary, less common are multicomponent ones. In non-literary vocabulary, the lexical-syntactic method serves to form phraseological units, including their special variety - periphrasis, for example. Big Red Switch is a power off button, a gray friend is a computer mouse). Structural-semantic analysis of units of computer vocabulary, taking into account its stylistic heterogeneity, made it possible to establish a correlation between the functions of terminology, professional vernacular, jargon and the features of the flow of word-formation processes in them.

➢ The main function of the term is nominative. This explains the productivity of the syntactic method for the nomination of complex concepts. Compound words serve the same purpose. In terminology, there is also a desire to optimize the speech message. Abbreviation of terms-phrases helps to eliminate the descriptiveness of the term, give it additional meanings (provide additional information about the denotation, create advertising).

➢ The goals of professional vernacular vocabulary are to achieve a short and convenient form of a nominative unit (for this, stem truncation, contraction and univerbation, abbreviation are used). Compounding is productively used, in which the brevity of the form is combined with the capacity of the meaning. In Russian, various types of affixation serve for the grammatical assimilation of anglicisms.

Abbreviation is a very active process in the English computer vocabulary. It is accompanied by: a) abbreviated homonymy, that is, the existence of a large number of terms-abbreviations that have several

different interpretations; b) abbreviation synonymy, that is, different options for the initial abbreviation of the same term; c) occasional abbreviation. The abbreviation in the computer vocabulary of both languages is actively used in network communication. The purpose of abbreviations in correspondence texts is to reduce frequently repeated phrases, euphemistic smoothing of emotional statements, for example, GoAT = "Go Away, Troll". In English, everything named is supplemented by the function of establishing contact (comp: ENO from ENQuire = "are you here?"). In Russian, the same task is performed by politeness formulas subjected to univerbation (comare: thn. (from English thanks) - thank you, plz (from English please) - please). A kind of abbreviation of the English language - acronymy serves both for the formation of terms (ART - automatic recognition technology) and for the creation of game jargon (for example, BAD - Broken As Designed). In the English jargon, a humorous interpretation of well-known abbreviations, for example, IBM – Inferior, But, Marketable, was noted as a special way of language game.

The main function of jargon is expressive. Slang vocabulary is characterized by the presence of emotional and evaluative affixes of the literary language, suffixes of colloquial, colloquial, reduced styles, slang formants. All types of semantic transfer, paronomasia, contribute to jargonization. The necessary quality of a slang word is the conciseness of the form. The concentrations of a rich set of meanings in one slang unit are: appellative, telescopic (for example, compubiqmty - universal computerization, netiquette - net etiquette), the use of suffixes with modified semantics and proper slang affixes.

Semantic derivation and semantic word formation are closely related concepts that reflect different functions in the formation of a semantic system. Semantic derivation characterizes lexical semantic processes in a language, and semantic word formation is typical of grammatical semantic processes. Semantic derivation is a quantitative factor of semantic changes, since the emerging new connotations of words increase its semantic scope. First of all, this is a phenomenon of speech, not language, because the actualization of different connotations of words depends on the context in which the unit of language is used. Thus, the text plays an important role in the functioning of semantically filled elements (syncrets). The text describes the meaning of the word.

Semantic word formation is a phenomenon and the result of a qualitative step of a new unit of linguistic invention, with its own meaning, which fixes in the language. In this case, the context does not determine the actualization of one or another meaning of a linguistic unit. It determines the choice of a particular word from a number of units that are similar in meaning or form. The process of semantic inference leads to the formation of semantic syncretes, which are multi-valued units.

The actualization of their connotations does not directly depend on the context. Then the trends of semantic derivation lead to the appearance of first metonymic and then metaphorical semantic derivatives. The latter are units that actualize their connotations in context immediately, i.e. units with contextual meaning.

As mentioned above, the word derivation can be defined narrowly and broadly. If, in a narrow sense, derivation is an affix formation: "The formation of new words with the help of affixes (or by means of disaffixation) according to the word-building models characteristic of a given language". In a broad sense, it can be defined as a process that also extends to the use of a sign in a new meaning and it is in a broad meaning that the term semantic derivation is used.

Frequently most linguists understand semantic derivation as the formation of the meanings of a polysemantic word. In turn, the concept of semantic derivation is a way of developing the polysemy of a word.

However, semantic derivation is a process in which a word acquires new meanings, i.e. the process of increasing the semantic volume of a word. Derivation has directions of changes that determine the main types of derivation itself. Metonymic and metaphorical processes of changes in the structure of the word from the point of view of semantics. Derivation in a general sense is understood as a deviation from the initial state, a change in the direction of development, a branch. Hence, the linguistic term semantic derivation is used to describe the semantic processes resulting in changes from the original meaning of a word.

The term "computational linguistics" is associated both with the science of natural language and with such concepts as "computers", "programs", "internet". This, in turn, limits the subject area to the development of linguistic software, hardware and technologies, such as computing equipment specifically designed for processing natural language texts.

Such equipment is mainly used in systems for recognizing various parameters of oral speech, as well as in special systems used for character recognition. For example:

Science/Наука	Term/Термин	Translation/Перевод
Физика	Dimension	Разрешение
Технические науки	Process	Обработать
Математика	Binary digit	Двоичный разряд
Телекоммуникации	supporter	Носитель
Электроника	Cursor	Курсор, указатель мыши
Типография	Shift	Отступ
Языкознание	Paragraph	Абзац

The following terms in the computer sphere are formed using the metaphorical method of transfer:

Similarity-based nouns

➤ appearance: memory card - memory card,

➤ functions output device - output device. Adjective terms based on similarity

➤ Significance of signs of objects and phenomena nonvolatile storage - 'persistent memory'.

Verb terms based on similarity

➤ functions: hibernate - switch to standby (sleep) mode.

Our sampling process revealed the presence of a number of one-component terms. Semantically, they are divided into those that describe:

➤ computer processes: access, bridge, bug, command, crash, down, environment, fault, font;

➤ computer parts: cable, segment, chip, display, hub, mouse, screen, etc.

linguistic terms: stem, split, tense, word etc…

At the moment, there is no unanimously accepted point of view regarding how terminology and general literary language correlate. On the one hand, special vocabulary is subject to special regulation, which is based on a production orientation dictated by the conditions of the corresponding subsystem. On the other hand, terminological vocabulary is considered as a part of the general literary language, subject to the processes operating in it. In the vocabulary we have chosen, you can find the following kind of units:

➢ units that are fundamentally different in form from everyday words and expression. For example:

8B10BLF (8 Byte 10 Byte Local Fiber) local fiber channel with coding;

➢ units that partially or completely coincide in spelling with common vocabulary. for example:

backdoor - a back door - a weak point in the system, of random or planned origin (through the back door, an informed person can easily access the system);

➢ the same terms that may appear in different meanings in different fields of knowledge:

Base - in military terminology it is translated as a base, a strong point; in sports - the starting point; in architecture - a pedestal, a plinth; foundation", and in the field of computer technology - base, base address (address of RAM or ROM, relative to which addresses are calculated).

From experience it becomes clear that the prevalence of a term affects the accuracy of its meaning. The narrower the medium of distribution of the term, the more precise its use. At the same time, its meaning is often expressed to a greater extent by the concept of a scientific, and not a nationwide one. However, despite this, linguistic and related categories expand the nature of words and their dynamic changes, the features of their use in speech and their continuous multiplication, the ability to identify developmental problems, serve for their comprehensive and deep interpretation.

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