

Overview of Basic Terms of Technical Lexis of Mechanics in the Albanian Language

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Abstract

The subject of the study in this paper is the basic terms of the field of mechanics as a broad field, understanding with this concept not only nouns with nominal base, like pair and kinematic pair, but also other units that can be called terms if they are seen from a certain perspective when connected to the system by terms of nouns or when expressing the specifics of the field as kinematics (adj.) - kinematic (adv.) - shifting (v.), in Albanian kinematik-e (mb.) – kinematikisht (ndajf.) – zhvendoset (fol.). As it is well known in the compilation of terminology dictionaries, both criteria apply, although it can be said that there is no definite stance on this problem. By appearing as single word units, on their own, as well as in wider compounded units (word group), these units serve as compound elements of around 70-80% of the whole Mechanics vocabulary, as they are in Albanian and respectively in English: mekanizëm – mechanism, makinë – machine, hallkë – link, zinxhir – chain, zhvendosje – displacement, lëvizje – motion, rrotullim – rotation, rrotulloj – rotate, rrotullues-e – rotary, kinematik-e – kinematic, kinematikisht – kinematically etc. All of this base vocabulary appears mainly in the basic subfields of Mechanics, in the Theory of Mechanics and in the Applied Mechanics in Machines, in the special subfields, as well as in the subfield of Mechanical Technology of automobiles, of heat technology etc., but it connects also with the base fields of knowledge which stands at the foundation of Mechanics, as with mathematics, geometry, physics, chemistry etc.

Keywords: basic terms, the vocabulary of mechanics, the Albanian language, the English language.

Introduction

Historically, mechanics as a field of knowledge, especially in the developed countries of Europe, has existed since ancient times (in some basic conceptual microsystems it is seen since Archimedes); later, in the Middle Ages, its systems were further developed by Galileo, and later by Newton. However, mechanics as a science has developed over the centuries as part of physics, without completely having its own identity. Its detachment from physics began in the 18th century with the rise of small hand-made production to large production with machines. The introduction of steam engines, internal combustion engines, etc. also led to the differentiation of other fields of physics, such as electricity (electric machines), optics, acoustics, etc., where mechanics itself was differentiated into a range of subfunctions within it as a wide field.

The segregation of terminology as a distinguished field of study¹ of linguistics (of lexicology) and as a special vocabulary (organized in a system of a particular field of knowledge) in the languages of countries with developed technology has been accepted since the mid-20th century. As the first works that laid the basics of terminology as a field of study, we can mention "Standardization in Technology?" (E. Vyster², Austria) and "Basics of Terminology" (Lote³, Russia). We mention these two

¹ H. Felber, "Terminology manual", UNESCO and Infoterm, Paris, 1984.

² E. Wüster, "Internationale Sprachnormung in der Technik", UDI, Berlin, 1931.

³ D. Lotte, "Osnovi postrojenja naučno-tehničke terminologije", Moskva, 1961.

works to point out that the object of their study has been mostly two important areas of knowledge, identified at that time (in the 30s of the XX century), such as are today, mechanics and electricity.

Precisely the vocabulary of one of these two fields, the terminology vocabulary of mechanics, served as a basis for illuminating many theoretical problems of terminology, especially in relation to its basic principles, which were extended in other terminologies. Even Vystery, who later became the father of terminology, practically implemented the general terminology principles and methods of processing it in the terminology work "Machine tool"¹. Even nowadays this work remains a model for the development of a proper terminology dictionary (of systematic type with definitions). Though this dictionary was designed with classical (traditional) methods, it is still a model for the compilation of dictionaries by electronic means (computer). From what we said above, it is known that terminology of the mechanics field remains a broad terrain, in which we can rely on the vocabulary of its many subfields to further deepen in their particular study. It may be noted that for some sub-areas, as the subfield of cars, of cutting machines, and machine elements, a range of two or more language dictionaries has been developed with a large number of terms, especially in developed technology countries such as England, Germany, Italy, Russia and others².

Organized work with terminology in Albania

In Albania, organized work with terminology began several decades later (after World War II) compared to other Western European countries, to some extent even to Eastern Europe. This work is mainly focused on drafting of terminological dictionaries, based on the basis of terminology created in different fields of knowledge in Albanian, under the influence of contacts with the scientific-technical literature of foreign languages (mainly Russian), as well as a result of the introduction of modern technologies in Albania and of the connection with the scientific-technical revolution in almost all fields of human activity, as in any country of the world. From this point of view, it can be underlined that the work in the field of terminology has preceded the study and research work in this field until the 80's of the 20th century. Until this time, work continued on the drafting of terminological dictionaries, where extensive areas of knowledge became the object, including the field of mechanics³. However, the principles and methods, upon which the dictionaries were drafted, were borrowed from the language experience with developed terminology of other countries.

After the 80s (of the last century), besides the drafting of terminological dictionaries, not only of broad but also narrow areas, began a vigorous activity for the generalization of work experience for the elaboration of numerous dictionaries, which was originally materialized in dealing with a series of theoretical problems in articles and scientific works.

Organized work with terminology in Kosovo

In Kosovo, the work in the field of Albanian terminology, within the framework of the Federation of Yugoslavia, was more limited to the reproduction of terminological dictionaries, drafted in Albania, accompanied by terms from the Serbian language.

As it has become acceptable to date, the first place among these languages is taken by English, which in today's time has gained the right to a wide-ranging international language.

Of course here the terminology of this language in the standard (comparative) level with an Albanian terminology (or its terminology in general) would shed some light on many problems of Albanian terminology, especially in solving the issues of systematization and standardization of terminology. Specifically, in this comparative level with the English language, problems of the attitude towards foreign terms, as well as the albanianized terms so far, could be solved.

Vocabulary of special study interest - the terminology of mechanics

¹ E. Wüster, "Machine tool", 1968.

² We can mention a range of dictionaries in the various subfields of mechanics, mainly for Automotive, Machine tools, Car Detail, etc.: a. I. Belkind, "English-Russian Dictionary on Machine Elements" (10000 terms), Moskva, 1959; b. V. Shvarc, "Kratkij iljustririvanij rusско-anglijskij slovar po mashinostroenjiju" (3395 terms), Moskva, 1983; c. Ju. Kerzhenjevič, "Italiansko-russkij avtomobilnij slovar" (around 10000 terms), Moskva, 1969; d. "Anglo-russkij teplotehničeski slovar" (23000 terms), Moskva, 1966.

³ 1. "Fjalor i terminologjisë tekniko-shkencore", 8. "Terminologjia e mekanikës" (shqip-rusisht-frëngjisht), Tirana, 1963. 2. "Fjalor i termave themelorë të mekanikës", Tirana, 2002.

Among terminologies of various fields of knowledge, especially of applied sciences, a vocabulary of particular interest in the study, is the terminology of mechanics. This is related, on one hand, with mechanics itself as a basic technical science with wider application range within its own limits, and, on the other hand, by integrating it into many other areas of knowledge, starting with the more traditional ones (electricity, construction), as well as the more modern ones (electronics, computer science, etc.). In addition, the main concepts of all fundamental sciences such as mathematics, geometry, physics and chemistry are at the core of its theoretical and practical bases. This wide and multiple complex connection of mechanics as a science with many areas of knowledge makes its terminological vocabulary widely used and as such has attracted and attracts even today the attention of scholars of the terminology field. Many of the phenomena that are observed in it, in the field of word formation (of term formation), in that of semantics (like synonymy, polysemy), serve as a model for solving various problems of theoretical and practical value for the Albanian terminology in general.

Till today, the terminology of mechanics has become a direct subject of study in monographic works, defended as a topic of dissertation¹, and has also been elaborated in scientific articles² in the Albanian language literature on terminological vocabulary problems. In addition, this terminology is elaborated as a vocabulary of specific subfields in technical standards, and is also reflected in separate sections in technical journals³.

Studies undertaken in the field of terminology of mechanics and its processing, reflected in the respective dictionaries, allows for a deeper analysis in certain parts of it, to cover and solve a number of problems related to this particular terminology, as well as with other terminologies.

The idea of relying on a field of knowledge as the basis of the terminology system, has been developed by both domestic and foreign terminologists, both in extensive works and in special articles. This gives the opportunity to address and solve a number of problems related to the systematization of terminology, its standardization on the inter-terminological level (within one language) and on the inter-terminological level (on the sub-linguistic level).

Relying on a field of knowledge provides the opportunity to fully identify (semantically equivalent) the relation of the equivalent concept-term and vice versa, as well as to more easily detect the links between concepts in general, reflected in the relevant terms, which has a particular value in the practise of terminology, especially in the work on processing the terminology and its reflection in the respective dictionaries.

As it is known, terminology of each field of knowledge, as a self-contained system, as well as the terminology of mechanics, consists of single-word and phrase designation units, of which the latter, the phrase units, occupy almost 70-80% of the complete terminological vocabulary. From this point of view, all the single-word terms (word terms) would be accepted as the basic vocabulary of the terminology of mechanics.

The basic terms of this terminology can be seen from two points of view:

as a common vocabulary, which could be confined within the underlying subdivisions, which further narrows the amount of word terms (here the vocabulary of subfields such as theory of mechanics, applied mechanics, resistance of materials etc. would be included, and

as a vocabulary, consisting of the terminology units of each subfield (even special ones, as from the sub-field of automobiles, of thermotechnics, of agricultural machines), but which themselves are the basic terms of these subfields. By form they are word terms and mark key concepts such as: *piston, crank, engine, differential*; in Albanian: *piston, manivelë, motor, diferencial* (from automotive sector); *steam, turbine, generator*; in Albanian: *avull, turbinë, gjenerator* (technical term).

¹ A series of monographs have been written, defended as subjects of dissertations (from 1983 to today), among them we mention: V. Dervishi, "Terminologjia e mekanikës në gjuhën shqipe", Tirana, 1989. S. Pllana, "Leksiku terminologjik bazë i mekanikës në gjuhën shqipe në përqasje me gjuhën angleze", Tirana, 2010.

² 1. V. Dervishi, "Temat e mekanikës në gjuhën shqipe dhe burimi i tyre konceptor", "Sf", 1991/1; 2. A. Duro, "Fjala shqipe në terminologjinë e mekanikës", "Sf", 1984/4; 3. S. Pllana, "Disa çështje të formimit të termave inxhinierike në gjuhën shqipe", Teknika, 2/07, University of Prishtina FSHTA Ferizaj, 2007.

³ G. Pllana, S. Pllana, "Terminologjia për teorinë e makinave dhe mekanizmave", part I-VIII, Teknika (2/03 to 2/08), University of Prishtina FSHTA Ferizaj, 2005 to 2008.

On the other hand, in the basic vocabulary quality, the constituent parts of the phrase terms will also be inserted, when they, from the word formation aspect (term formation) connect in the system with the word terms as well as when they, themselves, mark specific concepts related to the field (subfield) in question. The specific character of the conceptual content that they express, as well as the connection to the system with the one-word terms that are motivated, are two fundamental traits that motivate their separation as a vocabulary of basic terminology.

As we can compare *axis* and *axial* in Albanian *aks* and *aksor* (*aksial*) along with *meshing* and *mesh*, in Albanian *ingranim* and *ingranoj*, along with *axis* and *axially*, in Albanian *aks* and *aksialisht*. This means that as basic terms, the constituent elements of the phrase terms will also be accepted, when they appear as terms in other forms of speech, except as nouns, this means as adjectives: (*axial*, *kinematic*, *sliding*, in Albanian *aksor-e*, *kinematik-e*, *rrëshqitës-e*), as verbs: ((to) *mesh*, (to) *couple*, (to) *rotate*, in Albanian *ingranohet*, *çiftëzohet*, *rrotullohet*); as adverbs: (*axially*, *kinematically*, in Albanian *aksialisht*, *kinematikisht*). By not getting into the controversial aspect of the problem, which is not the subject of this paper, we will accept as terms not only the terminological designation units, expressed by nouns and the phrases with noun base¹, but also the units expressed by other parts of speech, especially when they express the field specificity and connect to the word formation system with the word term as *couple* and (to) *couple-coupled*, in Albanian *çift* and *çiftëzohet-i çiftëzuar*, *axis-axial-axially*, in Albanian *aks* and *aksial-aksialisht*.

The observation of terms as units that arise in other parts of speech has particular importance in discovering the mechanism of terms formation because, on one hand, the single-word terms themselves have a certain word formation structure like *sliding* from *slide*, in Albanian *rrëshqitje* (nga *rrëshqit*), (as an adjective) from *slide* (as a verb), but they themselves serve to create many phrases, as they are in their composition like: *sliding* (as adjective) in *sliding motion*, *rotating* (as adjective) in *rotating link*, in Albanian *shkarës-e* in *lëvizje shkarëse*, *rrotullues-e* in *hallkë rrotulluese*.

The treatment of these expression forms of concepts (i.e., with adjectives, verbs and adverbs) take practical value to reflect them in the relevant terminology dictionaries. Their involvement is important in highlighting the systemic character of terminology at the form level, like *machining-machined-machining* (as adjectives), in Albanian *ingranim* and *ingranohet*, along with *përpunim* and *përpunoj-i përpunuar-përpunues-e*. In the context of the study of terminology, this is a glimpse of terms from the linguistic point of view. In this case, the conceptual point of view (which belongs to the terminologist and mainly the specialist) is combined with the linguistic view of the linguist, who sees the term at the word level. In this case, the component parts of the phrase can also be treated as independent units. Thus, for example, on one hand, *a processing machine* as a term in its own, in Albanian *makinë përpunuese*, but also *processor* as an independent unit, in Albanian *përpunues-e*, which can either be presented in an authentic terminology dictionary, in addition to giving it to single-word or phrase units, or another terminological vocabulary can be created, whereby, based on the forms reflected in it, the single-word units represented not only by nouns, but also adjectives, verbs and adverbs to be in it.

Of course, these units, to have the right to enter a vocabulary of such a type, should be connected to the word-forming system (term formation) with the noun term or with each other, for example: *thermodynamic/thermodynamically*, in Albanian *termodinamik-e/termodinamikisht*, that are related to *thermodynamics*, in Albanian *termodinamikë*.

Below we are modeling a terminology-teaching vocabulary in both languages, facing a proper traditional terminology dictionary.

a) In Albanian

The traditional vocabulary model
(reflecting the complete terminological

The terminology-teaching vocabulary model
(reflecting the basic terms)

¹ In the terminology dictionary (of the series), published by the IGJL, there is no firm stand for this problem. In the first vocabularies (about 10), the adjectives, rarely verbs or adverbs terms (Dictionary of Mathematics 8: mechanic and mechanically) are represented in them, while in the later dictionaries are the nouns with base noun terms. In Vyster's Dictionary, which is also referred to as a pilot dictionary, we also include terms such as (to) *work*, (to) *machine*, (to) *tool*, but not adjective and adverbial terms.

conceptual system)

<i>hallkë</i>	<i>hallk/ë-a</i>
<i>hallkë udhëzuese</i>	<i>udhëzues-e</i>
<i>hallkë e udhëzuar</i>	<i>i/e udhëzuar</i>
<i>hallkë lëvizëse</i>	<i>lëvizës-e</i>
<i>hallkë e lëvizshme</i>	<i>i/elëvizsh/ëm-me</i>
<i>hallkë rrotulluese</i>	<i>rrotullues-e</i>
<i>hallkë e rrotullueshme</i>	<i>i/e rrotulluesh/ëm-me</i>
<i>hallkë e zinxhirit kinematik</i>	<i>lëvizj/e-a</i>
<i>zinxhir</i>	<i>lëviz</i>
<i>zinxhir kinematik</i>	<i>rrotullim-i</i>
<i>zinxhir traktori</i>	<i>rrotulloj</i>
<i>lëvizje</i>	<i>rrotullohet</i>
<i>lëvizje rrotulluese</i>	<i>kinematik-e</i>
<i>lëvizje zhvendosese</i>	<i>zinxhir-i</i>
<i>lëvizje translative</i>	<i>traktor-i</i>
<i>zhvendosje</i>	<i>zhvendosj/e-a</i>
<i>zhvendosje translative</i>	<i>zhvendosës-e</i>
<i>mekanizëm (+ 148 togflalështa)</i>	<i>translativ-e</i>
<i>mekanizëm katërhallkësh</i>	<i>mekaniz/ëm-mi</i>
<i>mekanizëm katërhallkësh i çernieruar</i>	<i>katërhallkësh-e; i/e çernieruar; çernieroj (çernierohet)</i>

b) In English

<i>link</i>	<i>link</i>
<i>driving link</i>	<i>driving</i>
<i>driven link</i>	<i>driven</i>
<i>moving link</i>	<i>moving</i>
<i>movable link</i>	<i>movable</i>
<i>rotating link</i>	<i>(to) move</i>
<i>rotary link</i>	<i>rotating</i>
<i>rotary link</i>	<i>rotary</i>
<i>link of kinematic chain</i>	<i>(to) rotate</i>
<i>chain</i>	<i>kinematic</i>
<i>kinematic chain</i>	<i>chain</i>

<i>traktor chain</i>	<i>traktor</i>
<i>motion</i>	<i>motion</i>
<i>rotary motion</i>	<i>displacing</i>
<i>displacing motion</i>	<i>displacement</i>
<i>translational motion</i>	<i>(to) displace</i>
<i>displacement</i>	<i>translational</i>
<i>translational displacement</i>	<i>mechanism</i>
<i>mechanism (+ 140 togfjalësha)</i>	<i>four-bar (-) (mechanism)</i>
<i>four-bar mechanism</i>	<i>hinged</i>
<i>hinged four-bar mechanism</i>	<i>(to) hinge; (to be hinged)</i>

Conclusion

From a lexical point of view, the terminology of mechanics consists of basic expression units that relate to other fields, such as broad-spectrum terms not only in this terminology, but also with terminologies that are related to it, such as: link, pair, chain, mechanism, in Albanian *hallkë, çift, zinxhir, mekanizëm, makinë, bosht, aks*. Both languages (Albanian and English) prevail in terms of autochthonous words such as: *link-hallkë, linkage-lidhje, pair-çift, chain-zinxhir, shaft-bosht (machine)*.

Special importance for the study of basic terms also takes their identification in other fields of mechanics, as well as their construction from the term-formation point of view.

In a similar way, this terminology is also related to other areas, such as: construction machines, automobiles, agricultural machines, thermodynamics, whose terms are often used in these two subfields in both languages: connecting rod, crank-shaft (in Albanian: *bjelë, manivelë, motor*) (aut.); cutting mill, cutting tool, rollforming, slotting (in Albanian: *thikë, frezë, incizim, gdhendje*) (metalcutting machines).

Indirectly they have meeting points with mathematics, physics, descriptive geometry, technical drawing, and so on, (English: equation, abscissa, coordinate) -, (Albanian: *ekuacion, abshisë, koordinatë* (Mathematics); (English: design, designing, projection) - (Albanian: *projekt, projektim, projekcion, vijëzim* (Geometry).

A very important phenomenon is the enrichment of the vocabulary of mechanics, which is noticed in both languages. Thus, parallel constructions can be displayed in both languages: i.e: *mechanism-four-bar mechanism-joint four-bar mechanism = (Albanian) mekanizëm-mekanizëm katërhallkësh-mekanizëm katërhallkësh me çernierë*. This vocabulary is presented in the hierarchy plane and the term connection in the system, by fields, microfields, to conceptual cores (finite links).

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