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*Присвячується світлій пам'яті моїх любих батьків
Коваля Івана Андрійовича і Коваль Марії Олександрівни*

ТЕОРІЯ І ПРАКТИКА ТЕРМІНОЗНАВСТВА

*Навчальний посібник
для студентів вищих навчальних закладів*

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Навчальний посібник складається з двох частин. У першій частині розглянуто основні теоретичні питання курсу з урахуванням сучасного стану термінознавчої науки: загальні відомості про термінознавство як науку; природу і сутність терміна, термінології та терміносистеми; лексико-граматичні особливості термінів-слів та термінів-словосполучень; семантичні відношення в термінології; основні шляхи та способи термінотворення; виникнення, сучасний стан та перспективи розвитку української термінології; основні тенденції розвитку термінології в епоху глобалізації тощо. Друга частина навчального посібника містить практичні завдання, вправи, модульні контрольні роботи та тести з теорії термінознавства. Подано необхідну додаткову інформацію: список рекомендованої літератури, перелік питань для заліку, глосарій термінів термінознавства. Навчальний посібник призначений для студентів 4 курсу факультетів іноземної філології вищих навчальних закладів.

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Preface

This course of terminology science forms a part of the curriculum for the English sections of foreign philology departments of teacher training colleges and universities. It is intended for the fourth-year students of the day department and fully meets the requirements of the programme in the subject.

The tutorial includes the following parts: 1) lecture notes on terminology science with the list of recommended literature; 2) authentic texts on terminology for additional reading; 3) tasks and exercises for practical hours; 4) modular quizzes on the practice of terminology; 5) tests on the theory of terminology; 6) the list of issues for a credit test on terminology; 7) the glossary of terms of terminology science.

Lecture notes cover the main topics of Modern English terminology science: terminology as a subject; the concepts of term, terminology and terminology system; lexical and grammatical description of terminology; multi-word terms as the most productive type of terms; semantic relationships in terminology; word-building in terminologies and its main tendencies; the development, state and topicality of Ukrainian terminology; the tendencies of terminology in the ear of globalization.

In our opinion, one can hardly acquire a perfect command of the English language without knowledge of all these things.

It is our aim that foreign language students should learn the following from their study of the theory and practice of terminology science: 1) to become aware of the meaning of language as a tool; 2) to distinguish between everyday language and special languages; 3) to analyse the field of knowledge they are working with; 4) to become aware of terminology of their own field; 5) to make analysis of one-word and multi-word terms; 6) to handle specialized terminology; 7) to analyse unfamiliar subject fields; 8) to analyse and solve terminological problems; 9) to be careful to trusting dictionaries (methods of terminography and lexicography); 10) to read, understand and translate specialized texts; 11) to create their own terminology bases; 12) to write their bachelor's and master's papers on a terminological subject.

The author will feel much obliged for any criticism.

PART ONE

THE THEORY OF TERMINOLOGY SCIENCE

LECTURE NOTES ON TERMINOLOGY SCIENCE

I. Terminology Science as a Subject

1.1. Terminology science, its subject-matter and tasks

1.2. The structure of terminology science and its methods

1.3. The place of terminology science among other sciences

1.1. Hundreds of thousands of words belong to special scientific, professional or trade terminological systems and are not used or even understood by people outside the particular specialty. Every field of modern activity has its specialized vocabulary. There is a special medical vocabulary, and similarly special terminologies for psychology, botany, music, linguistics, teaching methods and many others.

Term, as traditionally understood, is a word or a stable word-group which is specifically employed by a particular branch of science, technology, trade or the arts to convey a concept peculiar to this particular activity [Antrushina, Afanasyeva, Morozova 1999: 33-34]. **Terminology** is a totality of words and word combinations, which name special objects and express special professional concepts. **Terminological system** is a regulated totality of terms of a definite field of people's knowledge. Modern research of various terminological systems has shown that there is no impenetrable wall between terminology and the general language system. On the contrary, terminologies seem to obey the same rules and laws as other vocabulary strata. Therefore, exchange between terminological systems and the common vocabulary is quite normal.

Terminology science is a branch of linguistics which studies the semantic nature, grammatical structure and principles of functioning of terms, which attend to different spheres of professional activity of people.

The **tasks of terminology science** are: 1) the analysis of the role of terminology in the communicative processes; 2) the determination

of the place of terminology in the language system; 3) the study of terms by comparison with words and free / stable word-combinations of the common language; 4) the analysis of the grammatical structure of simple, affixed and compound terms; 5) the study of the specific character of terminological word-groups as compared to free and phraseological word-groups etc. [Golovin, Kobrin 1987: 7].

The **applied tasks of terminology science** are: 1) the elaboration of recommendations on the usage of terms in the conditions of scientific, technological and educational communication; 2) working out of the principles of the selection of terms for solving different tasks of terminological lexicography; 3) the creation of methods of state standardization of terminology; 4) working up of the methods of terminology work in the construction of data banks and data bases.

1.2. Terminology science is a complex scientific and applied discipline, the subject-matter of which is terms and their totalities (i.e. terminologies and terminology systems) and the regularities of formation, constructing, functioning and utilization of these totalities [Leitchick 1989: 21].

In the structure of terminology science we can single out the following branches: theoretical terminology science, practical terminology science, teaching of terminology, contrastive terminology science, diachronic terminology science, terminological theory of text, history of terminology science.

1) **Theoretical terminology science** is the branch of terminology science specializing in the analysis of the content, formal and functional structure of terms and their totalities.

2) **Practical terminology science** is the branch of terminology science which deals with the issues of receiving and using the results of terminology activity (i.e. dictionaries, standards and terminological data banks).

3) **Teaching of terminology** is the sphere of pedagogical activity which works out and applies various methods and forms of teaching of specialists who study theory and practice of terminological activity.

4) **Contrastive terminology science** investigates terms and their totalities in different languages with the aim of revealing their structural and semantic differences and similarities.

5) ***Diachronic, or historical, terminology science*** is the branch of terminology science which studies the issues of the formation and development of the totalities of terms depending on the formation and development of special fields of people's activity.

6) ***The terminological theory of text*** is the theory which deals with the issues of typology of texts that contain terms, with different aspects of functioning of terms in texts (or with the terminological analysis of the text and the textual analysis of terms).

7) ***The history of terminology science*** is the branch of linguistic science which studies the history of coming into being and perfecting of the subject-matter, methods and structure of terminology science, its place in the system of sciences, the formation of its theories and principles, and its individual schools [Leitchick 1989: 21-22].

Terminology science uses different ***linguistic methods*** of investigation such as immediate constituents analysis, morphemic analysis, word-forming analysis, component analysis, statistical techniques etc. Besides it also uses methods of such sciences as: logic, semiotics, theory of standardization, lexicography, mathematical statistics, and information science.

1.3. Terminology science is bound up with a number of different sciences such as: general linguistics, applied linguistics, information science and documentation, philosophy, logic, computer science, cybernetics.

II. The Concepts of Term and Terminology

2.1. The ways of the rise of terms

2.2. The definitions of the concept of 'term'

2.3. Some requirements to terms

2.4. The definitions of the concept of 'terminology'

2.1. The quantity of terms in developed languages sometimes exceeds the quantity of common words and reaches now several millions of lexical units. This quantity permanently grows.

Terminological units enter a language in different ways. They are: 1) borrowing words from general language and giving them a terminological meaning; 2) borrowing words and morphemes from

other languages; 3) borrowing terms from one branch of science into another.

The first way can be presented by the cases when common lexical units of the native language acquire the status of terms, e.g. common word *waist* (the narrow part in the middle of the human body) → musical term *waist* (the narrow part of the body of bow-instruments), common word *key* (a small specially shaped piece of metal that you put into a lock and turn in order to lock or unlock a door, start a car etc.) → musical term *key* (a) the wooden or metal parts that you press on a piano and some wind instruments in order to play them: *piano keys*; (b) a scale of notes that begins with one particular note, or the quality of sound this scale has: *a tune in the key of A minor*; common word *root* (the part of a plant or tree that grows under the ground and gets water from soil: *tree roots*) → linguistic term *root* (the basic part of a word which shows its main meaning, to which other parts can be added); mathematical term *root* (a number that, when multiplied by itself a certain number of times, equals the number that you have: *2 is the fourth root of 16*); musical term *root* (the note upon which a triad or chord is built).

This way of coining terms is not always positive: some metonymic transferring may take place when a word acquires new (already terminological) shadows of meaning (for example, such terms as *shoulder*, *chairman*, *circuit*). To differentiate similar lexical units, terms frequently change their spelling form or pronunciation, their declination, their stress.

The way of formation of terminological units by borrowing words and morphemes from other languages is more frequently used. In different epochs terms used to be borrowed from different languages. These source languages were predetermined by different historical conditions.

Thus, musical terminology of the leading European languages is mostly of the Italian origin [Eng./Fr. *adagio* – Rus. *адажио* – Ukr. *адажіо* < from Ital. *adagio* – спокійно; Eng./Fr. *rondo* – Rus./Ukr. *рондо* < from Ital. *rondo* – коло; Eng./Fr. *fioritura* – Rus. *фіоритурa* – Ukr. *фіоритурa* < from Ital. *fioritura* – квітування; Eng. *bass* – Fr. *basse* – Rus./Ukr. *бас* < from Ital. *basso* – низький; Eng./Fr. *tuba* – Rus./Ukr. *туба* < from Ital. *tuba* – труба; Eng./Fr. *baroque* – Rus.

барокко – Ukr. *бароко* < from Ital. *baroco* – примхливий]; theatre terms originate from French [Eng. *orchestra* – Rus./Ukr. *оркестр*, Eng. *interval* – Rus. *интервал* – Ukr. *інтервал*, Rus. *бельэтаж* – Ukr. *бельетаж*, Rus./Ukr. *бенуар*, Rus./Ukr. *партер*, Rus. *бенефіс* – Ukr. *бенефіс* etc.]. The majority of sports terms of the leading European languages are borrowed from English [Rus./Ukr. *футбол*, Rus./Ukr. *баскетбол*, Rus./Ukr. *гандбол*, Rus. *теннис* – Ukr. *теніс*, Rus. *Чемпион* – Ukr. *чемпіон*]. The navy terminology in English, Russian, Ukrainian and some other languages consists of Dutch lexical elements [Eng. *skipper* – Rus. *шкіпер* – Ukr. *шкіпер*, Eng. *dock* – Rus./Ukr. *док*, Eng. *reef* – Rus./Ukr. *риф*, Eng. *keel* – Rus. *киль* – Ukr. *кіль*, etc). Technical, craft and military terminologies in many Slavic languages have numerous borrowings from German [Rus. *верстак* – Ukr. *верстат*, Rus./Ukr. *кронштейн*, Rus./Ukr. *бруствер*, Rus./Ukr. *корпус*, Rus. *эшелон* – Ukr. *ешелон*, Rus./Ukr. *фюзеляж*, Rus. *маневр* – Ukr. *маневр* etc.].

A special type of loan words constitutes the words and word-formation models of the Greek and Latin origin. Such terms were formed at different stages of the development of a language, and in different terminological spheres. The church terminology in the languages of the Roman Catholic area originate basically from the Latin elements; languages of the Byzantine Orthodox area use borrowings of the Greek origin.

In the some sub-languages it is not always possible to give a preference to one language only. Rather often new terms are mixed: one root is of the Greek origin, another one is borrowed from Latin [for example, the linguistic term *terminology* consists of the Latin element *terminus* ('a border'), and the Greek element *logos* ('science')].

It is necessary to specify that entirely new terms are not invented as a rule. For the whole history of the development of science and technologies, it is possible to recollect only several cases of such a way of coining. For example, the English term *nylon* was invented after a committee at DuPont Corporation spent 6 months working to decide on a name for the new fibre.

A special case of the formation of terminological units consists in borrowing a term from one branch of science into another. For example, some of musical terms of English, French, Russian and

Ukrainian were borrowed from the terminology of linguistics: Eng. *syllable* – Fr. *syllabe* – Rus. *слог* – Ukr. *склад*, Eng. *word* – Fr. *mot* – Rus./Ukr. *слово*, Eng./Fr. *accent* – Rus./Ukr. *акцент*, Eng. *interference* – Fr. *interférence* – Rus. *интерференция* – Ukr. *інтерференція*, Eng. *borrowing* – Fr. *emprunt* – Rus. *заимствование* – Ukr. *запозичення*, Eng. *onomatopoeia* – Fr. *onomatopée* – Rus. *ономатопея*, *звукоподражание* – Ukr. *ономатопея*, *звуконаслідування*, Eng. *language* – Fr. *langue* – Rus. *язык* – Ukr. *мова* etc.); others were borrowed from the terminology of choreography: Eng. *exercise* – Fr. *exercice* – Rus. *экзерсис* – Ukr. *екзерсис*, Eng./Fr. *gavotte* – Rus./Ukr. *гавот*, Eng. *waltz* – Fr. *valse* – Rus./Ukr. *вальс*; Eng./Fr. *polka* – Rus./Ukr. *полька*, Eng./Fr. *polonaise* – Rus./Ukr. *полонез*.

A term borrowed from another branch often acquires new meanings (for example, *morphology* in linguistics, music and biology; *speech* in linguistics, rhetoric, psychology, physiology and medicine; *harmony*, *ensemble*, *cascade*, *passage*, *choir* in architecture and musicology, *theme*, *leitmotif*, *plot*, *ode*, *ballad*, *romance*, *madrigal*, *rhapsody*, *hymn*, *couplet* in musicology and literary criticism; *adagio*, *libretto*, *exercise*, *gavotte*, *waltz*, *polka*, *polonaise* in choreography and musicology; *composition*, *maestro*, *tone*, *album*, *miniature*, *etude*, *picture* in painting and musicology).

2.2. Term, as well as all others language universals, has many variants of definition. On account of its complexity, there are many diverse attempts of definition of the concept. Here we place only three definitions of the concept, which display and synthesize, in our opinion, different approaches to the concept of a term, moreover they may supplement each other.

B.N. Golovin writes that term is a separate word or a word-combination formed on the basis of a noun, which denotes a professional concept and is intended for satisfaction of specific needs in the process of communication within a certain branch (of science, technology, industry, social life etc.) [Golovin 1980: 276].

This definition is rather successful and capacious, though some moments can cause objections. Doubtful is particularly the fact that all terms may be formed on the basis of nouns only. Sometimes verbs (in particular in the chess terminology) or adverbs (in particular in the musical terminology) can also be such a base [Danilenko 1972: 9]. The

expression 'specific needs in the process of communication' is not absolutely clear here. The functions of the term in the paradigmatic aspect are also poorly displayed. The differences between terms and common words are not specified.

On the basis of various definitions, I.S. Kvitko offers an interesting 'generalizing' definition: 'Term is a word or a verbal complex, which has some correlation with the concepts of a certain branch of science; these concepts have system relations with other words and verbal complexes and form a certain closed system together with them. This system is characterized by a high degree of self-descriptiveness, unambiguity, accuracy and expressive neutrality' [Kvitko 1976: 21].

Rather short and precise is the definition of the concept given by the Committee of the Scientific and Technical Terminology at the Academy of Sciences of the USSR: 'A term (a word or a word-combination) is a unity of a sound sign and the correlated corresponding concept, which is connected with other concepts of this branch' [Klimovitsky 1969: 34].

One can make an assumption that terminology is a set of terms, which expresses existing concepts of a certain branch of science or technologies; in general it is a special sphere of human knowledge or activity [Kvitko, Leitchick, Kabantsev 1986: 17].

2.3. The modern language of science and technologies puts forward some **requirements to ideal terms**. The most important of them are the following:

1) Terms should meet the rules and norms of the corresponding language.

2) Terms should be regular.

3) Terms should possess an inherent property of definitiveness. That means that each term should be precisely associated with the corresponding definition and the corresponding concept.

4) Terms should be relatively independent of a context.

5) Terms should be exact, though (according to D.S. Lotte) in some sub-languages numerous terms with false associations may take place.

6) Terms should be concise; though this requirement quite often contradicts the requirement of accuracy, that is completeness of the term.

7) Terms should be monosemantic (here it is necessary to make one important specification: such unambiguity should be achieved within one terminological system of a particular sub-language; on the level of several sub-languages the polysemy of terms is quite admissible).

8) Terminology should be free from synonymy, which prevents mutual understanding.

9) Terms should be expressively neutral.

10) Terms should be euphonious; therefore terms, which originate from dialecticisms, jargonisms and barbarisms are not desired.

On the other hand, terms are not isolated, independent units of the general language, with properties inherent to them only. They, on the contrary, constitute a full-value part of the general structure of language, where properties of words are apparent in a more determined way, in accordance with the requirements of professional communications and mutual understanding.

Thus, it is possible to speak about the prevailing character of term in comparison with a common word instead of speaking about the full absence of this or that feature within different spheres of language. It is possible to assert about some desirable properties of terminological units, but it is impossible to consider them defective or unnecessary only on account of the fact that this unit has no such properties, though this term is applied by users for a long time.

2.4. Speaking about **terminology**, linguists as a rule, distinguish:

a) the science about terms (in this respect the term 'terminology science' becomes the most popular);

b) professional vocabularies in the structure of all the words in a certain language (if we speak, for example, about the terminology of the Ukrainian language, the German terminology, or the English terminology);

c) a special vocabulary, which serves to satisfy the needs of a certain branch of science or technologies (for example, the terminology of computer science, the linguistic terminology, automobile terminology or music terminology).

Polysemy of such a kind may be caused by the reason that each terminological unit is given a certain point in the coordinates both in language as a whole, and in sub-languages in particular.

Terminologies of different fields of professional activity of people are characterized by the following signs.

1) The main function of terminology is the function of communicative service of professional needs of the users of the language.

2) Terminology is made up with a set of one-word terms and multi-word terms and the relations by which they are connected.

3) One-word terms may be common words, either original or borrowed, formed on the word-building patterns of the general language.

4) Genetically, one-word-terms differ from common words by their semantic organization. Term-building of these terms is submitted to the same regularities and is regulated by the same word-building patterns as word-building in general.

5) Multi-word terms also differ from free or stable (phraseological) word-combinations by their semantic organization. The syntactical patterns of multi-word terms are the same as in the general language, but they differ in their productivity in terminological and non-terminological texts.

6) The semantic relations which connect terms are of logical character, but they are individual, because these relations always connect specific terms of a specific terminology.

Let us consider the definition of a terminological system. According to modern theory of terminology science, **terminological system** is a well-ordered set of terminological units, which adequately expresses the system of concepts of the theory used to describe a certain special sphere of human knowledge or activity [Leitchick, Smirnov, Suslova 1977: 36-45].

III. Lexical-grammatical description of terminology

3.1. General grammatical classification of terminology

3.2. Structural types of terms in Modern European languages

3.1. In order to understand the nature of scientific and technological terms it is very important to determine their grammatical status and to work out their grammatical classification. General grammatical classification of terms of different fields of knowledge should be based on their morphological and syntactical structure. In the majority of European languages two main structural types of terms are singled out: **one-word terms** and **multi-word terms**.

For example, let us consider some linguistic terms of the first structural type in different languages: Eng. *root* – Fr. *radical* – Rus. *корень* – Ukr. *корінь*, Eng./Fr. *phrase* – Rus./Ukr. *фраза*, Eng. *word* – Fr. *mot* – Rus./Ukr. *слово*, Eng. *language* – Fr. *langue* – Rus. *язык* – Ukr. *мова*, Eng. *onomastics* – Fr. *onomastique* – Rus./Ukr. *ономастика*, Eng. *suffix* – Fr. *suffixe* – Rus. *суффикс* – Ukr. *суфікс*, Eng. *stem* – Fr. *base* – Rus./Ukr. *основа*, Eng. *phraseology* – Fr. *phraséologie* – Rus. *фразеология* – Ukr. *фразеологія*.

Let us also compare some linguistic terms of the second structural type in different languages: Eng. *semantic analysis* – Fr. *analyse sémantique* – Rus. *семантический анализ* – Ukr. *семантичний аналіз*, Eng. *applied linguistics* – Fr. *linguistique appliquée* – Rus. *прикладное языкознание* – Ukr. *прикладне мовознавство*, Eng. *language unit* – Fr. *unité de la langue* – Rus. *единица языка* – Ukr. *одиниця мови*, Eng. *modern linguistic theory* – Fr. *théorie linguistique moderne* – Rus. *Современная лингвистическая теория* – Ukr. *сучасна лінгвістична теорія*.

3.2. According to the nature and the number of morphemes constituting a term there are different structural subtypes of one-word terms in Modern European languages: simple, affixed, compound and shortened.

Simple terms consist of one root morpheme, e.g. in musical terminology: Eng. *choir* – Fr. *choeur* – Rus./Ukr. *хор*, Eng. *harp* – Fr. *harpe* – Rus./Ukr. *арфа*, Eng. *stem* – Fr. *queue* – Rus./Ukr. *штыль*, Eng. *sign* – Fr. *signe* – Rus./Ukr. *знак*, Eng. *psalm* – Fr. *psaume* – Rus./Ukr. *псалм*, Eng./Fr. *clef* – Rus./Ukr. *ключ*.

Affixed terms consist of one root morpheme and one or several affixes, e.g. Eng. *soloist* – Fr. *soliste* – Rus. *солист* – Ukr. *соліст*, Eng. *arranger* – Fr. *adaptateur* – Rus. *аранжировщик* – Ukr. *аранжувальник*, Eng. *modernism* – Fr. *modernisme* – Rus. *модернизм* – Ukr. *модернізм*, Eng. *sub-bass* – Fr. *soubasse* – Rus./Ukr. *суббас*.

Compound terms consist of two or more stems, e.g. Eng. *opera-ballet* – Fr. *opéra-ballet* – Rus./Ukr. *опера-балет*, Eng. *keyhole* (‘звуковий отвір’), *hornpipe* (‘волинка’), *fiddlestick* (‘смічок’), *kettle-drum* (‘литаври’), *piano-player*, *organ-player*, Fr. *cornemuse* (‘волинка’), *hautbois* (‘гобой’), *basse-taille* (‘перший бас’), *boogie-woogie* (‘танець бугі-вугі’), *haut-boiste*, *cornemuseur*, Rus. *трезвучие*, *звукоряд*, *триосоната*, *джаз-гітара*, *музыковедение*, *инструментоведение*, Ukr. *кіномузика*, *тенор-труба*, *радіо-опера*, *бас-кларнет*, *сопранотромбон*, *ритмомелодика*, *музикознавець*.

Shortened terms are produced in two different ways.

The first way is to make a new term from a syllable of the original word. The latter may lose its beginning (as in *phone* made from *telephone*, *van* from *caravan*), its ending (as in *limo* from *limousine*, *carb* from *carburetter*, *amph* from *amphibian*, *eng* from *engine*, *vent* from *ventilator*, *gar* from *garage*, *comp* from *compartment*) or both the beginning and ending (as in *fridge* from *refrigerator*). This type of terms is called **clipped terms**.

The second way of shortening is to make a new term from the initial letters of a word-group, e.g. Eng. *I.C.E.* from *internal combustion engine* (двигун внутрішнього згоряння), *EGR* from *exhaust gas recirculation* (рециркуляція відпрацьованих газів), *EMS* from *engine management system* (система керування двигуном), *ABC* from *anti-block braking system* (антиблокувальна гальмівна система), *ATF* from *automatic transmission fluid* (рідина для автоматичних коробок швидкостей). This type of terms is called **initial shortenings**. American linguists use the term **acronyms** for such shortenings.

It is commonly believed that the preference for shortenings can be explained by their brevity and an ever-increasing tempo of modern life.

One-word terms are usually used in terminological systems of different national languages both as independent nominative units [e.g. Eng. *spring* – Fr. *ressort* – Rus. *пескопа* – Ukr. *пескопа*] and as the

nuclei of multi-word terms [e.g. Eng. *brake spring* – Fr. *ressort de frein* – Rus. *тормозная пружина* – Ukr. *гальмівна пружина*, Eng. *brake release spring* – Fr. *ressort de rappel des freines* – Rus. *пружина для отпущания тормозов* – Ukr. *пружина для розмикання гальмів*].

Multi-word terms are the most productive units of nomination of scientific concepts in terminologies, because they provide for monosemy and systemic character of terms, and they meet adequately the requirements of nomination in the conditions of scientific and technological progress [e.g. Eng. *brake piston cap* – Fr. *coupelle de piston de frein* – Rus. *тормозная манжета* – Ukr. *гальмівна манжета*, Eng. *auxiliary windshield wiper* – Fr. *essuie-glace auxiliaire* – Rus. *запасной стеклоочиститель* – Ukr. *запасний склоочисувач*].

IV. Multi-word terms as the most productive type of terms

4.1. The semantic and structural peculiarities of multi-word terms

4.2. Different kinds of classifications of multi-word terms

4.3. The patterns of formation of multi-word terms

4.1. The terminology of a language is enriched not only by one-word terms but also by multi-word terms. Multi-word terms are stable word-groups which cannot be made in the process of speech, they exist in the language as ready-made units. That is why multi-word terms are considered to be language units. Being language units they are fixed in terminological dictionaries equally with one-word terms. Like one-word terms, they convey a single concept and they are said to be characterized by semantic unity.

In the sentence multi-word terms are not divided syntactically into parts and are used as one part of the sentence.

Structural invariability is an essential feature of these terms, though some of them possess it to a lesser degree than others. Structural invariability of multi-word terms finds expression in a number of restrictions.

1) First of all, restriction in substitution. As a rule, no word can be substituted for any meaningful component of a term without destroying its sense.

2) The second type of restriction is the restriction in introducing any additional components in the structure of a term.

3) The third type of restriction in terms is the stable order of components.

4.2. There are many different classifications of multi-word terms. They may be classified according to the composition of word collocation, according to the internal structure, according to the direction of dependence.

1) According to the composition of a word collocation these terms are divided into **simple word collocations**, which consist of two components [e.g.: Eng. *discant guitar* – Fr. *guitare soprano* – Rus. *сопрановая гитара* – Ukr. *сопранова гітара*; Eng. *coloratura soprano* – Fr. *soprano coloratura* – Rus. *колоратурное сопрано* – Ukr. *колоратурне сопрано*; Eng. *wind instrument* – Fr. *instrument à vent* – Rus. *духовой инструмент* – Ukr. *духовий інструмент*] and **compound word-groups**, which consist of more than two components [e.g.: Eng. *big discant guitar* – Fr. *grande guitare soprano* – Rus. *большая сопрановая гитара* – Ukr. *велика сопранова гітара*; Eng. *dramatic coloratura soprano* – Fr. *soprano coloratura dramatique* – Rus. *драматическое колоратурное сопрано* – Ukr. *драматичне колоратурне сопрано*, Eng. *wooden wind instrument* – Fr. *instrument à vent en bois* – Rus. *деревянный духовой инструмент* – Ukr. *дерев'яний духовий інструмент*].

2) According to the internal structure all multi-word terms are considered to be **nuclear word collocations** with subordinate tie between components. A nuclear word-group is a grammatically organized combination of words in which one of the elements, which is called the nucleus of a word-group, towers above the other elements.

3) According to the direction of dependence nuclear multi-word terms are divided into regressive and progressive word collocations. **Regressive word-groups** are characterized by the arrangement of dependent elements to the left of the nucleus of word collocations. In **progressive multi-word terms** the dependent components of word collocations are arranged to the right of the nucleus. Most of English multi-word terms are regressive word-groups, e.g. *young dramatic*

tenor, simple chord *patterns*, wind reed musical *instrument*. Most of French multi-word terms are progressive word collocations, e.g. *crochet de la note*, *accord de neuvième majeur*, *maître de chapelle de cour*, *son fondamental d'un accord*. Russian and Ukrainian multi-word terms may be both regressive [Rus. *тонический органний пункт*, *синкопированная ритмическая фигура*, *народный струнный щипковый инструмент*; Ukr. *інтонаційне ладове мислення*, *синкопований кадансовий зворот*, *старовинний тридольний бальний танець*] and progressive [Rus. *средства музыкального выражения*, *мелодика хорального стиля*, *учение о композиции*; Ukr. *побудова музичного твору*, *концерт для струнних інструментів*, *опера у стилі рок*].

4.3. Multi-word terms in different European languages are built according to the following productive patterns:

1) **A+N** (or **N+A**): Eng. *secular music*, Fr. *système tonal*, Rus. *гармонические фигурации*, Ukr. *хорова кантата*;

2) **N+N**: Eng. *wind band*, Fr. *trombone contrabasse*, Rus. *знаки фразировки*, Ukr. *тривалість ноти*;

3) **P+N** (or **N+P**): Eng. *diminished triad*, Fr. *accord augmenté*, Rus. *арпеджированный пассаж*, Ukr. *транспонууючий інструмент*;

4) **N+pr+N**: Eng. *chord of resolution*, Fr. *accord par quintes*, Rus. *ксилофон с клавиатурой*, Ukr. *плектр для цитри*;

5) **A+N+N** (or **N+N+A**): Eng. *incomplete ninth chord*, Fr. *soprano coloratura lyrique*, Rus. *вязкая фигурация альты*, Ukr. *опорний стояк міхів*;

6) **A+A+N** (or **N+A+A**): Eng. *modern musical language*, Fr. *chanson populaire religieuse*, Rus. *верхний вводный тон*, Ukr. *перетинкові ударні інструменти*;

7) **N+N+N**: Eng. *brass wind instrument*, *membrane percussion instrument*;

8) **A+N+pr+N** (or **N+A+pr+N**): Eng. *upper tone of interval*, Fr. *baryton dramatique d'agilité*, Rus. *комическая опера с речитативом*, Ukr. *каталонський танець зі співом*.

9) **A+A+A+N**: Rus. *одноголосное камерное вокальное произведение*, *духовой язычковый музыкальный инструмент*, Ukr. *духовий дерев'яний музичний інструмент*, *старовинний тридольний бальний танець*.

Summing up one can come to the conclusion that multi-word terms are characterized by the complexity of the grammatical structure and the logical content, by widespread use and by great stability. Multi-word terms come into terminology systems equally with one-word terms.

Like one-word terms, they are submitted to the regularities of functioning in a certain terminology system of a concrete national language and are the elements of this system. Like one-word terms, multi-word terms perform in terminological systems the following functions: nominative, significative, communicative, pragmatic, heuristic and cognitive.

V. Word-building in terminology

5.1. The distinguishing features of term-building

5.2. The semantic way of term-formation

5.3. Affixation as a type of term-building

5.4. Composition as one of the types of term-building

5.5. Shortening as a type of term-building

5.6. The syntactic way of term-building

5.1. The processes of producing new terms from the resources of this particular language are called terminological word-building processes. Together with borrowing terms from general languages, other terminologies and other languages, terminological word-building provides for enlarging and enriching the terminology of the language. It should be stressed that modern term-building is based on the system of word-building of general literary languages. But term-building has some features that distinguish it from word-building of common words. These distinguishing features of term-building are the following. 1) The sphere of functioning of terms is more limited than that of common words, because terminology is not used by all people, but it is used only by some professional groups of people. 2) Term-building is always a conscious process and not a spontaneous one. 3) Term-building is always a controlled and regulated process. Terms are built when they are needed. That's why very often the time of

building of terms and the names of the authors of terms are well-known. 4) The term-building process is more complicated than the analogous process of building common words. 5) The transparency of the internal form is very important for terminological nominations. 6) The act of term-building is dependent on the classification of concepts of a certain branch of knowledge.

The major types of terminological word-building in Modern European languages are the following: 1) semantic type; 2) affixation; 3) composition; 4) shortening; 5) syntactic type.

5.2. The semantic way of term-building is borrowing lexical units from general literary language and giving them a terminological meaning. Thus, common lexical units of the native language acquire the status of terms, e.g. common word *tongue* (the soft part inside your mouth that you can move about and use for eating and speaking) → musical term *tongue* (a little component in wind musical instruments); linguistic term *tongue* (a system of communication by written or spoken words, which is used by people of a particular country or area); common word *tonic* (a clear bitter tasting drink that you can mix with alcohol drinks such as gin or vodka) → musical term *tonic* (the first note in a musical scale of eight notes), common word *frog* (a small green animal that lives near water and has long legs for jumping) → musical term *frog* (a component of a fiddlestick of string musical instruments); common word *giraffe* (a tall African animal with a very long neck and legs and dark spots on its yellow-brown fur) → musical term *giraffe* (a giraffelike piano), the common word *horse-hooves* (the hard feet of a horse) → musical term *horse-hooves* (the name of a musical instrument).

Similar examples in the French language are as follows: the common word *ped* (the part of your body that you stand on and walk on) → musical term *ped* (a component of a grand piano), the common word *tête* (the top part of your body that has your face at the front and is supported by your neck) → musical term *tête* (the top part of a violin, flute or note).

5.3. The process of affixation consists in coining a new term by adding an affix or several affixes to some root morpheme. Examples of automobile affixed terms are as follows: Eng. *cooling* – Fr. *refroidissement* – Rus. *охлаждение* – Ukr. *охладження*, Eng. *acceleration* – Fr. *accélération* –

Rus. *ускорение* – Ukr. *прискорення*, Eng. *equilizer* – Fr. *palonnier* – Rus. *выравниватель* – Ukr. *вирівнювач*, Eng. *deceleration* – Fr. *décélération* – Rus. *торможение* – Ukr. *гальмування*. It should be stressed that the formation of new terms by affixation is based on the patterns of general word-building and it is made with the help of the affixes which exist in general literary languages. Affixation is quite a productive way of word-building in most of terminologies of Modern European languages, especially in the fields of chemistry, biology, medicine and geology. This is probably due to the features that are characteristic of derived terms. They are monosemy, brevity, semantic capacity and convenience of usage.

5.4. Composition (compounding) is the way of term-building in which new terms are produced by combining two or more stems. The structural unity of a compound term depends upon: a) the unity of stress, b) solid or hyphenated spelling, c) semantic unity, d) unity of morphological and syntactic functioning. These are characteristic features of compound terms in all languages. It should be mentioned that for English compounds some of these factors are not very reliable. Composition is one of the four most productive types of term-building in Modern European languages, e.g. Eng. *driveline* (карданна передача), *camshaft* (кулачковий вал), *bonnet-latch* (ручка капота), *baby-car* (малолітражний автомобіль), *dashboard* (приладова дошка), *make-and-break* (переривник), *jack-in-the-box* (планетарна передача), *flywheel* (крутенево колесо), Fr. *porte-balais* (щіткотримач), *attache-capot* (замок капота), *essuie-glace* (склоочисник), *porte-pneu* (держач шини), *siège-tonneau* (ковшоподібне крісло сидіння), *pare-chocs* (амортизатор), Rus. *грузоподъемность*, *воздухоочиститель*, *грязеуловитель*, *автомобиль-амфибия*, Ukr. *повітрянагрівач*, *електромобіль*, *вантажопідіймальність*, *автомобіль-самоскид* in automotive terminology.

5.5. Shortening (contraction) is a new way of word-building in terminology which has achieved a high degree of productivity nowadays. Shortenings are produced in two different ways.

The first way is to make a new term from a syllable of the original word. The latter may lose its beginning (as in *van* made from *caravan* in automobile terminology), its ending (as in *cyl* from *cylinder*, *prop* from *propeller*, *dash* from *dashboard*, *auto* from *automobile*, *tach* from *tachometer* in the same terminology) or both the beginning and ending (as in *fridge* from *refrigerator*).

The second way of shortening is to make a new term from the initial letters of a word-group, e.g. automobile terms in English: *GVW* (*gross vehicle weight*), *FMVSS* (*Federal Motor Vehicle Safety Standard*), *ADS* (*Automatic Diagnostic system*), *FRP* (*fiber reinforced plastics*), *SCE* (*stratified charge engine*), *RV* (*recreational vehicle*), *DOI* (*distinctness of image*), *NADA* (*National Automobile Dealers Association*), *EFI* (*electronic fuel injection*), *RWD* (*rear-wheel drive*). This type is called initial shortenings or acronyms.

It is commonly believed that the preference for shortenings can be explained by their brevity and is due to the ever-increasing tempo of modern life.

5.6. The syntactic way of term-building consists in the formation of stable word-combinations of terminological character. This type of term-building appears to be the most productive one in most of terminological systems in Modern European languages, for example, automobile terms in different languages: Eng. *cylinder casing* – Fr. *fût de cylindre* – Rus. *рубашка цилиндра* – Ukr. *оболонка циліндра*, Eng. *hand brake lever* – Fr. *levier de frein à main* – Rus. *рычаг ручного тормоза* – Ukr. *важіль ручного гальма*, Eng. *clutch release bearing* – Fr. *butée de débrayage* – Rus. *упорный подшипник сцепления* – Ukr. *упірна вальниця зчеплення*. One can say with confidence that the syntactic type of term-building will remain the leading one in the near future.

VI. The semantic relationships in terminology

6.1. Polysemy in terminology

6.2. Synonymic relations in terminology

6.3. Antonymy in terminologies

6.4. Hyponymy in terminology

6.1. The theory and practice of study of terminology systems in different national languages show that some terms can be polysemantic. A polysemic term has more than one meaning, i.e. different concepts are expressed by one term with different meanings but with the same etymological root. It is a very common occurrence in reterminologization (when a term adopts a new meaning, e.g. *mouse-*

rodent and mouse-device) and it may lead to ambiguity if not clearly differentiated.

Identifying **polysemy** may be challenging if you don't have sufficient technical knowledge or if do not have access to the context. In the legal field, for example, the English term *disposition* could have four different meanings: 1) *transferring something to another's possession*, 2) *a final settlement of a case by court*, 3) *a provision in a statute*, or 4) *personal temperament of traits of character*. In the sphere of linguistics the English term *grammar* could have 3 different meanings: 1) *the structure and rules of a language*, 2) *the set of conventions outlining how to speak and write in an acceptable fashion*, or 3) *a formalized notation for describing the structure and rules of a language*; and the term *etymology* has got 2 different meanings fixed in dictionaries: 1) *a history of the origin and evolution of a word*, or 2) *the area of study that concerns itself with history of words*. In English musical terminological system the term *clef* could have 2 different meanings: 1) *a sign at the beginning of a line of written music to show the pitch of the notes*, e.g. *treble / bass clef*, 2) *a valve in musical instruments* and the term *music* has the following 3 different meanings: 1) *a series of sounds made by instruments or voices in a way that is pleasant or exciting*, 2) *the art of writing or playing music*, 3) *a set of written marks representing music, or paper with the written marks on it*.

It should be stressed that the term is polysemantic in the language but in actual speech it is always monosemantic, that is, it has only one meaning. It is the context that makes the polysemantic term monosemantic.

Polysemy is very frequent in common language and quite frequent in terminology, it is produced as a consequence of extending the meaning of a previously existing word or term to name a new thing, it means, a word or a term with one or several meanings to adopt another meaning. In this way polysemy allows to increase the number of named concepts without enlarging a common lexicon or scientific terminology.

6.2. How does **synonymy** represent itself in scientific terminology? Despite a basic principle stating that terms must be precise and unambiguous, terminological synonyms are on no account

rare in a scientific terminology. In general in different fields of science and technology there are 3 types of synonymy.

In the first place, domestic words and loanwords coexist in the sphere of terminology of different national languages. For example, in English linguistic terminology system: *sound-imitation* – *ономатопея*, *origin* – *етимологія*; in Russian linguistic terminology system: *языкознание* – *лингвистика*, *уподобление* – *ассимиляция*, *определение* – *атрибут*, *звукоподражание* – *ономатопея*, *чередование* – *альтернатива*, *многозначность* – *полисемия*, *однозначность* – *моносемия*, *опрошение* – *деэтимологизация*, *перегласовка* – *умляют*, *вид* – *аспект*, *односложность* – *моносиллабизм*.

In the second place, in scientific and technological terminologies there are syntactical synonyms, which are represented by three groups of synonyms.

1) Synonymic correspondence ‘word – word-collocation’. In the English automobile terminology: *Wankel* – *Wankel engine* (двигун Ванкеля), *knob* – *manual choke knob* (витяжна ручка повітряної заслінки), *pickup* – *pickup truck* (пікап), *rig* – *tractor trailer* (автопотяг) etc.

2) Synonymic correspondence ‘word-collocation – word-collocation’. In the English automobile terminology: *tail pipe* – *exhaust pipe* (вихлопна труба), *air bag* – *air cushion* (надувна подушка безпеки), *body sheet* – *body panel* (панель кузова), *brake shoe* – *brake skid* (гальмівний підкладень), *ignition plug* – *spark plug* (запальна свічка), *discharge outlet* – *discharge hole* (вихлопний отвір), *planetary gearbox* – *planetary transmission* (планетарна коробка передач) etc.

3) Synonymic correspondence ‘the full form of term – the short form of term.’ In English automotive terminology system: *carburetor* – *carb* (карбюратор), *limousine* – *limo* (лимузин), *accumulator* – *accu* (акумулятор), *propeller* – *prop* (пропелер, рушій), *early fuel evaporation* – *EFL* (система попереднього випаровування палива), *brake horse power* – *bhp* (ефективна потужність), *controlled vortex combustion chamber engine* – *CVCC engine* (двигун з керуючою вихровою камерою згоряння), *fiberglass reinforced plastics hood* – *FRP hood* (капот із склопластика), *variable venturi carburetor* – *VV carb* (карбюратор з регулюючим дифузором) etc.

And in the third place, there exists definitional synonymy in terminologies of different fields of knowledge. Here belong the cases of parallel usage of terms and their definitions. In this case term denotes scientific notion, but notion could be expressed by the definition of term, as well, for example in Russian literary criticism terminology: *эпитет – слово, определяющее предмет или явление и подчеркивающее какие-либо его свойства, качества или признаки; романс – небольшое стихотворение и музыкальное произведение для пения с инструментальным аккомпанементом; сказитель – исполнитель народных песен.*

So, synonymy in terminological systems of different national languages is a frequent, regular and inevitable phenomenon. Synonyms in terminologies have their own characteristic features and semantic peculiarities. In terminology synonyms are always identical in meaning and are interchangeable in any context. They are termed complete or absolute synonyms.

6.3. The essence of terminological antonymy involves identifying the opposite conceptions in the special sphere of knowledge.

In all sciences, any complex structure can be decomposed and represented as binary structures of hierarchy, a fact which outlines the importance of using antonyms both in common language and terminology.

Antonyms may be interpreted as correlative words that are engaged in contrary semantic relations and have been anchored in the consciousness of speakers in the form of couples having a linguistic value and in context they regularly appear in direct opposition with similar combinatorial possibilities. For example, in English automobile terminology there exist such pairs of antonyms as: *cooler – heater, cooling – heating, fastening – unfastening, charge – discharge, overdrive – underdrive*, and in Ukrainian linguistic terminology there are such pairs of antonyms as: *однина – множина, гіпербола – літота, термінологізація – детермінологізація, префікс – постфікс, полісемія – моносемія, пряме значення – переносне значення.*

Antonymy in terminologies have their own linguistic nature, their own semantic, structural and functional peculiarities. It is clear that only context can highlight the true meaning of antonyms.

It should be stressed, that the structural types of terminological antonyms are more various than in common language. Antonyms can be found both among one-word terms and multi-word terms.

Among one-word terms two structural subgroups of antonyms could be singled out, for example in English medicine terminology: 1) pairs of antonyms of different opposed roots: *dilation / compression; motion / rest, pause; anabolism / catabolism, vasodilation / vasoconstriction, constipation / diarrhoea, flexion / extension, pronation / supination*; 2) pairs of antonyms having the same root and one member having an antonymic prefix in order to establish the opposition between meanings: (a) prefixes having a negative meaning: *vitaminosis / avitaminosis; indication / contraindication; contamination / decontamination; assimilation / dessimilation, stability / instability*; (b) directional prefixes: *flexion / anteflexion; mastectomy / postmastectomy; diabetes / prediabetes; molar / retromolar*; (c) quantitative prefixes: *paresis / hemiparesis; glycemia / hyperglycemia, acidity / hiperacidity; thyroidism / hypothyroidism, metabolism / hypometabolism; trauma / microtrauma; esthesia / macroesthesia, virus / ultravirus*.

Among multi-word terms antonyms are quite widespread in different terminologies. Among them two-word terms and multi-word ones are singled out. In the structure of a multi-word term there is always a major component which is called the nucleus and two or more dependent components. The nucleus is usually represented by noun, as for dependent components, they can be expressed by nouns, adjectives and participles having the opposite meanings in these pairs of antonyms. For example, in English railway terminology such pairs of antonyms could be found: *up train – down train, high bank – low bank, broad gauge – narrow gauge, high load – low load, top dead centre – bottom dead centre*. In Ukrainian linguistic terminology the examples of antonyms are as follows: *пряма мова – непряма мова, відкриті склади – закриті склади, вільна морфема – зв'язана морфема, прості числівники – складні числівники, повнозначні класи слів – неповнозначні класи слів, активний стан дієслова – пасивний стан дієслова, зовнішньо-синтаксична структура речення – внутрішньо-синтаксична структура речення*.

Antonymy is a very common semantic relationship most often encountered both in specialized texts and in the general ones, as well,

which frequently registers instances of grading or ranking on a certain scale of value, ordering concepts.

Antonymy in terminological systems of different fields of knowledge is considered rather a positive phenomenon than a negative one, because it furthers the satisfaction of the requirements of monosemy and systemic character of terms, does not hinder the carrying-out of their functions and furthers the simplicity and clarity of terminology.

6.4. It is well-known that **hyponymy** as an independent lexico-semantic category plays a very important role in the systematization of lexical systems of national languages in general and terminological systems in particular.

The notion of hyponymy is traditional enough, it has been long recognized as one of the main principles in the organization of the vocabulary of all languages. For instance, *animal* is a generic term as compared to the specific names *wolf, dog, sheep, bear, fox, rabbit, lion, tiger* etc. *Dog*, in its turn, may serve as a generic term for different breeds such as *bull-dog, collie, poodle, sheep-dog, dachshund* etc.

In other words, this type of semantic relationship means the 'inclusion' of a more specific term (hyponym) in a more general term (hyperonym or hypernym), which has been established by some linguists in terms of logic of classes. For example, the meanings of the names of species, e.g. *tulip, rose, geranium, lily, bluebell, daisy, forget-me-not, lily-of-the-valley* may be included in the meaning of *flower* which functions as the generic term.

Therefore, the terms of botany *tulip, rose, geranium, lily, bluebell, daisy, forget-me-not, lily-of-the-valley* are **co-hyponyms**, i.e. **hyponyms** of the same **hyperonym**. Looking at this from the opposite angle, *flower* is a hyperonym with respect to *tulip, rose, geranium, lily, bluebell, daisy, forget-me-not, lily-of-the-valley*.

Hyponymic relations are universal ones and they can be found out in all terminological systems of different national languages. For example, in musical terminological system of the English, French, Russian and Ukrainian languages a hyperonym: Eng. *recitative* – Fr. *récitatif* – Rus./Ukr. *печумамує* includes such hyponyms as: Eng. *recitativo secco* – Fr. *récitatif secco* – Rus. *сухой печумамує*, Ukr. *сухий печумамує*, Eng. *accompanied recitative* – Fr. *récitatif accompagné* –

Rus. *аккомпанированный речитатив* – Ukr. *акомпонований речитатив*; and such a hyperonym as Eng./Fr. *notation* – Rus. *нотація* – Ukr. *нотація* includes the following hyponyms: Eng. *letter notation* – Fr. *notation alphabétique* – Rus. *буквенная нотація* – Ukr. *літерна нотація*, Eng. *pneumatic notation* – Fr. *notation pneumatique* – Rus. *невменная нотація* – Ukr. *невменна нотація*.

Hyponymy is an independent lexico-semantic category which has its own language specificity in terminology. Hyponymic relationships belong to universal, fundamental paradigmatic relationships with the help of which the vocabularies of national languages and terminologies of different sciences are structured. Hyponymic relations of terms are considered to be the universal way of thematic hierarchical organization of terminological systems. The main functions of hyponyms in terminologies are systematization of terms and interpretation of meanings.

VII. The development, state and topicality of Ukrainian terminology

7.1. The development of the present-day terminology

7.2. Changes in the situation and role of terminology

7.3. The current state of terminology, its topicality and tasks

7.1. The scientific style of the Ukrainian language began to develop from the second half of the 19-th century. For this development the terminological vocabulary was necessary. Such vocabulary existed in the Ukrainian language and by the second half of the 19-th century a great terminological stock had already been formed. Terms of different fields of science, technology and culture were fixed in the literary works of such Ukrainian writers as P. Grabovsky, M. Kotsyubinsky, P. Mirnyi, I. Franko and others. It was mainly the terminology of agriculture, building, economics, politics, philosophy, law and literature. During the 20-th century the Ukrainian terminology was being very fruitfully created, renewed, revised and regularized.

7.2. During the 20-th century in Ukraine and in other countries the place and role of terminology in the nominating system of the language, in the state life and language usage has changed substantially.

First of all the scope of terminology grew significantly. This is directly related to the rapid expansion of language functions. After the establishment of independence of Ukraine in 1991 for the first time in its history the Ukrainian language became a state language and came into usage in all levels of state life, economy, culture and education. The last decade of the 20-th century and the first decade of the 21-st century became a time of very rapid and intense maturing of the standard language and also for the creation and development of the terminology.

Secondly, during the 20-th century people's education level had changed radically. At the beginning of the century the largest part of population in the best case had a primary education and at the end of the century – fully or partly completed secondary education. By comparison with the turn of the century a number of people graduating from higher or special professional schools and number of people with scientific degrees increased significantly. The changes in people's education conditioned the situation when many terms are familiar to everybody and many of them are used in everyday speech. So it can be concluded that a modern man/woman faces terms of various fields everywhere – when studying, at work or at home, during leisure time or when traveling, watching television or listening to the radio, reading periodicals, books, operational manuals, instructions etc. These things ensure that nowadays people are acquainted with thousands of terms and use a part of them in their everyday life themselves.

So it can be concluded that in modern developed languages terminology exists not at the periphery of the nominating language system as it was earlier. During the 20-th century terminology was approaching the centre of this system. Some part of terms, especially common terms, is already in the centre of the nominating system, i.e. it already belongs to the main part of the vocabulary. This phenomenon is common to all developed languages and is directly related to the progress of society, to the essential changes of people's life in the 20-th century.

The conclusion is clear – since the end of the 19-th century terminology became the main line for the replenishment of the

vocabulary and other nominative means and for the development of the language itself. This shows that people doing terminological work are responsible for preservation of the originality of terminology and through this for the originality of the language.

7.3. Modern Ukrainian terminology science is a branch of linguistics of full value. The founder of it was Ivan Verhratsky. Nowadays Ukrainian terminology science has five trends: 1) linguistic problems of terminology science; 2) terminology studies of individual modern languages; 3) the history of formation, coming into being and development of individual terminologies; 4) comparative and contrastive terminology science; 5) terminology science of functional styles. The well-known scientists working in the field of terminology science in Ukraine are I. Kochan, I. Kvitko, T. Kiyak, Z. Kudelko, G. Matsyuk, T. Panko, L. Simonenko, E. Skorohodko, A. Kryzhanovska, F. Tsitkina, T. Prystaiko and many others.

In Ukraine there are 122 technical committees which are doing terminological work. These are the Committee of Scientific Terminology of National Academy of Sciences of Ukraine, Technical Committee of Standardization of Scientific and Technological Terminology, a number of terminological commissions (National commission on chemical terminology, Ukrainian commission on problems of law terminology, Kharkiv terminological centre) etc. From 1995 to 2015 the Committee of Scientific Terminology organized and held 10 All-Ukrainian and International Conferences ‘The Ukrainian terminology and Contemporaneity’ and published the materials of the conferences in the collections of scientific articles. From 1992 till 2016 the Technical Committee of Standardization of Scientific and Technological Terminology initiated and conducted 14 international conferences ‘The problems of the Ukrainian Terminology.’ This committee publishes regularly ‘The Bulletin of the Technical Committee of Standardization of Scientific and Technological Terminology’ and the journal ‘The Bulletin of National University of Lvivska Politechnica’ (the series ‘The problems of Ukrainian terminology’).

Developing together with the general national language as its constituent the terminology of the Ukrainian language is being constantly enriched and perfected. The last decade of the previous century and the first decade of this century saw a growth of

preparation and publication of big, medium-sized and small terminological dictionaries in the Ukrainian language.

Ukrainian terminology science has entered the new century updated and disposed to optimism. The qualification of ‘terminologist’ is recognized by some international educational bodies. In assessing the future development of terminology science for the decades to come, there are grounds to hope that Ukrainian terminologists will keep strengthening their connections with foreign colleagues and, in particular, with terminologists from the countries of Central and Northern Europe.

VIII. Some tendencies of terminology in the era of globalization

8.1. The importance of terminology in the era of globalization

8.2. Globalization of industry, economics, culture and its consequences

8.3. The main directions of terminology research for the current century

8.1. The importance of terminology in the era of globalization stems from the fact that nowadays the rapid growth of scientific and technological knowledge is practically impossible without paying attention to the state of terminology. Special lexical units comprise more than 90 percent of the new words in modern languages. The growth of scientific and technical vocabulary is much faster than that of the everyday speech vocabulary, so at present the number of terms in some sciences exceeds the number of common words. We can compare the following figures: the full, unabridged version of the Webster’s dictionary contains about 700,000 English words and at the same time English construction terminology numbers more than 150,000 words, modern biological terminology exceeds a million names for varieties of living beings, in chemistry we know more than 1.5 million substances.

Special vocabulary not only already comprises the major part of any advanced national language but also is the most dynamic strata of language. The so-called ‘information explosion’ – the extremely rapid growth of flows of scientific and technological information – caused a

terminological explosion – that is an enormous growth of the number of new terms.

8.2. Globalization of industry, economics, culture, even everyday life – results in forming of new conditions of the existence and interaction of the national languages.

One of them is the lessening of the number of the actively used languages. According to the UNO calculations during the current century approximately 2,500 of the presently functioning 3,000 languages will disappear from active usage.

There may be two causes for disappearance of national languages – the most natural one being the narrowing of the sphere of application of a national language transforming it into a local dialect and the next one is the influence of a closely related language with the historically determined traditionally wide spectrum of functioning.

It follows that the surviving languages will widen their functional domain and territory outside the countries of their origin. With the commencement of international application of some of the existing languages we come across the problem of their effective usage. Therefore working out sound impartial recommendations based on the analysis of natural processes of evolution and, in particular, international interaction of languages becomes a necessity. Such recommendation first of all should be concerned with terminology because, firstly, special vocabulary comprises the majority of lexical units in advanced languages, secondly, because this part of word-stock may be most easily regulated and, thirdly, because controlling special vocabulary may enhance greatly the progress of science and technology.

Ordering of special lexical units is a necessary pre-requisite for the communication of the specialists. It is also very important for professional training, for the right choice and systemic presentation of terminology facilitates greatly the understanding of the corresponding system of concepts; it is crucial for exchanging scientific information and advancing various computer systems of organizing and processing information. For example the existing systems of machine translation would be greatly improved if terminologies of at least the most used languages were harmonized.

Lately it was found that the state of terminology may influence the rate of growth of knowledge. For example the term ‘chemical

analysis' introduced by Robert Boyle played an important role in understanding manipulation of substances as purposeful activities and contributed to establishing chemistry as a science. Even more influence on development of science has an introduction of a system of terms. Thus the introduction of biological nomenclature in the 18-th century lead to the extraordinary development of biological sciences and stimulated the analogous activities in chemistry. On the other hand there are many instances of stagnation or complete absence of progress in sciences due to inadequate terminology or absence of the necessary terminology.

This connection of language and knowledge, which becomes one of the most important factors of human life and development of humankind, shifted the interest towards studying language as a means of acquiring and organizing knowledge.

8.3. In the present condition several directions of terminology research for the current century seem to be promising.

The first is the typological study of different terminologies. In typological studies as the result of description and study of various terminologies it was found that terminology science should not limit itself to investigation of terms proper, for there are other special lexical units such as nomenclature units or nomens, proto-terms, pre-terms, quasi-terms, terminoids, professionalisms and professional slang. Therefore there is a need to investigate specific features not only of terms but also of term elements and nomens. Already there exist dictionaries of international term elements that could be used in forming new terms. There is a need to set rules also for coining nomens for there is a great demand for new internationally understood names of products.

The second is the comparative study of terminology of different languages. In comparative studies there is a need to study the causes for historical divergence of lexical systems of languages. Sometimes in related languages the same or similar form may carry quite different meanings or shades of meanings thus causing many inconveniences in international communication.

The perspectives of terminological research and practical activities for the current century might be quite promising under beneficial circumstances leading to the elaboration and application of the set of rules for controlling the development of special languages.

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TEXTS FOR ADDITIONAL READING

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Introduction to Terminology

Lesson 1: Terminology

Lesson 2: Term and word

Lesson 3: Characteristics of terms.

Lesson 1: Terminology

1.1. Definition of Terminology

Terminology is a science whose aim is to study terms, which are lexical elements used in specialized fields (subjects or their branches) and generated in such fields or modified from elements already existing in other fields. Terminology allows the compilation, description and presentation of terms.

- Compilation of terms: preparation of lists with terms belonging to a certain subject, according to a previously established methodology.

- Description of terms: definition or definitions of each term (semantic focus) and description of the elements composing the term and its generation process (morphological focus).

- Presentation of terms: preparation of dictionaries.

Terminology has some aspects in common with Lexicography, although the differences between the nature of the lexical objects studied caused the development of Terminology's own theories on the lexical elements of a language and Terminology's own methodology based on such theories. This allows considering Terminology as a science separated from Lexicography.

'Terminology' is a polysemic word referring to three different aspects related to compilation, description and presentation of terms:

- Terminology as a theory: this is a collection of premises, arguments and conclusions on the relations between concepts of the words used to represent them and the nature of such words.

- Terminology as a practice: this is a collection of practices and methods, resulting from putting the theory into practice, that allows bringing out the compilation, description and presentation of terms according to internationally standardized techniques. All in all, it is the collection of activities leading to the preparation of dictionaries.

- Terminology as a thesaurus: it is the structured collection of all the words and expressions used in a specific science. It results from the application of terminological theory and practice. It could be said that a terminology, in this sense, is a specialized dictionary – the specialization is the belonging to a specific subject, a specialized field of knowledge. Thus, in this case, the word ‘terminology’ needs to go with the name of the science whose terms have been compiled (for instance, chemical terminology, computing terminology, linguistic terminology etc.)

Some authors make the difference between Terminology and Terminography (similar to the distinction between Lexicology and Lexicography). In this case, Terminography is the art of making ‘terminologies’, meaning ‘specialized dictionaries’. So, to these authors Terminology encloses the theoretical component and the result of applying the terminological theory and practice (the specialized dictionary).

1.2. Subjects related to Terminology

Terminology is a science itself, with its own theories on the specialized vocabulary of a language and the methodology to work with it; however, it takes some aspects from other sciences:

- Philosophy and Epistemology

From these two sciences, Terminology takes, among others, the theories on how knowledge is structured, the generation and representation of concepts, the enunciation of definitions. It takes specifically from Epistemology, the way knowledge is organized in each subject, since there is a tight relation between the organization of scientific concepts and sorting the terms used to represent such concepts.

- Psychology

Terminology takes from this science theories related to the mind processes of each person about perception, understanding, communications etc.

- Linguistics

From this science, it takes theories on lexicon and the way it is structured and generated.

- Lexicography

From this science, Terminology takes the theories and methodologies for the sorting and description of lexical units in order to be presented in dictionaries.

To these sciences we could add Computing, as a necessary technology nowadays to prepare dictionaries and terminological databases. International standardizing organizations also have a main influence in the methods used for the compilation and presentation of terminologies. The specialized dictionaries and terminological databases are the visible results of Terminology. They make this science known in the most varied fields.

Lesson 2: Term and word

In Terminology, the ‘term’ or ‘terminological unit’ is the meaning unit made up of one single word (simple term) or several words (complex term) and represents a concept in an univocal way in a specific semantic field (Office of the French Language of Quebec). From this definition, we can understand that a term is a specialized word in relation to its meaning and the field in which it is used. It is considered in that way when used in a certain context in which it takes the function of a ‘term’.

Terms can be more or less complex lexical units that are generated by following several processes:

- The extension of the meaning of a word in the standard language (for instance, ‘mouse’ in computing terminology is a device that allows the user to interact with the computer).
- Generation of a phrase that functions as a whole with one specialized meaning (superconducting magnet).
 - Symbolic expressions, as chemical element symbols (Na) or chemical and mathematical formulas (H₂SO₄).
 - Abbreviations (PVC) and acronyms (NATO, from North Atlantic Treaty Organization).
 - Names of posts (Prime Minister), organizations or administrations (United Nations Organization).

The border line between word and term is drawn by the use of the lexical unit in a specialized field of knowledge with a specialized meaning or not. That is why a certain level of specialized knowledge is needed to recognize a term (we will only know that mouse is a term if we know the computing terminology). The characteristics of a text – communicative purpose, subject, specialization grade – are also helpful to recognize the presence of terms.

In order to establish the limit between term and word, it is important to know the characteristics of terms in a specialized language. According to Gutiérrez Rodilla (1998: 88-94) the characteristics of terms are precision, emotional neutrality and stability over time. For instance, ‘aplasia’ is a medical term meaning incomplete or faulty development of an organ; it is monosemic which implies precision; it is neutral emotionally; and finally, it is stable over time since it has been used without any variation in use, form and meaning for a long period of time in scientific documents.

There are variations in the use of terms depending on the specialization grade of the discourse. The terminological density, which means, the amount of terms in a text is conditioned by the kind of discourse:

- specialized discourse: aimed at experts (there are different specialization levels).
- Didactic discourse: aimed at education.
- Informative discourse: aimed at people without a specialized knowledge of the subject.

The amount of terms used will be very different in these discourses. The level of competence of the text users on the subject presented increases in accordance with the amount of terminologies used (Condamines, 1993). In this way, the specialized communication requires the terminology to be adapted to each type of text. This type is determined on the quantity of information shared between producer and user of the text and the purpose of the text (Marinkovich, 2006). We will not find the same number of terms in the Penal Code as in a generalist newspaper’s news item on a trial.

Lesson 3: Characteristics of terms

The reality around us is made up of a wide variety of objects that are observed or simply seen. The human mind is able to perceive every object and generate a conceptual image that allows recreating the object even if it is not within our senses' reach. In human communication, it is necessary to represent an object concept with a material and recognizable with the means available for humans.

In a verbal language such representation is the word – oral or written – and the term in specialized communication.

Thus, the term, as with any other word, is a sign with a triple dimension:

- Linguistic: the signifier (the formal aspect of the term).
- Cognitive: the meaning of the concept represented by a term.
- Ontological: the referent, the object from reality to be named.

The three dimensions give three different, but related, aspects of terms:

- Linguistic dimension – symbolic aspect: this refers to a term as a symbol representing an object, a referent.
- Cognitive dimension – conceptual aspect: in relation to the concept that allows the human mind to keep the referent.
- Ontological dimension – referential aspect: the referent itself to be named and understood.

Aspects of a term

To the three dimensions already explained, it is possible to add a fourth one that is implicit at the beginning of this section, the communicative dimension (associated with a discursive aspect). According to this dimension, the terms are inserted in a discourse with the purpose of taking part in the message produced in a communicative event. From this communicative point of view, the sender of the message, the author of the text, uses each term with a sole meaning, regardless of whether it is the term's meaning, one chosen among the different concepts and referents represented by a single polysemic term, or an altered, modified or adulterated meaning that the author assigns to a term accidentally (perhaps due to a lack of competence in a specialized knowledge) or intentionally (a personal use of language and terminology).

The balance in the relations between the different dimensions and aspects defines the characteristics of each term, but not all the terms share the same level of relations, that is why the features of terms as a whole are more of a trend, desired by their producers and users, than a reality. According to Gutiérrez Rodilla (1998: 88-94) the features of terms are precision, emotional neutrality and stability.

Precision

If a term is precise, then its communicative dimension is unchanging, it means, its meaning does not depend on the context, the discourse in which it is inserted nor the sender of the message nor any other factor of a communicative event. This does happen in the standard communication. Terms have to submit three conditions to be really precise, according to Gutiérrez Rodilla:

- Its meaning has to be previously delimited.
- This meaning has to be monosemic and there has not to be any synonym.
- The relation established among the terms of a system has to be the same as the one among the concepts.

These three conditions are referred to as the immutability of the cognitive dimension. This dimension can be altered in other fields of communication because of emotional reasons, perhaps to ease the content or the purpose of a message, but in a specialized text terminological imprecision is associated by the experts in the topic with conceptual imprecision.

Let us study each of the three conditions.

- Its meaning has to be previously delimited.

To delimit the meaning of a term, it is necessary to enunciate a definition to establish a relation between the term and the concept. Such definition allows comparing the term with others already existing and defined in order to recognize the differences.

In the standard register, words also have their definitions, but the meaning of the words can be altered in standard communication to introduce the feeling, expressiveness, and creativity of the speakers. This should not happen with terms in specialized communication, since the main purpose of such communication is, generally, the transmission of objective information that cannot be altered by any feeling, expressiveness nor creativity. We said ‘generally’ because

there are situations where specialized communication for other purposes, in addition to the transmission of information, can be observed. Such is the case of publicity in specialized media (e.g. the advertisement of a machine published in a journal on a certain productive sector aimed at experts; the purpose of the advertisement is to persuade the receiver of the message that the machine is good enough to be bought).

- This meaning has to be monosemic and must not be a synonym.

A term is monosemic when it has only one meaning, representing a single concept. If a monosemic term has, in addition, no synonym, there is a univocal relation between term and concept leading to precision. This univocity is more usual among terms in specialized communication than in the standard register in which polysemy and synonymy are numerous. It may be possible that a term is monosemic in the field of a science, but has, at the same time, several meanings in other sciences and in the standard register; in this case, there is a univocal relation in such field.

- The relation established among the terms of a system has to be the same as the one among the concepts.

Terms represent concepts related among themselves in the field of a science according to the nature of the concepts (mathematical theorems, kinds of laws, parts of the human being etc.) Each science establishes the way its concepts are classified, generating hierarchical relations or other types of relations among them. Terms, that are images of those concepts, are also related among themselves with the same relations as the concepts. Thus, we can find hyperonyms, hyponyms, co-hyponyms.

In non-specialized communication we do not always find these logical relations among words. For instance, in the standard register there are differences between *beef*, *cow*, *bull*, and *ox*, but for a zoologist all of them are individuals of the same species, regardless the gender and the age.

Emotional neutrality

The use of terms has to be free of affective, personal or subjective components, that are observed in the standard register. They affect to the conceptual content of the transmitted information, which modifies the message and makes communication more difficult.

Only when the sender and receiver know the emotional components used, can communication be kept correct. In specialized fields the emotional interference is categorically rejected.

The emotional neutrality of terminologies fades when sciences cross their specialized fields and some terms are used in the common language. Thus, 'parasite', Biology's term used to name an animal or vegetal living in, with or on another organism, and feeding from it, has in the standard register the meaning of a person living at other people's expense from a social-economical point of view. Similarly, in Psychology, 'hysteria' is a mind disorder, while in the common language it is used in a figurative way to represent behaviours exhibiting emotional excess.

Stability

Stability refers to the validity of a term (with its concept and referent associated) over time. This desired stability is not always achieved, since as research goes on, the concepts are modified and, consequently, the meaning of terms changes or is even erased. Over time, two research groups may generate two different terminologies; the use of one or both terminologies may imply the agreement or recognition of one of the research lines, which influences the neutrality of terms.

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Terminology Science

Terminology science is a branch of linguistics studying special vocabulary. The main objects of terminological studies are special lexical units (or special lexemes), first of all terms. They are analyzed from the point of view of their origin, formal structure, their meanings and also functional features. Terms are used to denote concepts, therefore terminology science also concerns itself with formation and development of concepts, as well as with the principles of exposing the existing relations between concepts and classifying concepts; also, with the principles of defining concepts and appraising the existing definitions. Considering the fact that characteristics and functioning of term depend heavily on its lexical surrounding nowadays it is common to view as the main object of terminology science not separate terms, but rather the whole terminology used in some particular field of knowledge (also called subject field).

Terminological research started seventy years ago and was especially fruitful at the last forty years. At that time the main types of special lexical units, such as terms proper, nomens, terminoids, prototerms, pre-terms and quasi-terms were singled out and studied. The main principles of terminological work were elaborated, terminologies of the leading European languages belonging to many subject fields were described and analysed. It should be mentioned that at the former USSR terminological studies were conducted on especially large scale: while in the 1940s only four terminological dissertations were successfully defended, in the 1950s there were 50 such dissertations, in the 1960s their number reached 231, in the 1970s – 463 and in the 1980s – 1110.

As the result of development and specializing of terminological studies, some of the branches of terminology science – such as typological terminology science, semasiological terminology science, terminological derivatology, comparative terminology science, terminography, functional terminology science, cognitive terminology science, historical terminology science and some branch terminology sciences – nowadays gained the status of independent scientific disciplines.

(From Wikipedia)

Terminology

Terminology Science (often abbreviated to terminology) is an interdisciplinary study of the principles and theoretical bases of concepts, concept systems and the designations of the concepts in scientific, technical and other professional fields. Its origin lies in the efforts to solve professional communication problems resulting from the internationalization of commerce, technology, and science in the 20th century. A variety of practice-oriented terminological activities consists of: terminology work (terminography, terminological lexicography), terminology standardization, terminological information and documentation, terminology planning and terminological training. In general language use, the term *terminology* normally refers to the set of (technical) terms on a specific topic or in a specific field. *Terminology* is also used to refer to TS, the theory of terminology, or terminological research, or to any of the practical activities applying its findings. The term *terminology science* is created according to the model of the German terms *Terminologiewissenschaft* and *Terminologielehre*. It is widely used in international contexts even though English native speakers frequently reject the word *science*, and prefer, e.g. ‘terminology studies’. Wright and Budin (1997) have introduced the term *terminology management* to cover ‘any manipulation of terminological information’, i.e., practically all of the activities listed above.

1. Background and development

Early on, many scholars and other specialists came to realize the importance of using accurate terminology in their fields, and e.g. Linnaeus (1707-1778) and Lavoisier (1743-1794) created systematic nomenclatures for their respective fields. By the end of the 19th century, international rules had been established for botany, medicine, chemistry etc. Different kinds of cooperative terminological activities appeared as a result of the industrial revolution. TS was established by the Austrian engineer Eugen Wüster (1898-1977), whose doctoral dissertation ‘Internationale Sprachnormung in der Technik, besonders in der Elektrotechnik’ was published in 1931. He brought together theories and methods from several disciplines, such as linguistics,

logic, ontology, and information science. Linguistics, especially lexicology and lexicography, had created a foundation for describing general language vocabulary, but was not yet sufficient to cope with Language for Special Purposes or their vocabularies. The basic axioms of the general theory of terminology are: (i.) TW starts from a concept (cf. lexicography) and its goal is to delimit the concepts clearly from each other; (ii.) concepts and terms are seen as separate units; (iii.) emphasis is on a synchronic view; (iv.) concepts and terms can only be studied in their relation to the related concepts and terms; and (v.) organization of terminological entries is systematic or thematic instead of alphabetic. It was also seen as necessary to manipulate the lexical resources used in special fields consciously.

2. Basic Elements of Terminology Science

The basic elements of TS and TW are objects (of reference), concepts, the characteristics of concepts, concept relations and systems, terms and other concept presentations (definitions, LSP phrases, non-verbal representations), and the relations between concepts and terms (e.g. synonymy, polysemy, mononymy, homonymy, equivalence). As an interdisciplinary field, TS encounters certain problems when it comes to its own terms and concepts, since it has borrowed many them from various fields and adapted them to its specific needs.

2.1. Object - concept - characteristics

In TS concepts are often defined as units of thought formed by abstraction or as units of knowledge. Concepts consist of characteristics, based on properties observed in a (material or immaterial) object or in its relation to other objects. An analysis of the characteristics of a concept is needed for delimiting a concept from its *superordinate concept* and its *coordinate concepts* as well as from its own *subordinate concepts*. Characteristics can be divided into *intrinsic* and *extrinsic* ones. The intrinsic characteristics are based on the properties of an object in itself, e.g. material, consistency (of a substance, chemical), structure, quality, form, color, size, quantity, form of existence etc. The extrinsic characteristics are based on properties that can be observed when an object is seen in its relation to other objects, e.g. sequence, age, duration, frequency, location, reason, cause, purpose, aim.

2.2. Concept relations and systems

TS emphasizes that concepts are not discrete elements, but related (concept relations) to others; together they form networks of concepts (concept systems). In TW, an analysis of concept systems is used to provide an overview of a special field, to delimit concepts, to define them, to form new terms and to evaluate existing and competing terms, as well as to structure systematic glossaries and other systematic representations. Graphic representations (e.g. tree diagrams, bracket diagrams) are often used to visualize the concept system(s). Concept relations and systems can be classified into logical and ontological. Sometimes logical concept systems are called *taxonomies* or *typologies*. The *ontological* concept relations and systems are based on the relationships observed on the object level, e.g. whole–part and part–part, object–location, simultaneous or consecutive events, cause–effect, effect–effect, object–material, object–origin, activity–agent, sender–object–receiver–channel, object–representation etc.

2.3. Definition

In TS and TW it is generally acknowledged that it is not enough to collect lists of terms and their equivalents in different languages; rather, definitions are needed. An ideal definition describes the contents of a concept (in-tension) and distinguishes it clearly from neighboring concepts (see 2.1). A definition also provides a link between the concept and its designation(s). Unambiguous definitions are seen to be a pre-requisite for high-quality terminology. For practical TW there exist rules for definition writing. Definitions are also an object of basic terminology research, e.g. different types of definitions, definitions of concepts referring to actions and events, and non-verbal definitions.

2.4. Terms

Terms can be defined as linguistic designations of specialized concepts. They are more precise than non-terms and belong to systems of terms that correspond to concept systems. Traditionally, terms are associated with nouns, even though adjectives, verbs, and adverbs may also be terms. Term formation mainly follows the same rules as does general language vocabulary. Characteristic to the terminologies are,

however, high numbers of borrowings, compounds, and abbreviations. According to handbooks, an ideal term is: (i.) logical and self-explanatory, (ii.) harmonized with other terms within the same system, (iii.) complies with the syntactic and morphological rules of the language; (iv.) capable of producing derivations and compounds; (v.) as short as possible without affecting its clarity; (vi.) clearly different from other terms, and preferably has no synonyms or homonyms, nor is polysemous, nor has any orthographic or morphological variations; and (vii.) accepted by users. In practice, however, these requirements cannot always be met. Research interests have extended to LSP phraseology (e.g. *to browse the WWW*), non-verbal signs of concepts and acceptance of neologisms.

3. Terminological Concept Analysis

Terminological concept analysis consists of: a) extracting the concepts and terms and preliminarily ordering them; b) analyzing the characteristics of the concepts; c) analyzing the relationships between the concepts and establishing a concept system representation; and d) connecting the terms to the concepts, and vice versa, including detecting synonymy, polysemy and homonymy. Concept analysis can be applied to just one concept and its terms and equivalents in another language (ad hoc analysis), or for projects designed to cover a larger area of mono- or multilingual terminology. Terminological concept analysis is not used only for compiling terminological vocabularies and data bases, but it can be applied to any description of the terms and concepts of a field.

4. Terminology Work

Terminology work 'is concerned with the systematic collection, description, processing and presentation of concepts and their designations' (ISO/FDIS 1087-1:2000) and thus covers the whole process of producing terminological products containing the mono-, bi- or multilingual terminology of a special field. Its purpose can be descriptive or prescriptive. The process of TW consists of organizing the work, delimiting and sub-dividing the field, collecting source material, terminological concept analysis, definition-writing and preparation for publication (*terminography*). Terminology work is

carried out in subject fields, usually by groups of experts. There are national (e.g. terminology centers), international (e.g. Infoterm, Termnet) and regional organizations, associations etc., involved in TW on its different levels. Their functions vary much, e.g. creating new terminology, compiling terminological vocabularies and term banks, coordinating and consulting for terminological projects, disseminating terminological information, training subject field specialists in terminology work etc. Many companies also pursue their own TW to improve their internal and external communication. One special form of TW is terminology standardization intended to unify or harmonize concepts and concept systems and to achieve agreement on unambiguous concept designations in a given field, either in a single language or in several languages. In 1952, a committee was founded in ISO (the International Organization for Standardization) to coordinate the international standardization of technical terminology and to define principles for this work.

5. Computer-aided Terminology Work, Term Banks, and Terminology Management

Since the 1970s, terminologists have seen the usefulness of computers for terminology work. Terminology database development began with custom made termbanks developed by terminology centers, governmental agencies, industrial companies, or universities. Later followed terminology software for individual terminologists or translators, and terminology databases integrated into companies' information systems. A terminology database contains structured information on terminology, e.g. classification, term-related information (recommended terms, synonyms, abbreviations, full forms, pronunciation, grammatical information, context, equivalents in different languages, field of usage), concept-related information (definitions, relations, pictures, figures), information source etc.

6. Terminology Planning

Terminological methods have been applied in language planning in different countries and language communities. Especially in countries that have recently gained their independence, the local languages have often received a new status as a uniting factor. This has

lead to intensified terminology work in order to increase the lexical resources of the language in order to cope with all the functions of a fully developed language. Terminology work has been extended to minority languages and to new special fields without earlier terminology in the local language.

7. Terminology Science and Research

The objects of theoretical terminology research are the basic elements of the theory, ways of analyzing and presenting terminological knowledge, and methods of practical terminological activities. Furthermore, special characteristics of terminologies in individual languages or in given fields are subjected to both synchronic and diachronic research. New impulses are sought from other disciplines to enhance and develop the theoretical foundation and methods. The differences in the approaches to the theory often reflect the specific terminology-related problems of the country or area. In many countries, practical TW is in the foreground, while others cover all the activities, including research into the theoretical foundations of TS. Normative TW comprises the most visible part of terminological activities, which is also why TS as a whole has received a normative label and the descriptive use of terminological methods is often forgotten.

As early as in the 1930s, Wüster was a proponent of Applied Linguistics and found it to be an ideal location for TS. Its starting point is in real language-related communication problems. Since the 1970s, TS has spread to many universities where it is often situated directly under AL or translation and interpreting, LSP or foreign language studies, computational linguistics, or technical communication. Also theory of science has its interest in TS. TS is often treated also as an independent discipline. The interdisciplinarity offers the pre-requisites for achieving new insights into the nature of terms and concepts as well as for creating new methods for solving both theoretical and practical terminology-related problems in LSP communication.

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Terminology Management

Managing terminology supports your corporate brand image, and makes your software easier to use, easier to translate, and easier to adapt to global markets.

Executive overview

Today, to effectively develop and deliver global software, we need to pay more attention to how we manage the terminology used in software and corporate collateral. Without controls, terminology can cause problems that will cost your company money and customer satisfaction. A proactive terminology management program can limit these problems and even enhance the entire software globalization process.

Terminology management is a key component of IBM's globalization strategy. IBM has developed a process and tools for managing terminology that positions the company well to face the challenges of developing high-quality global software. The company is also involved with standards organizations such as LISA, OASIS, and ISO.

Introduction to terminology management

Terminology, what's the problem? Why should we worry about terminology? Don't we have enough real challenges in developing global products or applications? Things like code pages, locales, localization packs, and unfamiliar markets? We use words; we translate them. What's the problem?

Well, without controls, inconsistent and inappropriate terms infiltrate product user interfaces, documentation, packaging, marketing materials, and support Web sites. This reduces product usability, increases service calls, weakens the brand, and escalates translation costs. Some terminology errors can even cause products to malfunction. Even if you find these errors before your customer does, fixing them can add time to your testing cycle, which delays getting your product to market.

The environment for developing global applications can accentuate the problems. Cross-product solutions or 'suites,' plug-ins of vendor applications, multiple development sites, the pressures to release simultaneously in multiple markets, and the on-demand revolution add further complexity to the challenge of terminology consistency.

A survey conducted by the Localization Industry Standards Association (LISA) confirmed that actively managing terminology should be part of any global product development strategy. Eighty-eight percent of respondents who actively manage terminology reported an increase in product quality, while 74 percent reported an increase in productivity, 62 percent saved costs, and 56 percent felt it increased their company's competitive edge.

Properly managed terminology data can also be used to enhance the end-to-end product globalization process and its related tools: authoring, translation (human, machine, and machine-assisted), content management, localization, and so forth.

Through the use of innovative technologies and structured data, terminology can benefit a wide range of applications and processes used for developing global products. But in addition to having tools and data, ensuring consistent use of terminology needs to become a part of corporate culture. Consistent terminology contributes to presenting an integrated look and feel across products, and it ensures that service, support, marketing, and development all speak the same language, a language users can learn to understand.

Terms you need to manage

The types of terms that you may need to manage when developing global products include homonyms, synonyms, new terms or ‘neologisms,’ and non-translated terms. Homonyms are words that have more than one meaning. For example, the term ‘frame’ has multiple meanings even within the field of computing: a portion of a browser window, a block of information transferred within a network, a section of a video, a segment of time, and a graphical border. Homonyms in themselves are not a problem, and are even necessary for efficient communication; without homonyms we would have to increase our vocabulary probably beyond human capabilities. However, when there are too many different meanings for the same word within the same field, it can be difficult to mentally sort them out. The simple word ‘object,’ for example, has assumed so many specific, technical meanings, that it can be difficult to figure out which one is meant in a given context. When users have to decipher the intended meaning, the information is unclear, and the term may even be incorrectly translated.

Synonyms are words that have the same meaning as another word. For example, in computing, ‘stop,’ ‘cancel,’ ‘abandon,’ ‘back out,’ ‘abort,’ and ‘kill’ all mean the same thing. Synonyms can be accidental or intended, and it is the accidental ones that should be eliminated. Synonyms are sometimes intentionally used to highlight distinctions between brands, products, or operating systems. For example, a ‘bookmark’ in Mozilla Firefox is a ‘favorite’ in Microsoft Internet Explorer, and the different terms make each product unique. Sometimes a terminology race results in a clear brand winner.

On the other hand, accidental synonyms are potentially harmful inconsistencies in usage that affect product quality, usability, and translatability. For example, the simultaneous use of ‘store manager’ and ‘store administrator’ in a product can confuse both customers and the translators. Synonyms also occur when terms fall out of use and more popular ones take their place. For example, ‘distributed learning’ became known as ‘distance learning’ and, more recently, as ‘e-learning.’ A ‘fax’ was once called a ‘telecopy.’ And did you even know that it is an abbreviation of ‘facsimile?’ What should be a concern to developers of global products is that the number of

inconsistencies in the source version of a product is often compounded in the translated version, making the situation even worse. It is important to ensure that all product developers, writers, and translators are using the same terms consistently.

Newly coined terms should be appropriate for the source market and localization-friendly for target markets. Avoid the temptation to create new, trendy words when suitable well-established ones already exist. Choose terms that are transparent, translatable, appropriate for the target audience, and lack connotations. Transparency refers to the ease by which the meaning is inferred from the term itself; for example, ‘concurrent use license’ is more transparent than ‘floating license,’ and ‘transparency’ is more transparent than ‘foil.’ Among the previously mentioned synonyms for ‘stop,’ the terms ‘abort,’ ‘kill,’ and even ‘abandon’ have negative connotations, and ‘back out’ is colloquial which might be difficult for translators.

Finally, some words should not be translated. Strings of product code, for example, that look like English words might get translated by mistake. Most product names are not supposed to be translated either. You need to tell translators not to translate these terms. Translation tools should include functions that help to filter out these strings. In order for these tools to work, you need to use specific markup to identify nontranslatable strings. The XML Localization Interchange File Format (XLIFF) includes a standard way for marking up nontranslatable strings. Some modern authoring formats, such as the Darwin Information Typing Architecture (DITA), also provide a comprehensive set of markup elements and attributes that can be used to prevent nontranslatable strings from being translated by mistake.

Use a terminology database

How do you minimize terminology problems? Start by creating a robust terminology database that records both homonyms and synonyms and can mark new terms and other usage information such as product use and subject fields. Then, make this information widely accessible to your employees, preferably through a Web site, and integrate the data into your globalization process and tools. To do this, your database will need to be well-structured and granular.

To manage homonyms, the database must be ‘word-oriented.’ Word orientation assembles all the meanings of a word into one record, the way a traditional dictionary does. Most off-the-shelf terminology management software programs are word-oriented. The following diagram illustrates a word-oriented view:

Extract terms

Extracting terms from product materials as they are being developed can be very beneficial. According to the LISA survey, terminology extraction is one of the most frequently performed terminology tasks in the localization process.

Extracting terms allows software developers to identify technical terms being used in their product or application. They can subsequently note and correct inconsistencies, spelling errors, and nonstandard forms of capitalization, hyphenation, and so forth. Fixing these problems early in the development cycle saves time and effort later, and helps reduce translation problems. They can also identify which terms should be included in a product glossary. Last but not least, they can send the list of terms to the translation coordinator before the translation of the product begins. The translation coordinator then has enough time to create a bilingual project dictionary of standard terminology for use by all translators involved. The result is improved consistency and quality of translations.

Extracting terms manually is too labor-intensive and error-prone to be feasible on a large scale. An automated term extraction tool is preferred so that the process can take place with little impact to development resources and schedules.

To manage synonyms, the database must also be ‘concept-oriented.’ Concept orientation connects terms that have the same meaning to one record. This is a fundamental principle of terminology management that some off-the-shelf systems do not support. The following diagram illustrates a concept-oriented view.

Finally, to record subject fields, product identifiers, usage labels (to indicate whether the term can be used or not), and other information, the system needs to support a high level of data granularity.

This leads to another important point. Glossaries only need to contain terms that are actually used in the product or application.

Incorrect and unused terms are normally excluded. A terminology database is different. It serves a wide range of purposes and users and therefore should include as much information as possible to guide usage. You should not exclude incorrect or non-preferred terms from the database; rather, you should mark them as incorrect or non-preferred and provide other information such as usage notes. Otherwise, who knows whether terms not found in the database are missing because they are purposely omitted or simply haven't been included yet?

Repurpose terminology

Most people think terminology is just about words and definitions. After all, that's what a dictionary contains. But today, more detailed information needs to be recorded about terms to support the development of global products. This information is so structured and granular that conventional text-management tools are inadequate and we need to turn to data-management tools.

XML is revolutionizing the way we manage information resources so that we can reuse and 'repurpose' content. But as single units of text referring to singular concepts, terms can be repurposed at an even higher level than longer chunks of text like sentences, paragraphs, or topics. Terms have many properties including a part of speech, a gender, a canonical form, an inflection pattern, a subject field, product identifiers, variants (acronyms and abbreviations), a standardization label, a confidence index, a usage label, a definition, a context, a concept identifier, a usage note, synonyms, related terms, and, last but not least, a translation. The International Organization for Standardization has identified more than 200 different recordable properties of terms (ISO 12620). Of course, you don't need to record them all, but if you do record certain types of metadata, new ways to use terminology emerge.

The conventional uses of terminology include product glossaries, Web sites for looking up terms, and bilingual or multilingual dictionaries for translators. Even these three uses require different data and structures. The part of speech value, for example, is not usually needed in product glossaries but is typically mandatory for translator's dictionaries. Queryable Web sites offer the flexibility to

deliver different layouts and quantities of information. And subject field values are becoming increasingly important to realize reuse objectives.

Some search engines can use thesaurus-like lists of terms from a concept-oriented terminology database to increase successful matches of search queries. Text authoring tools use terms to enhance their spell-checking functions. Terminology resources have also proven useful in text mining, which identifies trends and patterns in information needs. The quality of machine translations depends heavily on the quality of the dictionaries used. Finally, term extraction tools are more effective if they can use lists of 'known' terms as exclusion dictionaries, thereby delivering only the 'unknown' terms to the end user.

Summary of benefits and challenges

A proactive approach to terminology management supports your overall globalization strategy. The language content of your software will reach a higher standard and will be easier to translate. By extracting terms from your software, you can fix errors and supply the terms to translators ahead of time. Terminology that is stored in a database can be reused to support your corporate objectives, from controlled authoring and translation to information mining. But there are challenges ahead, including, developing better terminology management tools and increasing awareness in the corporate culture of the need to use proper terminology. Facing those challenges will become even more important as the bar is raised for better and better global software. We encourage comments and feedback, which should be sent to *terms@ca.ibm.com*.

PART TWO

THE PRACTICE OF TERMINOLOGY SCIENCE

TASKS AND EXERCISES

1. (a) *Compile a list of terms from the extracts below. Subdivide them into structural groups and state to what particular branch of science or technology they belong.* (b) *Translate the extracts into Ukrainian.*

A. Terminology is an independent journal with a cross-cultural and cross-disciplinary scope. It focuses on the discussion of systematic solutions not only of language problems encountered in translation, but also, for example, of monolingual problems of ambiguity, reference and developments in multidisciplinary communication. Particular attention will be given to new and developing subject areas such as knowledge representation and transfer, information technology tools, expert systems and terminological databases.

B. Mendelssohn's contributions to absolute music include five symphonies, ten concert overtures, several concertos, about a dozen chamber-music works, and many compositions for piano. By temperament a classicist, Mendelssohn integrated classical ideals with the exuberance and sentiment characteristic of the Romantic period. Schumann, in his piano music and four symphonies, represents the essence of Romanticism in his changeable moods, interest in tone color, and enthusiasm.

C. Most automobiles in use today are propelled by an internal combustion engine, fueled by deflagration of gasoline (also known as petrol) or diesel. Both fuels are known to cause air pollution and are also blamed for contributing to climate change and global warming. Rapidly increasing oil prices, concerns about oil dependence, tightening environmental laws and restrictions on greenhouse gas emissions are propelling work on alternative power systems for automobiles. Efforts to improve or replace existing technologies include the development of hybrid vehicles, plug-in electric vehicles and hydrogen vehicles.

D. Historical linguists study the history of specific languages as well as general characteristics of language change. One aim of historical linguistics is to classify languages in language families descending from a common ancestor, an enterprise that relies primarily on the comparative method. This involves comparison of elements in different languages to detect possible cognates in order to be able to reconstruct how different languages have changed over time. Some historical linguists, along with non-linguists interested in language change, have also employed such tools as computational phylogenetics. The study of language change is also referred to as ‘diachronic linguistics,’ which can be distinguished from ‘synchronic linguistics,’ the study of a given language at a given moment in time without regard to its previous stages. Historical linguistics was among the first linguistic disciplines to emerge and was the most widely practiced form of linguistics in the late 19th century.

2. Study the following passages.

A. Cognitive linguistics (CL) refers to the branch of linguistics that interprets language in terms of the concepts, sometimes universal, sometimes specific to a particular tongue, which underlie its forms. It is thus closely associated with semantics but is distinct from psycholinguistics, which draws upon empirical findings from cognitive psychology in order to explain the mental processes that underlie the acquisition, storage, production and understanding of speech and writing.

B. Psycholinguistics or psychology of language is the study of the psychological and neurobiological factors that enable humans to acquire, use, comprehend and produce language. Initial forays into psycholinguistics were largely philosophical ventures, due mainly to a lack of cohesive data on how the human brain functioned. Modern research makes use of biology, neuroscience, cognitive science, linguistics, and information theory to study how the brain processes language. There are a number of subdisciplines with non-invasive techniques for studying the neurological workings of the brain; for example, neurolinguistics has become a field in its own right. Psycholinguistics covers the cognitive processes that make it possible to generate a grammatical and meaningful sentence out of vocabulary

and grammatical structures, as well as the processes that make it possible to understand utterances, words, text etc. Developmental psycholinguistics studies child's ability to learn language.

C. Anthropological linguistics is the study of the relations between language and culture and the relations between human biology, cognition and language. This strongly overlaps the field of linguistic anthropology, which is the branch of anthropology that studies humans through the languages that they use. Whatever one calls it, this field has had a major impact in the studies of such areas as visual perception (especially colour) and bioregional democracy, both of which are concerned with distinctions that are made in languages about perceptions of the surroundings.

D. Comparative linguistics (originally comparative philology) is a branch of historical linguistics that is concerned with comparing languages to establish their historical relatedness. Genetic relatedness implies a common origin or proto-language, and comparative linguistics aims to construct language families, to reconstruct proto-languages and specify the changes that have resulted in the documented languages. To maintain a clear distinction between attested and reconstructed forms, comparative linguists prefix an asterisk to any form that is not found in surviving texts. A number of methods for carrying out language classification have been developed, ranging from simple inspection to computerized hypothesis testing. Such methods have gone through a long process of development.

E. Sociolinguistics is the descriptive study of the effect of any and all aspects of society, including cultural norms, expectations, and context, on the way language is used, and the effects of language use on society. Sociolinguistics differs from sociology of language in that the focus of sociolinguistics is the effect of the society on the language, while the sociology of language focuses on language's effect on the society. Sociolinguistics overlaps to a considerable degree with pragmatics. It is historically closely related to linguistic anthropology and the distinction between the two fields has even been questioned recently. It also studies how language varieties differ between groups separated by certain social variables, e.g. ethnicity, religion, status, gender, level of education, age etc., and how creation and adherence to these rules is used to categorize individuals in social or socioeconomic

classes. As the usage of a language varies from place to place, language usage also varies among social classes, and it is these sociolects that sociolinguistics studies.

3. *The vocabulary of any scientific text may be classified into three main groups: 1. words of general language; 2. words belonging to scientific prose as a genre; 3. terms (specific for that concrete branch of science). Analyse the texts given above from this point of view.*

4. *(a) Study the following passage. (b) Pick out the terms out of this passage and analyse them.*

Terminology Science (TS) is an interdisciplinary study of the principles and theoretical bases of concepts, concept systems and the designations of the concepts in scientific, technical and other professional fields. Its origin lies in the efforts to solve professional communication problems resulting from the internationalization of commerce, technology, and science in the 20th century. A variety of practice-oriented terminological activities consists of: terminology work (terminography, terminological lexicography), terminology standardization, terminological information and documentation, terminology planning and terminological training. In general language use, the term terminology normally refers to the set of technical terms on a specific topic or in a specific field. Terminology is also used to refer to TS, the theory of terminology, or terminological research, or to any of the practical activities applying its findings. The term terminology science is created according to the model of the German terms *Terminologiewissenschaft* and *Terminologielehre*. It is widely used in international contexts even though English native speakers frequently reject the word science, and prefer, e.g. 'terminology studies.' Sue Ellen Wright and Gerhard Budin in their work 'Handbook of terminology management' (1997) have introduced the term terminology management to cover 'any manipulation of terminological information,' i.e. practically all of the activities listed above.

5. Find definitions to the following linguistic terms:

(a) hyperonymy, synonymy, antonymy, onomasiology, onomastics, syntax, neologism, cognates, lexis, onomatopoeia, phrasal verb, lexical item, pragmatics, sentence, portmanteau word, conditional sentence, word-formation, stem, concrete noun, lexeme, phoneme, sememe, phraseological fusion, phraseological unity, phraseological collocation, meaning, simile, metaphor;

(b) vowel, tense, syllable, subject, slang, semantics, pronoun, prefix, preposition, phonology, phonetics, pidgin, object, morpheme, lexicalization, jargon, idiom, gender, ellipsis, dialect, creole, consonant, conjunction, clause, context, loan-word, discourse, text, word, term, translation, term-building, terminography, archaism.

6. Resorting to 'Introduction to Internet Terminology' explain what these terms mean. Exemplify them.

blog, chat, digit, WWW, virtual community, internet, home page, WORM, virus, cyberculture, newsgroup, cookie, HTTP, instant messaging, modem, bandwidth, vector, telnet, bookmark, backbone, netiquette, password, PDF, terminal, Trojan Horse, Wi-Fi, browser, hypertext, firewall.

7. Resorting to 'Introduction to Internet Terminology' and 'Introduction to Networking Terminology, Interfaces and Protocols' give the full forms of the following initial shortenings.

AVI, CGI, FTP, HTML, ICMP, JAVA, LAN, MAC, MPEG, NAT, OSI, PHP, RSS, TCP, URL, VPN, WAN, gif, dpi, jpg.

8. Read and translate the following passage. Pick out terms and analyse their structure.

Internet

Internet is the global system of interconnected computer networks that exchange data. To get to on to the Internet, you need an Internet Service Provider and software to access the Internet. This

software is called a browser. There are different browsers you can choose from: Internet Explorer, Opera and Firefox to name a few. These different browsers basically do the same thing, they just look a little different.

What you'll see on a webpage

Many webpages have similar layouts and similar information. Often times there is a Header or Banner across the top which tells you the name of website you are visiting. Under the header or along the left-hand side of the page there is frequently a series of Links or Buttons showing different pages you can access within the website. Many pages have a Search Box that lets you search within the website. There could be an 'About Us' or 'Contact Us' link or button with information about the organization (including address or phone numbers).

9. Read and translate the following passage. Discuss the terms found in it.

Terminology is a science itself, with its own theories on the specialized vocabulary of a language and the methodology to work with it; however, it takes some aspects from other sciences:

1) Philosophy and Epistemology. From these two sciences, Terminology takes, among others, the theories on how knowledge is structured, the generation and representation of concepts, the enunciation of definitions. It takes specifically from Epistemology, the way knowledge is organized in each subject, since there is a tight relation between the organization of scientific concepts and sorting the terms used to represent such concepts.

2) Psychology. Terminology takes from this science theories related to the mind processes of each person about perception, understanding, communications etc.

3) Linguistics. From this science, it takes theories on lexicon and the way it is structured and generated.

4) Lexicography. From this science, Terminology takes the theories and methodologies for the sorting and description of lexical units in order to be presented in dictionaries.

5) To these sciences we could add Computing, as a necessary technology nowadays to prepare dictionaries and terminological databases. International standardizing organizations also have a main influence in the methods used for the compilation and presentation of terminologies. The specialized dictionaries and terminological databases are the visible results of Terminology. They make this science known in the most varied fields.

10. *Analyse the morphological structure of the following linguistic terms: identify the number of morphemes and their types according to the semantic and structural classifications of morphemes.*

phoneme, glossary, morphology, concept, psycholinguistics, mood, lexeme, consonant, synchrony, blending, back-formation, clipping, interfix, rheme, sememe, pronoun, intonation, composition, context, grapheme, phraseology, expressiveness, word-group, motivation, unit, polysemy, sense-shift, borrowing, pseudomorpheme, stem, allophone, semi-suffix, clipping, term.

11. *Make the morphemic analysis of the musical terms given below and classify them into simple, derived and compound.*

viola-player, phonism, tune, background, transposition, tone, polyvoiceness, tonality, jazz, mainstay, restfulness, oversinging, prelude, key, composition, rhythm, phonics, clef, downbow, musicology, tuning, woodwind, hearing, pitchfork, pipe-organ, keyboard, foot-key, Muse, music-book, musicianship, musicologist, blower, backfall, atonality, cowbell, forte-piano, postlude.

12. *Analyse the following multi-word terms of linguistics and music and write their structural patterns.*

(a) principle of sonority, international phonetic alphabet, acoustic phonology, tone languages, place of articulation, transformational grammar, immediate constituency analysis, language universals, computational linguistics, child language, manner of articulation, ethnography of communication, compound word,

phraseological unit, completely transferred meaning, partially transferred meaning, sound form;

(b) pitch of tone, orchestral music, note value, polyvoiced instrumental music, melodic links of chords, small octave, musical expressive means, everyday dance music, ways of shortening, tonality of the major dominant, harmonic turns, melodic interval, theory of music, sharps and flats, street organ, wind instruments, voices in the part, positive organ, keyboard instruments.

13. *Analyze the syntactical structure of the following multi-word terms of different branches of linguistics:*

speech community, parts of speech, organs of speech, native speaker, auxiliary verb, idiomatic phrase, discourse analysis, passive voice, lexical set, possessive pronoun, past participle, personal pronoun, indefinite article, connected speech processes, word stress, third person, adverbial modifier, borrowed word, word-building system, immediate constituents, ultimate constituents.

14. *Point out the generic term (hyperonym) in each of the following sets.*

(a) evolutionary biology, biology, molecular biology, cellular biology, physiology;

(b) cottage, bungalow, castle, farmhouse, house, villa, ranch, mansion, patio house;

(c) medical tourism, nautical tourism, extreme tourism, religious tourism, cultural tourism, adjectival tourism, culinary tourism;

(d) phonetics, phonology, morphology, grammar, stylistics, syntax, semantics, pragmatics, linguistics, lexicography;

(e) terminology science, practical terminology science, theoretical terminology science, terminological lexicography, historical terminology science, terminological theory of text, history of terminological science.

15. In the following lists of terms, point out the generic term (hyperonym) and specific nouns (hyponyms).

Model: animal, dog, cat, horse, cow, sheep, pig, monkey. Animal is the generic term, and dog, cat, horse, cow, sheep, pig, monkey are specific nouns.

(a) chemistry, science, physics, zoology, genetics, cybernetics, biology, physics, economics, science of law, linguistics, literary criticism, musicology;

(b) alder, ash, aspen, beech, coffeetree, cedar, tree, maple, linden, pagodatree, birch, lime, palm, poplar, mallow, osier, fir, oak, baobab, acacia;

(c) snipe, bird, sparrow, raven, crow, daw, pigeon, rook, ouzel, pie, lark, crane, finch, cuckoo, robin, eagle, peacock, pheasant, owl, marabou, guinea-fowl;

(d) refrigerator, freezer, cooker, microwave oven, major appliance, washing machine, dishwasher, blender, mincing-machine, toaster, multicooker;

(e) apricot, quince, pomegranate, fig, cornel, mango, fruit, cherry, pear, plum, apple, peach, grapes, lemon, kiwi-fruit, mandarine, banana, water-melon;

(f) air engine, carburetor engine, combustion engine, diesel engine, Stirling engine, turbocharged engine, dual displacement engine, engine;

(g) music, chamber music, symphony music, opera music, church music, programme music, instrumental music, country music;

(h) phonetic borrowings, semantic borrowings, translation loans, morphemic borrowings, hybrids, borrowings.

16. From the following sentences, pick out all special terms which have become international, state which of them are formed from Latin or Greek roots and give their meanings.

1) The horoscope serves as a stylized map of the heavens over a specific location at a particular moment in time. 2) There are many types of microscopes, the most common and first to be invented is the optical microscope which uses light to image the sample. 3) Limnology,

also called freshwater science, is the study of inland waters. 4) Acrophobia sufferers can experience a panic attack in a high place and become too agitated to get themselves down safely. 5) As a literary device, hyperbole is often used in poetry, and is frequently encountered in casual speech. 6) Hydrology is the study of the movement, distribution, and quality of water on Earth and other planets. 7) Metrology includes all theoretical and practical aspects of measurement. 8) Extreme care should be taken when reading the hydrometer; it is very easy to misinterpret the scale. 9) Descriptive mineralogy summarizes results of studies performed on mineral substances. 10) Hydrogeology is the study of the presence and movement of ground water. 11) Many of the things we knew later were not then in existence – the telegraph, telephone, express company, ocean steamer, city delivery of mails. 12) Bearings of the ball or roller type may be used in motors of high-speed fans, or other machinery where it is desirable to prevent damage from leakage.

17. Resorting to 'Online Etymology Dictionary' look up the origin of the words which make up musical terms, classify them into thematic groups and translate them into Ukrainian:

diminuendo, metronome, salsa, flute, allemande, requiem, gavotte, lento, polka, adagio, concerto, mazurka, oboe, saxophone, opera, presto, clarinet, guitar, cantata, sonata, piano, anthem, forte, crescendo, waltz, tempo, cracovienne, soprano, contralto, prima donna, violoncello, trombone, etude, madrigal, opus, bolero, habanera, saraband, octave, prelude, overture, suite, obligato.

18. Explain the origin of the terms given in bold type.

Linguistics is the scientific study of **human** language. Linguistics can be broadly broken into three categories or sub-fields of **study**: language **form**, language meaning, and language in context. The first sub-field of linguistics is the study of language **structure**, or grammar. This **focuses** on the **system** of rules followed by the users of a language. It includes the study of **morphology** (the formation and composition of words), syntax (the formation and composition of

phrases and sentences from these words), and phonology (sound systems). Phonetics is a related **branch** of linguistics concerned with the actual **properties** of speech sounds and non-speech sounds, and how they are produced and perceived.

The study of language meaning is concerned with how languages employ logical structures and real-world references to convey, **process**, and assign meaning, as well as to manage and resolve ambiguity. This **category** includes the study of **semantics** (how meaning is inferred from words and concepts) and pragmatics (how meaning is inferred from context).

19. State the origin of the terms in bold type.

The aim of **terminology** management is to reduce document processing and **translation** costs and increase efficiency. The systematic collection and management of **corporate** and **institutional** vocabulary improves **productivity** and ensures that even the most technical, business-specific terms can be created and translated meaningfully and consistently into any language. Put another way, terminology management helps enterprises standardize their **vocabulary**, make it specific and unambiguous in all languages. It creates consistent corporate messaging and, last but not least, enhances **brand** and corporate **identity**.

20. Comment on the origin and meaning of the affixes in the following terms of linguistics:

1. conversation, inflection, transcription, fixation, spelling, simplify, periphrasis, receptiveness, relationship, intonation, coinage, abbreviation, borrowing, phonology, blending, postposition, shortening, radiation, conversion, transferring, rhyming, shortening, morpheme, clipping, lexicology, utterance;

2. unphonetic (spellings), bookish (words), phonetic (representation), confusable (symbols), literal (translation), historical (grammar), international (language), lexical (archaisms), idiomatic (compounds), contextual (synonyms), nominal (phrases), comparative (degree), semantic (relations), idiomatic (compounds).

21. Study the list of terms having the suffix *-logy/-ology* in their structure and give the definitions to these terms.

zoology, zooarchaeology, toxicology, topology, timbrology, theology, textology, teleology, synecology, stemmatology, stomatology, sinology, selenology, semantology, semasiology, semiology, rhinology, podology, polemology, pomology, posology, potamology, piscatology, pisteology, planetology, philology, phonology, phraseology, phycology, physiology, phytology, neonatology, pharmacology, morphology, kalology, museology, epidemiology, apiology, musicology, pharyngology, petrology, oikology.

22. Name as many linguistic terms ending with *-logy/-ology* as possible.

23. (a) Pick out the terms formed by affixation. (b) Comment on their formation. (c) State to what part of speech they belong. (d) Translate the passages into Ukrainian.

A. The term ‘morphology’ has been taken over from biology where it is used to denote the study of the forms of plants and animals. It was first used for linguistic purposes in 1859 by the German linguist August Schleicher, to refer to the study of the form of words. In present-day linguistics, the term ‘morphology’ refers to the study of the internal structure of words, and of the systematic form-meaning correspondences between words.

The notion ‘systematic’ in the definition of morphology given above is important. For instance, we might observe a form difference and a corresponding meaning difference between the English noun *ear* and the verb *hear*. However, this pattern is not systematic: there are no similar word pairs, and we cannot form new English verbs by adding *h-* to a noun.

(Geert E. Booij, *The Grammar of Words: An Introduction to Linguistic Morphology*. Oxford, 2007).

B. ‘Morphology is an essential sub-field of linguistics. Generally, it aims to describe the structures of words and patterns of word formation in a language. Specifically, it aims to (i) pin down the principles for relating the form and meaning of morphological expressions, (ii) explain how the

morphological units are integrated and the resulting formations interpreted, and (iii) show how morphological units are organized in the lexicon in terms of affinity and contrast. The study of morphology uncovers the lexical resources of language, helps speakers to acquire the skills of using them creatively, and consequently express their thoughts and emotions with eloquence.'

(Zeki Hamawand, *Morphology in English: Word Formation in Cognitive Grammar*. Continuum, 2011).

24. (a) Find compound terms in the sentences given below. (b) State to what part of speech they belong and make their word-building analysis.

1. Of all world-languages English has the vocabulary which is the most copious, heterogeneous and varied.

2. Since the Middle Ages loan-words from Scandinavian languages have been only occasional, and mostly belong to the technical vocabulary.

3. Indo-European had an elaborate system of verb-conjugation.

4. The earliest period of English was formerly called Anglo-Saxon, and the term may still be used: but 'Old English' has tended to replace it with most scholars. But both terms have their drawbacks from the point of view of strict accuracy.

5. Yet, foreign tongues, especially French and Latin, have made their contribution to English word-building by means of new prefixes and suffixes which have in time become as active and usable in the formation of new words as the originally native elements themselves.

6. Another formative influence on the received language, both spoken and written, in modern times has been that of dialect-vocabulary.

7. This relatively rapid change in the vowel-sounds happened to coincide with the increasing and inevitable tendency of the printers, with the popularizing of books about Queen Elizabeth's time, to look for accepted conventions of spelling.

8. 'Languages' like Esperanto or Novial are not living organisms as a real language is: for they are selectively made up out of existing speech-elements from the most familiar tongues, and tend to become quickly static.

9. Moreover, English is now well on the way to becoming a world-language: and this means many types of English, many pronunciations and vocabulary-groups within the English language.

10. But almost any types of words can, with the aid of stress-distinctions, be joined together in Modern English as new compounds.

(C.L. Wrenn. *The English Language*. London, 1958).

25. *Comment on the meaning and form of the following compound terms of the science of methods of TESOL (teaching of English to speakers of other languages).*

groupwork, pairwork, solowork, role-play, textbook, play-acting, homework, acting-out, whiteboards, feedback, tapescripts, worksheets, workbook, noticeboard, face-to-face (communication), game-like (activity), chalk-based (boards), patchwork-type (lessons), task-based (learning), whole-class (arrangement).

26. (a) *Study the passages. (b) Pick out the terms formed by the syntactic way of term-building. (c) Comment on their formation.*

A. Applied linguistics is an interdisciplinary field. Major branches of applied linguistics include bilingualism and multilingualism, computer-mediated communication (CMC), conversation analysis, contrastive linguistics, sign linguistics, language assessment, literacy, discourse analysis, language pedagogy, second language acquisition, lexicography, language planning and policy, inter-linguistics, stylistics, pragmatics, forensic linguistics and translation. Major journals of the field include *Annual Review of Applied Linguistics*, *Applied Linguistics*, *International Review of Applied Linguistics*, *International Journal of Applied Linguistics*, *Issues in Applied Linguistics*, and *Language Learning*.

B. Semantic relations between words are manifested in respect of homonymy, antonymy, paronymy etc. Semantics usually involved in lexicological work is called 'lexical semantics'. Lexical semantics is somewhat different from other linguistic types of semantics like phrase semantics, semantics of sentence, and text semantics, as they take the

notion of meaning in much broader sense. There are outside linguistic types of semantics like cultural semantics and computational semantics, as the latest is not related to computational lexicology but to mathematical logic. Among semantics of language, lexical semantics is most robust, and to some extent the phrase semantics too, while other types of linguistic semantics are new and not quite examined.

C. Linguistic typology is a sub-field of linguistics that studies and classifies languages according to their structural features. Its aim is to describe and explain the common properties and the structural diversity of the world's languages. It includes three sub-disciplines: qualitative typology, which deals with the issue of comparing languages and within-language variance; quantitative typology, which deals with the distribution of structural patterns in the world's languages; and theoretical typology, which explains these distributions.

D. Pragmatics is a sub-field of linguistics which studies the ways in which context contributes to meaning. Pragmatics encompasses speech act theory, conversational implication, talk in interaction and other approaches to language behavior in philosophy, sociology, and linguistics.

It studies how the transmission of meaning depends not only on the linguistic knowledge (e.g., grammar, lexicon) of the speaker and listener, but also on the context of the utterance, knowledge about the status of those involved, the inferred intent of the speaker, and so on. In this respect, pragmatics explains how language users are able to overcome apparent ambiguity, since meaning relies on the manner, place, time etc. of an utterance. The ability to understand another speaker's intended meaning is called *pragmatic competence*. So an utterance describing pragmatic function is described as metapragmatic. Pragmatic awareness is regarded as one of the most challenging aspects of language learning, and comes only through experience.

27. (a) Pick out all the terms of linguistics from the following passages. (b) Comment on the formation of these terms. (c) Translate the passages into Ukrainian.

A. A morpheme – the minimal linguistic unit – is an arbitrary union of a sound and a meaning that cannot be further analyzed. Every word in every language is composed of one or more morphemes.

The decomposition of words into morphemes illustrates one of the fundamental properties of human language – discreteness. In all languages, discrete linguistic units combine in rule-governed ways to form larger units. Sound units combine to form morphemes, morphemes combine to form words, and words combine to form larger units – phrases and sentences.

Discreteness is one of the properties that distinguish human languages from the communication systems of other species. Our knowledge of these discrete units and the rules for combining them accounts for the creativity of human language. Linguistic creativity refers to a person's ability to produce and understand an infinite range of sentences and words never before heard.

B. With respect to words, linguistic creativity means that not only can we understand words that we have never heard before, but we can also create new words. In the first case, we can decompose a word into its component parts and if we know the meaning of those parts, we have a good guess at the meaning of the whole. In the second case, we can combine morphemes in novel ways to create new words whose meaning will be apparent to other speakers of the language. If you know that 'write' to a disk or a CD means to put information on it, you automatically understand that a *writable* CD is one that can take information; a *rewritable* CD is one where the original information can be written over; and an *unrewritable* CD is one that does not allow the user to write over the original information. You know the meanings of all these words by virtue of your knowledge of the individual morphemes *write*, *re-*, *-able*, and *un-* and the rules for their combination.

C. A morpheme was defined as the basic element of meaning, a phonological form that is arbitrarily united with a particular meaning and that cannot be analyzed into simpler elements. Although it holds for most of the morphemes in a language, this definition has presented problems for linguistic analysis for many years. Consider words like *cranberry*, *huckleberry*, and *boysenberry*. The *berry* part is no problem, but *huckle* and *boysen* occur only with *berry*, as did *cran* until *cranapple* juice came on the market, and other morphologically complex words using *cran-* followed. The *boysen-* part of *boysenberry* was named for a man named *Boysen* who developed it as a hybrid from the blackberry and raspberry. But few people are aware of this and it is a bound stem morpheme that occurs only in this word. *Lukewarm* is another word with two stem morphemes, with *luke* occurring only in this word, because it is not the same morpheme as the name *Luke*.

D. The meaning of the morpheme must be constant. The agentive morpheme *-er* means ‘one who does’ in words like *singer*, *painter*, *lover*, and *worker*, but the same sounds represent the comparative morpheme, meaning ‘more,’ in *nicer*, *prettier*, and *taller*. Thus, two different morphemes may be pronounced identically.

The identical form represents two morphemes because of the different meanings. The same sounds may occur in another word and not represent a separate morpheme. The final syllable *-er* in *father* is not a separate morpheme ending, *father* and *water* are single morphemes, or monomorphemic words. This follows from the concept of the morpheme as a sound-meaning unit.

(Victoria Fromkin, Robert Rodman, Nina Hyams. *An Introduction to Language*. 2003).

28. Discuss the terms found in the following text:

Terminology of the British Isles

Various terms are used to describe the different (and sometimes overlapping) geographical and political areas of the islands of Great Britain, Ireland, and the smaller islands which surround them. The terminology is often a source of confusion, partly owing to the similarity between some of the actual words used, but also because they are often used loosely. In addition, many of the words carry both

geographical and political connotations which are affected by the history of the islands. The purpose of this article is to explain the meanings of and relationships among the terms in use.

In brief, the main terms and their simple explanations are as follows.

Geographical terms

The British Isles is an archipelago consisting of the two large islands of Great Britain and Ireland, and many smaller surrounding islands. By tradition, it also includes the Channel Islands, although they are physically closer to the continental mainland. The term is contentious. Great Britain is the largest island of the archipelago. Ireland is the second largest island of the archipelago and lies directly to the west of Great Britain.

The full list of islands in the British Isles includes over 6,000 islands, of which 51 have an area larger than 20 km².

Political terms

The United Kingdom of Great Britain and Northern Ireland is the constitutional monarchy occupying the island of Great Britain, the small nearby islands (but not the Isle of Man or the Channel Islands), and the north-eastern part of the island of Ireland.

Usually, it is shortened to United Kingdom or the UK, though Britain is also an

officially recognized short form. 'Great Britain' is sometimes used as a short form, and although technically incorrect is the name used by the UK in some international organizations. The abbreviation GB is frequently used for the United Kingdom of Great Britain and Northern Ireland in international agreements, e.g. Universal Postal Union and Road Traffic Convention, as well as in the ISO 3166 country codes (GB and GBR).

Ireland is the sovereign republic occupying the larger portion of the island of Ireland. However, to distinguish the state from the island, or to distinguish either of these from Northern Ireland, it is also called 'the Republic of Ireland' or simply 'the Republic'. Occasionally, its Irish-language name, Éire (or Eire, without the diacritic), will be used in an English-language context to distinguish it from 'Northern Ireland', even though the word 'Éire' directly translates as 'Ireland'.

England, Scotland, Wales and Northern Ireland are the four countries of the United Kingdom though they are also referred to as the constituent countries or, especially in sporting contexts, home nations of the United Kingdom of Great Britain and Northern Ireland.

England and Wales, Scotland, and Northern Ireland are legal jurisdictions within the United Kingdom. Great Britain means the countries of England, Wales and Scotland considered as a unit. British Islands consists of the United Kingdom, the Channel Islands and the Isle of Man. These are the states within the British Isles that have the British monarch as head of state.

Linguistic terms

The two sovereign states in the region, the United Kingdom and Ireland, are frequently referred to as countries. So too are England, Wales, Scotland and, to a lesser extent, Northern Ireland (as is the whole island of Ireland).

British is an adjective pertaining to the United Kingdom; for example, a citizen of the UK is called a British citizen. Anglo- is often used as an adjectival prefix referring to the United Kingdom (notwithstanding that its original meaning is 'English') particularly in the field of diplomatic relations.

Wales is sometimes called the Principality of Wales, although this has no modern constitutional basis. Northern Ireland is often referred to as a province or called Ulster, after the traditional Irish province of Ulster in which it is located.

29. Resorting to online English (British)-American dictionaries match the British terms of Cars and Driving Terminology given in section (a) with their American variants in section (b):

(a) aerial, articulated lorry, bonnet, boot, car park, cats eye, demister, dipped lights, drink-driving, driving license, roundabout, saloon car, tyre, transmission, windscreen, window heater, wing, wing mirror, zebra crossing;

(b) hood, trunk, antenna, parking lot, tractor-trailer, side mirror, fender, power train, tire, circle, sedan, defroster, drunk driving, crosswalk, windshield, low beams.

30. *Resorting to online English (British)-American dictionaries match the British terms of Cookery Terminology given in section (a) with their American variants in section (b):*

(a) aubergine, biscuit, candy floss, chips, conserves, cornflour, courgettes, crisps, fish fingers, jacket potato, jam, mince, porridge, pudding, rocket, sweet, tinned;

(b) canned, oatmeal, jelly, arugula, dessert, cookie, fish sticks, ground meat, baked potato, eggplant, potato chips, cornstarch, preserves, french fries, cotton candy.

31. *Read, translate into Ukrainian and memorize the following.*

50 scientific words every student should know:

atmosphere: a protective layer of gases surrounding a planetary body

atom: the smallest unit of an element

camouflage: a colouring or body shape that conceals an animal

carnivore: an animal that only eats meat

climate: the average weather conditions of a region

crust: the outer layer of Earth

deforestation: the destruction of forests

ecosystem: all the populations of organisms and non-living things in an environment and the interaction among themselves

electricity: a form of energy produced by particles that have a charge

electron: a negatively charged particle in an atom

element: a substance made of just one type of atom

endangered species: a group of organisms in danger of dying out

energy: the ability to do work

erosion: the movement of sediment from one place to another

extinct: no longer existing or living

fossil: the hardened traces of an ancient organism

fossil fuel: a fuel-like petroleum, coal, and natural gas – that is made of decayed plants and animals

friction: resistance to movement when two surfaces rub together

gas: a state of matter with neither a fixed volume nor shape

gravity: an invisible force that pulls all objects toward each other

habitat: a natural place for the life and growth of an organism

herbivore: an animal that eats only plants

igneous rock: rock that forms when magma cools at or below Earth's surface

lava: molten rock on Earth's surface

liquid: a state of matter with a fixed volume and a shape that changes

magma: melted rock beneath Earth's surface

mammal: a warm-blooded animal whose young feed on milk produced by their mother

mantle: the layer between Earth's crust and its innermost core

mass: the amount of matter in an object

matter: anything that has mass and takes up space

metamorphic rock: rock formed when an igneous or sedimentary rock is changed by heat or squeezed by pressure

mineral: a solid found in nature with a specific chemical makeup and crystal structure

molecule: the combination of two or more atoms that are bonded together

natural resource: material in the environment that is useful to people

neutron: an uncharged particle in an atom

omnivore: an animal that eats both plants and animals

photosynthesis: a plant's process of capturing the sun's energy to turn carbon dioxide and water into food

population: the number of members of one species that live in area

precipitation: water that falls to Earth as rain, snow, or hail

predator: an animal that hunts and kills other animals for food

prey: an animal hunted by other animals for food

primate: an animal in the group that includes humans, apes, and monkeys

proton: a positively charged particle in an atom

sedimentary rock: rock formed when small particles of rock or organisms are cemented together

soil: material made of weathered rock and broken-down organic material

solid: a state of matter with a fixed shape and fixed volume

sound: the energy produced when an object vibrates

species: a class of individuals having some common characteristics or qualities

tectonic plate: one of the slow-moving rock slabs that make up Earth's outer shell

volcano: an opening in Earth's crust from which lava, ash, and hot gas come out during an eruption

32. (a) *Comment on the following terms of linguistics and give their definitions.* (b) *Find synonyms and antonyms among them.*

Polysemy, outer aspect of word, degeneration of meaning, word-group, borrowed word, word-building, sound-imitation, composition, phraseological unit, back-formation, polysemantic word, origin, idiomatic compound, verb-postpositive phrases, root word, derived word, unilingual dictionary, plurality of meanings, archaism, formal style, contextual synonyms, semantics, elevation of meaning, initialisms, monomorphemic word, bound morpheme, broadening of meaning, international words, completely assimilated borrowings, narrowing of meaning, non-idiomatic compounds, motivated word, phrasal verbs, derivative, internationalisms, multilingual dictionary, informal style, monosemantic word, etymology, context-dependent synonyms, non-assimilated borrowings, meaning, idiom, amelioration of meaning, onomatopoeia, compounding, word-formation, word-combination, loan word, free morpheme, degradation of meaning, initial abbreviation, generalization of meaning, simple word, unmotivated word, neologism, reversion, monosemy, affixed word, specialization of meaning, verbs with postpositions, inner aspect of word, polymorphemic word, word-collocation, native word, borrowing.

MODULAR QUIZZES ON TERMINOLOGY SCIENCE

Modular quiz 1.

Variant 1.

1. Describe terminology science, its subject-matter and tasks.
2. Make the morphemic analysis of the automotive terms given below and classify them into simple, derived, abbreviated and compound:

dimlight, disengagement, leaf, on-position, refit, trip-meter, blending, shoe, ACCRY (accessories), precooling, bulkhead, breakerless, ratchet-and-pawl, misarrangement, misfire.

3. Decide to what structural types and subtypes the following linguistic terms of Modern English belong, write their structural patterns and translate them into Ukrainian:

suffixing, sound, complex stem, onomatopoeic words, back-formation, derived word, noun, mental lexicon, sound system, morphologically complex words, adverb, grammatical morpheme, hierarchical structure of the word, meaning, linguistic competence.

Modular quiz 1.

Variant 2.

1. Describe the structure of terminology science and its methods.
2. Make the morphemic analysis of the automotive terms given below and classify them into simple, derived, abbreviated and compound:

bleeder, anemometer, coil, preload, shock, ACC (accumulator), linkage, center-to-center, breakdown, fastener, fix, checkpoint, absorber, leakproofness, maneuverability, limo.

3. Decide to what structural types and subtypes the following linguistic terms of Modern English belong, write their structural patterns and translate them into Ukrainian:

PP (Prepositional Phrase), word, sentence structure, idiomatic compounds, spelling, external structure of words, verb, root morpheme, semantic properties, infix, universal grammar, lexicographer, stem, redefinition, VP (Verb Phrase).

Modular quiz 1.

Variant 3.

1. Analyze the definitions of the concept of *term* and the main requirements to terms.

2. Make the morphemic analysis of the automotive terms given below and classify them into simple, derived, abbreviated and compound:

off-normal, miss, embodiment, mudflap, nib, coater, misconnection, horsepower, clearance, pressurize, kickback, self-correction, rusting, transport, tamper-proof, ICE.

3. Decide to what structural types and subtypes the following linguistic terms of Modern English belong, write their structural patterns and translate them into Ukrainian:

terminology, sound-imitation, blending, term-building, multi-word terms, applied terminology science, historical comparative method, word, borrowing, scientific language, terminological meaning, shortening, term-building, IC-analysis, term, ME.

Modular quiz 1.

Variant 4.

1. Describe the definitions of the concept of *terminology* and its main signs.

2. Make the morphemic analysis of the automotive terms given below and classify them into simple, derived, abbreviated and compound:

encasement, cool, countershaft, durability, trafficway, patch, kickdown, bypass, coil, flammability, self-heating, tailgate, preheat, ohmmeter, oil, van, prop.

3. Decide to what structural types and subtypes the following linguistic terms of Modern English belong, write their structural patterns and translate them into Ukrainian:

phrase, proper names, idiom, fixed phrases, gap, situational context, semantic features, part of speech, unit of linguistic meaning, prefixing, root, one-word term, professional vocabulary, metonymic transfer, sub-language.

Modular quiz 2.

Variant 1.

1. Analyze the main structural types of terms in Modern English.

2. From the following sentences, pick out all special terms which have become international, state which of them are formed from Latin or Greek roots and give their meanings:

1) *Biology is a natural science concerned with the study of life and living organisms, including their structure, function, growth, origin, evolution, distribution, and taxonomy.* 2) *The periscope is a long tube with mirrors fitted in it, used to look over the top of something, especially to see out of a submarine.* 3) *Details on the moon's surface can*

only be seen through a telescope. 4) Philosophy is the study of the nature and meaning of existence, good and evil. 5) The hydrometer is a familiar object at every gasoline filling station. 6) The theorem is a statement, especially in mathematics, that you can prove by showing that it has been correctly developed from facts. 7) While under hypnosis, the victim was able to describe her attacker. 8) The thermostat is an instrument used for keeping a room or a machine at a particular temperature. 9) The majority of spectrophotometers are used in spectral regions near the visible spectrum. 10) Telegraphy requires that the method used for encoding the message be known to both sender and receiver.

Modular quiz 2.

Variant 2.

1. Analyze the main ways of the rise of terms in Modern English.

2. From the following sentences, pick out all special terms which have become international, state which of them are formed from Latin or Greek roots and give their meanings.

1) *Advances in seismograph technology have increased our understanding of both earthquakes and the Earth itself.* 2) *The compound microscope is used for viewing very small objects.* 3) *Women have often been excluded from positions of power in the public sphere.* 4) *Phenomenology is the part of philosophy that deals with people's feelings, thoughts, and experiences.* 5) *Photosynthesis is the production by a green plant of special substances like sugar that it uses as food, caused by the action of sunlight on chlorophyll.* 6) *The micrometer is a unit for measuring very small distances.* 7) *Spectrometer is a term that is applied to instruments that operate over a very wide range of wavelengths, from gamma rays and X-rays into the far infrared.* 8) *Although biology in its modern form is a relatively recent development, sciences related to and included within it have been studied since ancient times.* 9) *Telegrams were often used to confirm business dealings and were commonly used to create binding legal documents for business dealings.* 10) *Daniel Gabriel Fahrenheit was the German physicist who invented an alcohol thermometer in 1709, and the mercury thermometer in 1714.*

Modular quiz 2.

Variant 3.

1. Analyze the main subtypes of one-word terms in Modern English.

2. From the following sentences, pick out all special terms which have become international, state which of them are formed from Latin or Greek roots and give their meanings:

1) *The geography of the flats made it hard to know our neighbours.*
2) *Anthropology is the scientific study of people, their societies, cultures etc.*
3) *One of the most convenient instruments for studying electric charges is the gold-leaf electroscope.*
4) *The phonograph is a device introduced in 1877 for the recording and reproduction of sound recordings.*
5) *Thermometers are used within roadways in cold weather climates to help determine if icing conditions exist and indoors within climate control systems.*
6) *Periscopes allow a submarine, when submerged at a shallow depth, to search visually for nearby targets and threats on the surface of the water and in the air.*
7) *Around 132 AD, Chinese scientist Chang Heng invented the first seismoscope, an instrument that could register the occurrence of an earthquake.*
8) *It was estimated in 2010 that the number of automobiles had risen to over 1 billion vehicles, with 500 million reached in 1986.*
9) *In practice, cryobiology is the study of biological material or systems at temperatures below normal.*
10) *Before long distance telephone services were readily available or affordable, telegram services were very popular and the only way to convey information speedily over very long distances.*

Modular quiz 2.

Variant 4.

1. Describe the main classifications of multi-word terms in Modern English.

2. From the following sentences, pick out all special terms which have become international, state which of them are formed from Latin or Greek roots and give their meanings.

1) Geology is the study of the rocks, soil etc that make up the Earth, and of the way they have changed since the Earth was formed. 2) While other inventors had produced devices that could record sounds, Edison's phonograph was the first to be able to reproduce the recorded sound. 3) Thermometers measure temperature by using materials that change in some way when they are heated or cooled. 4) A spectrograph is an instrument that separates an incoming wave into a frequency spectrum. 5) The authors reject the hypothesis about unemployment contributing to crime. 6) The photosphere of an astronomical object is the region from which externally received light originates. 7) The overall design of the classical submarine periscope is very simple: two telescopes pointed into each other. 8) Spectroscopy pertains to the dispersion of an object's light into its component colors (i.e. energies). 9) An automobile is a wheeled motor vehicle used for transporting passengers, which also carries its own engine or motor. 10) Cryobiology is the branch of biology that studies the effects of low temperatures on living organisms.

A TEST ON TERMINOLOGY SCIENCE

Choose the correct variant.

1. Terminology is

- (a) a totality of words and word combinations, which name special objects and express special professional concepts;
- (b) a regulated totality of terms of a definite field of people's knowledge.

2. Terminology science is a branch of linguistics which deals with

- (a) various means of expressing grammatical relations between words and with the patterns after which words are combined into word-groups and sentences;
- (b) the study of the nature, functions and structure of stylistic devices and with the investigation of each style of language;
- (c) the semantic nature, grammatical structure and principles of functioning of terms, which attend to different spheres of professional activity of people.

3. ... is the branch of terminology science which deals with the issues of receiving and using the results of terminology activity (i.e. dictionaries, standards and terminological data banks).

- (a) Theoretical terminology science;
- (b) Practical terminology science;
- (c) Teaching of terminology.

4. ... investigates terms and their totalities in different languages with the aim of revealing their structural and semantic differences and similarities.

- (a) Contrastive terminology science;
- (b) Diachronic, or historical, terminology science;
- (c) Theoretical terminology science.

5. Terminologies

- (a) seem to obey the same rules and laws as other vocabulary strata;
- (b) do not obey the same rules and laws as other vocabulary strata;
- (c) work out the other rules and laws.

6. The exchange between terminological systems and the common vocabulary is

- (a) absolutely impossible;
- (b) quite possible;
- (c) quite normal.

7. The quantity of terms in developed languages

- (a) exceeds the quantity of common words;
- (b) is less than the quantity of common words.

8. Musical terminology of the leading European languages is mostly of

- (a) the French origin;
- (b) the Italian origin;
- (c) the Spanish origin.

9. The majority of sports terms of the leading European languages are borrowed from

- (a) English;
- (b) German;
- (c) French.

10. Terms are ...

- (a) isolated, independent units of the general language, with properties inherent to them only;
- (b) not isolated, independent units of the general language, with properties inherent to them only.

11. Terms should be

- (a) irregular, ambiguous, long, polysemantic and stylistically coloured;
- (b) regular, exact, short, monosemantic and stylistically neutral.

12. General grammatical classification of terms of different fields of knowledge should be based on

- (a) their semantic structure;
- (b) their morphological structure;
- (c) their morphological and syntactical structure.

13. Terminology is made up with

- (a) a set of free and stable word-combinations of the language;
- (b) a set of one-word terms and multi-word terms and the relations by which they are connected;
- (c) a set of words and free word-combinations.

14. ... are stable word-groups which cannot be made in the process of speech, they exist in the language of science as ready-made units.

- (a) one-word terms;
- (b) multi-word terms;
- (c) shortened terms.

15. In the sentence multi-word terms are

(a) not divided syntactically into parts and are used as one part of the sentence;

(b) divided syntactically into parts and are used as different parts of the sentence.

16. According to ... constituting a term there are different structural subtypes of one-word terms in Modern European languages: simple, affixed, compound and shortened.

- (a) the nature and number of roots;
- (b) the nature and number of morphemes;
- (c) the nature and number of syllables.

17. ... are usually used in terminological systems of different national languages both as independent nominative units and as the nuclei of multi-word terms.

- (a) Derived terms;
- (b) One-word terms;
- (c) Multi-word terms.

18. These shortened terms: *UNO*, *BBC*, *WOMAN* are made from

- (a) the initial letters of a word-group;
- (b) a syllable of the original word.

19. These shortened terms: *limo*, *prof*, *doc*, *phone*, *gym* are made from

- (a) the initial letters of a word-group;
- (b) a syllable of the original word.

20. A nuclear word-group is a grammatically organized combination of words ...

(a) in which one of the elements towers above the other elements;

(b) in which all the elements are equal.

21. According to the direction of the dependence of elements nuclear multi-word terms are divided into

(a) simple and compound word-collocations;

(b) nuclear and non-nuclear word-collocations; (c) regressive and progressive word-collocations.

22. In the ... dependent components of word collocations are arranged to the right of the nucleus.

(a) regressive multi-word terms;

(b) progressive multi-word terms.

23. ... is borrowing lexical units from general literary language and giving them a terminological meaning.

(a) The syntactic way of word-formation;

(b) The semantic way of term-formation;

(c) The morphological way of term-formation.

24. ... consists in the formation of stable word-combinations of terminological character.

(a) The syntactic way of word-building;

(b) The semantic way of term-building;

(c) The morphological way of term-building.

25. ... appears to be the most productive type of term-formation in most of terminological systems in Modern European languages.

(a) Affixation;

(b) Compounding;

(c) The formation of stable term-combinations.

The issues for a credit test on the discipline 'Terminology Science'

1. Terminology science, its subject-matter and tasks
2. The structure of terminology science and its methods
3. The place of terminology science among other sciences
4. The ways of the rise of terms in Modern English
5. The definitions of the concept of *term*
6. The definitions of the concept of *terminology*
7. Some requirements to terms
8. The distinguishing features of term-building
9. The main types of terminological word-building
10. General grammatical classification of terminology
11. The structural types of terms in Modern European languages
12. The semantic and structural peculiarities of multi-word terms
13. Different kinds of classifications of multi-word terms
14. The patterns of formation of multi-word terms
15. Semantic relationships in terminology
16. The development of the present-day terminology
17. Changes in the situation and role of terminology
18. The current state of terminology, its topicality and tasks
19. The importance of terminology in the era of globalization
20. Globalization of industry, economics, culture and its consequences
21. The main directions of terminology research for the current century

Glossary of Terms of Terminology Science

term is a word or a stable word-group which is specifically employed by a particular branch of science, technology, trade or the arts to convey a concept peculiar to this particular activity;

nomen is a name of a single notion or a certain unit of mass production;

terminoid is a special lexical unit which is used to name the phenomenon that is absolutely new and whose concept is not interpreted in a monosemantic way;

prototerm is a special lexical unit that appeared and was used in prescientific times;

preterms are a special group of lexemes which is represented by special lexical units used as terms to name new scientific notions. They are represented by a vast descriptive pattern;

simple terms are those which consist of one root morpheme;

affixed terms (or derived terms) are those which consist of one root morpheme and one or several affixes;

compound terms are those which consist of two or more stems;

multi-word terms are stable word-groups which convey a single concept of some field of science or technology and are characterized by semantic unity;

regressive multi-word terms are those which are characterized by the arrangement of dependent elements to the left of the nucleus of word combinations;

progressive multi-word terms are those which are characterized by the arrangement of dependent elements to the right of the nucleus of word combinations;

terminography is a set of practices and methods used for the collection, description and presentation of terms;

terminology is 1) the science about terms; 2) professional vocabularies in the structure of all the words in a certain language; 3) a special vocabulary, which serves to satisfy the needs of a certain branch of science or technologies;

terminologist is a person who studies and uses terminology, especially in professional activity;

terminological system is a well-ordered set of terminological units, which adequately expresses the system of concepts of the theory used to describe a certain special sphere of human knowledge or activity;

terminology science is a branch of linguistics which studies the semantic nature, grammatical structure and principles of functioning of terms, which attend to different spheres of professional activity of people;

theoretical terminology science is the branch of terminology science specializing in the analysis of the content, formal and functional structure of terms and their totalities;

practical terminology science is the branch of terminology science which deals with the issues of receiving and using the results of terminology activity (i.e. dictionaries, standards and terminological data banks);

teaching of terminology is the sphere of pedagogical activity which works out and applies various methods and forms of teaching of specialists who study theory and practice of terminological activity;

contrastive terminology science investigates terms and their totalities in different languages with the aim of revealing their structural and semantic differences and similarities;

diachronic, or historical, terminology science is the branch of terminology science which studies the issues of the formation and development of the totalities of terms depending on the formation and development of special fields of people's activity;

terminological theory of text is the theory which deals with the issues of typology of texts that contain terms, with different aspects of functioning of terms in texts (or with the terminological analysis of the text and the textual analysis of terms);

the history of terminology science is the branch of linguistic science which studies the history of coming into being and perfecting of the subject-matter, methods and structure of terminology science, its place in the system of sciences, the formation of its theories and principles, and its individual schools;

terminology standardization is a process to ensure that term conforms to specific standards;

terminological word-building is the process of producing new terms from the resources of this particular language;

semantic way of term-building is borrowing lexical units from general literary language and giving them a terminological meaning;

affixation consists in adding an affix to the stem of a definite part of speech;

composition (compounding) is the way of term-building in which new terms are produced by combining two or more stems;

syntactic way of term-building consists in the formation of stable word-combinations of terminological character, i.e. multi-word terms;

terminological definition provides a unique identification of a concept only with reference to the concept system of which it forms part and classifies the concept within that system;

terminological dictionary is a dictionary whose entries are constituted by the elements of terminology;

terminology management allows you to achieve effective and accurate translations by organizing these terms with a clear set of rules for their usage; this ensures that the correct term is used within a translation;

terminology planning is a planning activity for developing domain communication largely according to the needs and requirements of knowledge representation;

terminology work involves defining concepts in special fields and agreeing on recommendations for equivalent terms in selected languages;

data bank is a large collection of information that can be searched through quickly especially by a computer;

terminological data bank is a structured collection of information about the units of meaning and designation of a special subject field addressed to the needs of a specific group of users;

database is a collection of information which is held together in an organized or logical way;

terminology database contains structured information on terminology, e.g. classification, term-related information (recommended terms, synonyms, abbreviations, full forms, pronunciation, context, equivalents in different languages, field of usage), concept-related information (definitions, relations, pictures, figures), information source.

Postface

Our teaching experience has shown that mastering the course in the theory and practice of terminology science furthers to deepen the notions of students on the literary language as a system and the language of science and technology as one of its subsystems, broadens the general linguistic erudition of students, improves the practical mastering of a foreign language and develops the skills of work with specialized texts.

A course in the theory and practice of terminology science is also of general value for the students in their daily studies currently – not in the future. The students work every day with highly specialized texts and terminology that they should understand and learn. They have to contrast theories, to find the common core, and to produce texts and other presentations of specialized knowledge, whether it is general linguistics, foreign literature, theory of translation, or whatever. We recommend them to put their skills in terminological analysis in practice whenever they study for exams, write assignments, do their homework and write their bachelor's or master's theses. As feedback we often receive very well-structured answers and papers which are in totally different fields and contexts from terminology science.

The course in terminology science is also consistent with the aims of life-long learning. For mature students it is very important to learn methods of mastering changes in the work environment, e.g. those brought by information technology. Terminological methods can offer them a way to understand the structure of specialist knowledge and to adapt to new in terminology and concepts more.

Our experience has shown that the theory of terminology can be applied to many purposes and taught with different goals in mind. The course in the theory and practice of terminology science has become popular with students of Rivne State University for the Humanities. So it all started with the introduction of terminology science in the syllabus of foreign language students at the end of 1990s. This has resulted in a great number of bachelor's and master's theses in terminological subjects. Thus we are making serious efforts to put terminology science at the service of science and commerce of Ukraine by providing terminology training to foreign language students.

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ТЕОРІЯ І ПРАКТИКА ТЕРМІНОЗНАВСТВА**

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