INTRODUCTION

The research in the field of terminology is considered relevant since terminological research is global, universal, and because of scientific and technological progress, takes dominant positions and becomes an active characteristic of many trends in vocabulary and word formation in general [1: 76].

Today linguistics is represented by a large number of scientific studies that examine different aspects of terminology – its structural organization, lexical-semantic relations in term systems, loan words amounting to terms, etc. (Proceedings by D. S. Lotte [2; 3], V. P. Danylenko [1; 4], V. M. Ovcharenko [5], B. M. Golovin [6], F. A. Tsytkina [7], A. V. Superanska [8], T. I. Panko, I. M. Kochan, G. P. Matsyuk [9; 10], L. O. Symonenko [11; 12], L. V. Kozak [13], T. V. Lepeha [14], L. M. Filyuk [15], O. V. Chorna [16], A. V. Zenina [17] and others).

The goal of our study is a general analysis of hyper-hyponymic relations between noun-juxtapositions components on the basis of the Ukrainian terminology. The goal includes the following tasks: 1) to find out the importance of hyper-hyponymic relations in noun-juxtapositions of the Ukrainian terminology.
onomic relations for the research of terminological vocabulary; 2) to examine the setter of hyper-hyponymic relations between noun-juxtapositions components; 3) to determine the basic semantic groups of noun-juxtapositions belonging to terminological vocabulary for the conventional value of hyperonym.

1. THE IMPORTANCE OF HYPER-HYPONYMITY FOR THE RESEARCH OF TERMINOLOGICAL VOCABULARY

As any lexical-semantic system is based on relations, their study is considered extremely important for regulating and systematizing terminology, constructing the hierarchy of concepts in some fields of knowledge. There is no doubt that investigation of semantic relations “allows to specify theoretical understanding of the terminology systemic nature on the semantic level, and... also identify patterns of systemic correlation of the expression plan and the content plan of the specific professional terminological system” [20: 207].

We certainly agree with the opinion of linguists about the fact that at the heart of hierarchical organization of vocabulary and terminology, particularly in the development of vocabulary, underlie paradigmatic relations, because “the term dependence on subsystem concepts is developed in particular paradigmatics, in the specific characteristics of compatibility with other terms within each terminological system” [21: 123]. M. P. Kocherhan believes that the meaning of the word depends on its position in the lexical-semantic paradigm, that is from its paradigmatic relations: „Words as well as phonemes, morphemes, constructions, are positioned between each other in different oppositions and united into different paradigms. Paradigmatic relations in the lexical-semantic system are the relations between words and groups of words based on community or opposition of their meanings” [18: 266].

In the system of paradigmatic relations hyper-hyponymy (from gr. Hyper – ‘floor, above normal over’ and hypo – ‘below, under’) „is one of the most important categories that is forming terminological structure” [16: 177]. Relevance of research of hyper-hyponymic relations is conditioned to the fact that they are used to analyze different groups of lexicon and vocabulary of the language in general. The researchers note the importance of hyper-hyponymy in solving problems of ordering vocabulary, describing its thematic connections and also for lexicographic work as “binding principle of organization of dictionary of any type is a definition of the word by genus and species difference” [16: 177].

To indicate this semantic categories in linguistics mainly terms “hyper-hyponymic relations” [9: 192; 22; 14; 23; 20 and many others] or “genus-species relationship” (parallel) are used, along with them often the concepts of “hyponymy” [24: 478; 25: 241; 26: 97; 27: 81; 18: 269; 28: 2; 29 and others], “categorical-specification”, “inclusive-exclusive relationship” [30] are used. For the first
time the concept of „hyponymy” was used in the book “Introduction to theoretical
linguistics” (translation from English) by a famous English scientist John Lyons. He called the relationships of hyponymy „the most fundamental paradigmatic sem-
antic relations, through which the vocabulary of a language is structured” [23: 478]. The term was formed by an example of „synonymy” and „antonymy”. The
linguist said: “Although the term is a new, the notion of hyponymy is fairly tradi-
tional; it has been recognized as one of the constitutive principles of the vocabulary
of all languages long since» [23: 478]. The statement of an Austrian terminologist E. Vyuster recorded in the book “International standardization of language in
technology” (published in 1931, translated from German) serves the proof of this: „Each concept has a higher concept that regards to it, as a concept of a car regards
to the concept of a motor (every motor is a machine, but not every machine is a
motor)” [31: 29].

L. A. Novikov calls the hyponymy in terminology as expressing of subordi-
nation and co-subordination and building on their basis hierarchy system of terms,
in which the term of a broader meaning, i.e. generic, includes the term of a nar-
rower meaning, i.e. of aspect [25: 241]. Hyponymy, says the researcher further, is
based on logical and semantic subordination: a lexical unit *elephant* is a hyponym
to *animal, tulip – to flower*. Conversely, in terms of inverse relationship (super-
ordination) *animal, flower* – are hyperonyms to the appropriate words [25: 241].

The main functions of hyponyms in terminological systems of different fields
of science and technology are to systematize the timing and interpretation of val-
ues [29: 92]. These functions are implemented in terminology by two methods:
generalization, i.e. referring to the generic concept, and specification of features
using aspect differences [32: 17]. Except systematization function, generic-aspect
signs in denoted term by subject (and corresponding concept) are required to get
a good definition of a term [6: 82].

In linguistics there exist allegations of hierarchy and relative of hyponymy.
Describing hierarchy of hyponymy, they use the concepts of logical and seman-
tic subordination (the ratio of aspect to generic) and superordination (the ratio
of generic to aspect): “… hyperonym subjugates words meanings of which it «absorbs», the last ones collectively are subordinated to the general word” [27:
81]. Relativity of hyponymy consists in that hyperonym itself can be hyponym to
the words with a broader meaning. For example, the word *flower* is hyperonym
to the words *rose, tulip, carnation* and at the same time hyperonym to the broader
concept of the *plant* [27: 81]. This property of hyponymy is important enough to
organize lexical systems, especially for terminology, as it enables consistently al-
locate classes and subclasses of lexical items (terms).

In Ukrainian linguistics, the concept of hyper-hyponymic relations as a theo-
retical and methodological foundations of the study of terminological vocabulary
was first substantiated by the authors of a manual “Ukrainian terminology” (Lviv,
1994) T. I. Panko, I. Kochan, G. P. Matsyuk. They identified hyper-hyponymic relations of terms as “universal means of thematic hierarchy of a particular system” [9: 194]. Subsequently, some aspects of the use of hyper-hyponymy were realized in exploring of different terminology systems of Ukrainian terminology: steel industry (N. K. Ktytarova, 2000) [22], forensic (T. V. Lepekha, 2000) [14], terminology of agriculture (S. B. Lubarsky, 2008) [33], land management and cadastre (O. M. Tur, 2008) [34], the tax field (O. V. Chorna, 2009) [16], journalism (M. A. Hontar, 2011) [35], Christian theological terminology (L. A. Zakrenytska, 2011) [36] and others.

2. THE WAY OF ESTABLISHMENT OF HYPER-HYponYMIC CONNECTIONS BETWEEN THE COMPONENTS OF NOUN-JUNCTAPOSITIONS

The division of semantics of the term-juxtapositions into separate components we realize conventionally as it contradicts their established interpretation in linguistics (Proceedings by N. F. Klymenko [37], K. H. Horodens’ka [38], Ye. A. Karpilovs’ka [39], L. Ye. Azarova [40; 41], T. I. Kochetkova [42], O. H. Dontsova [43], I. Ya. Myslyva-Bun’ko [44] and others). Noun-juxtaposition is a semantically inseparable integral unit, its general meaning is not derived from the meanings of the components but it is partially motivated by their content. Juxtapositions serving as naming, nomination consist of components – carriers of compulsory integral characteristic of a signified concept. For example, the semantics of the first component noun-juxtapositions економіст-демограф, інженер-будівельник, інженер-інструктор, прокурор-криміналіст, технік-геолог, технік-метеоролог supplemented, specifying the semantics of the second component. Meaning of these words can not be separated into components, since it disturbed the meaning of all compound words. Therefore, considering hyper-hyponymic relations between the components of noun-juxtapositions we took into account conditionality of division of juxtapositions semantics into separate components.

Hyperonym in composed of noun-juxtapositions is named the main, generic component and hyponym is named subordinate, aspect component.

The substance of hyponymic relations is in the contrast of lexical items which meanings relate to a particular feature such as a word for the narrower sense, species (h y p o n y m) which is opposed to the word with a wider sense, generic (h y p e r o n y m or superordynat). The meaning of the first is a part of the meaning of the second, for example, the meaning of the word програма-оригінал is a part of the meaning of the word програма, нуль-вектор → вектор, місто-округ → місто, etc. So the content of the species concept becomes wider and the size becomes smaller, so the meaning of words-hyponyms contains of bigger quantity...
of semantic components than the meaning of words-hyperonyms. This statement is illustrated by the comparison of the following terms: льон – ‘annual or perennial herbaceous tech plant which stems are used to produce fiber and which seeds are used to produce oil’ and льон-довгунець – ‘breed of flax (annual or perennial herbaceous tech plant) with long productive part of the stem, which is grown mainly for fiber’. The term льон-довгунець contains more semantic components than the term льон because semantics of the first one is specified by another semantic component – ‘the form of the stem’. Schematically it can be shown as follows (Figure 1):

Meaning of a hyponym =
Meaning of a hyperonym + new semantic component

Figure 1. Structure of hyponym’s semantic

Hyponyms can be described as words which are organized on the principle of the subordination of meanings, for example, інженер-технолог-протезист → інженер-технолог → інженер.

Term hyponym also denotes the set of words (joint-hyponyms) as elements of a certain class that are combined by the word which is the name of this class – hyperonym. For example, a number of terms літак-винищувач, літак-заправник, літак-перехоплювач, літак-ретранслятор, літак-розшідник has a hyponym word літак; блок-апарат, вакуум-апарат, гамма-апарат, рентген-апарат, токрет-апарат → апарат.

Analyze the mechanism of establishment of hyper-hyponymic connections between the components of noun-juxtapositions. Consider the series of words дуплекс-процес, крекінг-процес, триплекс-процес, шевінг-процес, скрап-процес. All lexical meanings of these nouns have one in common: the process which is “the set of sequential actions and means that are aimed to achieve a certain effect” [45]. The word процес is a hyperonym, common, generic name in relation to the words of this series and all juxtapositions of the series are hyponyms to the word процес (see Figure 2).

Figure 2. Hyponyms for a hyperonym процес
Compare the definitions of these concepts through the dictionary:

dуплекс-процес – “in metallurgy it is steel or cast iron manufacturing sequentially in two units” [45];

крекінг-процес – “decomposition of oil and heavy oil products (fuel oil, etc.) in special units at high temperature and pressure to produce gasoline, etc.” [45];

триплекс-процес – “manufacturing of steel consistently in three melting units” [45];

шевінг-процес – “finishing (scraping of thread-like chips) of teeth of non-hardened gears by shaver” [45];

скрап-процес – “open-hearth steelmaking process in which the main component metal part of the charge is steel scrap” [46].

Now it is important to identify common and distinctive semantic components (sems) of these definitions. Highlighted core words – manufacturing, decomposition, finishing, process can easily be combined by sem ‘process’. This semantic component, as you can see, is typical for all named juxtapositions and we will define it as *integral* semantic component or *integral sem* as it was suggested by L. Kasatkin [47: 147]. The same semantic components that help the meaning of the words that are the names of the processes to differ one from another, we will define as *differential* semantic components or as *differential sems* [47, 147].

In this example 3 groups of processes are clearly distinguished – the processes that are related to the manufacturing of steel (дуплекс-процес, триплекс-процес, скрап-процес), refining processes (крекінг-процес) and machine-building process (шевінг-процес). Semantic component ‘steel manufacturing process’ is common, integral for the meaning of the first three juxtapositions. At the same time it is the distinctive feature that can be opposed to the other two – ‘refining processes’, ‘machine-building process’.

Thereby, the sem ‘steel manufacturing process’ on the one hand is an integral sem within ,,its” group and on the other hand next to the sems ‘refining process’ and ‘machine-building process’ is differential sam that distinguishes the meanings of words дуплекс-процес, крекінг-процес, триплекс-процес, шевінг-процес, скрап-процес from the meanings of the words that indicate names of other processes.

3. MAIN SEMANTIC GROUPS OF NOUN-JUXTAPOSITIONS
OF UKRAINIAN TERMINOLOGY

Noun-juxtapositions of Ukrainian terminology characterized by hyper-hyponymic relations between components (over 1000 units) are quite diverse by meaning. The criteria for enrollment of noun-juxtapositions to some semantic groups
served: 1) analysis of dictionary definitions in terms of the semantics of the term; 2) conditional value of hyperonym; 3) noun-juxtaposition’s belonging to one of the terminological. The main semantic groups of noun-juxtapositions with hyper-hyponymic relations include the following concepts:

A. The names of substances, compounds and materials. In this group the highest number of terms-juxtapositions is recorded. From among them, the most productive are microgroups of hyponyms – names of chemicals and compounds (35 microgroups), the most common hyperonyms – chemical names: sodium (12 hyponyms), lithium (10), magnesium, manganese (in hyponyms 9), samarium, chromium (8), iron, cobalt, thorium, cesium (6 hyponyms): натрий-ацетат, натрій-карбонат; літій-нітрит, літій-силікат; магній-бромід, магній-карбонат; самарій-карбід, самарій-сульфід, самарій-форміат; залізо-нітрит, залізо-силікат; торій-бромід, торій-йодид, торій-карбід; золото-бромід, золото-йодид, золото-сульфід, золото-фосфід, золото-ціанід; рутеній-нітрат, рутеній-селенід, рутеній-флюорид; антимон-бромід, антимон-сульфіт, антимон-хлорид, etc.

B. The names of devices, equipment, machinery. This group has slightly fewer noun-juxtapositions. As a part of a test, the group juxtaposes three semantic groups which are determined: 1) the names of instruments and devices (фільтр-компенсатор, фільтр-конденсатор, фільтр-помпа; гамма-апарат, рентген-апарат, тюркрем-апарат; гром-щогла, кабель-щогла; факс-адаптер, факс-плата; альфа-спектрометр, бета-спектрометр, etc.); 2) the names of complex mechanisms (дерик-кран, кабель-кран; мотор-компресор, мотор-конвертер, мотор-редуктор; трансформатор-редуктор, зигзаг-трансформатор, etc.); 3) the names of vehicles (вагон-маїстерня, мотор-вагон, вагон-рефрижератор; літак-винищувач, літак-заправник; автомобіль-тягач, автомобіль-самоскид, etc).

C. The names of effects. Among them were singled out five semantic groups: the names of physical and mathematical phenomena, the names of financial and economic concepts, healthcare phenomena, astronomical concept names, phenomena – generalized abstract concepts. In their stock there were fixed juxtapositions with often used names of letters in the Greek alphabet in preposition to signified component альфа-, бета-, гамма-, дельта-, ета-, мю-, ксі-, ікс- та ін.: гамма-функція, дельта-функція, ета-функція, ксі-функція; альфа-проміння, бета-проміння, гамма-проміння, дельта-проміння, ікс-проміння etc. In the special literature the use of parallel forms with the names of some letters and forms with pictogram is reported: альфа-проміння та а-проміння, мю-частички та μ-частички, etc.

D. The names of people by the profession. The most efficient microgroups – with hyperonyms doctor (of 68 hyponyms), technician (36 hyponyms), engineer (of 29 hyponyms), apparatchik (17 hyponyms), locksmith
(13 hyponyms), painter (of 12 hyponyms) and others: лікар-бактеріолог, лікар-гомеопат, лікар-лаборант, лікар-стоматолог-ортодонт; технік-агрометеоролог, технік-ортезист-гіпсовилювальник технік-радіолог, технік-дизеліст; інженер-будівельник, інженер-випробувач, інженер-нафтовик, інженер-проектувальник; слюсар-електромонтажник, слюсар-механік, слюсар-сантехнік; апаратник-індукіонавар, апаратник-нейтралізаторник, апаратник-сульфітувальник; художник-конструктор, художник-модельєр, художник-реставратор; юрист-консультант, юрист-правознавець, юрист-практик, etc.

E. The names of people by the position or status. For the called semantic group characteristic is that almost all noun-juxtapositions are formed on the model of the Ukrainian language when a component-exponent of generic concept is in preposition. Mostly juxtapositions of this group belong to the terminology of jurisprudence and law: власник-бенефіціарій, власник-користувач, власник-розпорядник; дитина-делінквент, дитина-правопорушник; член-координент, член-засновник; директор-розпорядник, директор-виконавець; міністр-соціаліст, міністр-резидент and others.

4. CONCLUSIONS

According to the research, it is possible to make the following conclusions. Hyper-hyponymous relations are the main type of semantic relations between the components of noun-juxtapositions of Ukrainian terminology (it was analyzed more than two thousand of terms, the most of them – 52% – are connected to be generic-species relations). The establishment of these semantic relations between components of juxtapositions is similar to their establishment between independent words with the help of integral and differential sems. The most productive semantic groups of terms-juxtapositions connected by hyper-hyponymous relations are the names of substances, compounds and materials, the names of devices, equipment, machinery, the names of effects.

Further investigation of hyper-hyponymy can be connected with the research of hyper-hyponymous relations between the components of juxtapositions of general vocabulary.

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**SUMMARY**

In the article the nature of hyper-hyponymic relations is analyzed, their meaning for organizing and systematizing of the terminology vocabulary is found. The features of hyper-hyponymic relations between the components of noun-juxtapositions of Ukrainian terminology are established. The basic terminology of semantic noun-juxtapositions by reference “hyper-hyponymic” is provided.

**Keywords:** noun-juxtapositions, hyper-hyponymic relations, hyperonym, hyponym

**STRESZCZENIE**


**Słowa kluczowe:** rzeczownik-zestawienie, hiper-hyponymiczne stosunki, hyperonym, hyponym