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SEMANTIC FIELDS IN THE STRUCTURE OF THE AGRICULTURAL THESAURUS

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Abstract:
This article studies how semantic fields are formed in the process of creating a thesaurus in the agricultural sector and how they are expressed through systemic lexical relations. The author explains the concept of a semantic field based on lexical-semantic theory and analyzes its functions in a thesaurus with examples. It is argued that it is possible to effectively form a sectoral thesaurus by grouping lexical units existing in agricultural terminology into semantic fields.

Keywords: Semantic field, thesaurus, agricultural terminology, lexical system, lexical-semantic relations.

Introduction

Subject thesauri play an important role in systematizing the lexical basis of each scientific field and organizing the semantic relationships between terms. In particular, as the number of various terms and terms used in the agricultural field increases, the need to group and generalize them semantically is increasing. The concept of semantic fields plays a central role in this process.

Semantic fields allow lexical units to be divided into groups that are compatible in meaning and function. In the construction of an agricultural thesaurus, thematic sections, hierarchies, and models of interrelationships are formed on their basis.

Theoretical foundations of the concept of semantic field. In linguistics, the term “semantic field” arose in the 20th century in the direction of lexical semantics. It was first used by G. Ipsen and later by J. Trier in the theory of grouping lexical units based on semantic relationships. Later, this theory was developed by L. Weisgerber, G. Lefebvre, R. Developed by Jakobson et al.

A semantic field is a set of semantically related words that serve to express a specific field. They are:

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• Horizontal relations (synonymy, antonymy, hyponymy);
• Linked through vertical relationships (hierarchical subordination — general and specific meanings).
Semantic fields in the agrarian thesaurus are built based on these relationships.

Agrarian terminology and its systematization. The lexicon used in the agricultural field is divided into several directions according to its content and function, and they form a specific semantic field within themselves. Such trends reflect the lexical expression of complex processes in the agricultural system. First of all, land crops and their species can be an example of this. This area includes grain crops (wheat, barley, rice), oil crops (sunflower, soybean), vegetables (tomatoes, onions), sugarcane products (watermelon, melon), horticultural products (apples, grapes, pomegranates), and technical crops (cotton, tobacco). This lexicon is directly related to human activity and the process of food production, and terms are grouped according to nature, purpose of cultivation, and field of use. The second important area is agricultural machinery and equipment. This semantic field includes machinery used to mechanize agricultural work, such as tractors, plows, harrows, seeders, combines, and trucks. These lexical units are related to the processes of plowing, sowing, cultivating, harvesting, irrigation, and transportation of land. Technical equipment is semantically interconnected, and their names are categorized based on their function, phase of application, and design. The third direction is the semantic field of fertilizers and agronomic tools. This field includes organic fertilizers (felt, compost), mineral fertilizers (nitrogen, potassium, phosphorus), biological fertilizers (bio humus, microorganism-based products), as well as pesticides and protective agents (herbicides, insecticides). These terms denote substances used to increase plant growth, increase yield, and protect against diseases. They are semantically grouped according to their source, object of influence, and method of use. The next direction is the process of land cultivation. This area includes verb terms denoting actions in agricultural activities such as plowing, leveling, sowing, irrigation, fertilization, weeding, and harvesting. They are associated with human labor, the use of machinery, and agronomic knowledge, and form coherent units in meaning based on the sequence of work processes. Finally, the vocabulary related to the field of agrarian economics and marketing is one of the important parts of the agrarian thesaurus. It includes terms

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such as farmer," farm, cooperative, subsidy, tax, sale, processing, and packaging. These lexical units reflect economic processes from the production of agricultural products to their release to the market. Agrarian economic terms form a semantic system expressing product movement, resource management, and financial relations. Thus, the lexicon in the agrarian field is thematically, functionally, and spiritually rich and includes various lexical fields. Each of these areas is of particular importance in the thesaurus structure as a semantically coherent unit.

The functions of semantic fields in the construction of a thesaurus

Order and classification. To determine the semantic relationships within words in a thesaurus, it is necessary to divide them into semantic fields. This makes it easier to understand and search for hundreds of terms.

Creating a hierarchical structure

Hierarchy reveals connections from general terms to narrower terms. For example:

• Plants (general category). Cereal crops (hyponym): Wheat, Barley, Rye

Distinguishing synonyms and homonyms

Synonyms are often found in agricultural terminology; for example, “native fertilizer” and “organic fertilizer” are used interchangeably in some sources. In the thesaurus, their difference or similarity is indicated by the semantic field.

Standardization of the general approach

In the agricultural sector, different terms are used in different regions. For example, the word "sin" can mean "powdered fertilizer" in some regions. Through the semantic field, these terms are equated with standard and scientific terms.

Practical example: Semantic field "Fertilizers" in Agrarian thesaurus

CATEGORY	TYPES	EXAMPLES
Fertilizers	Organic fertilizers	Compost, felt, livestock waste
	Mineral fertilizers	Nitrogen, potassium, phosphorus
	Biological fertilizers	Biohumus, bacterial fertilizers

The terms in this field are grouped around the common meaning of 'fertilizers', but each forms a microfield in its own right.

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Summary

Semantic fields serve not only to classify lexical units in the creation of an agrarian thesaurus but also to correctly and precisely express the terms in the field in terms of meaning. Through them:

• Thesauri are organized logically, hierarchically ,and functionally;

• Synonyms and differences between different terms are revealed;

• The agrarian knowledge base will be integrated into an integrated system.

Proposals. 1. Creation of an electronic thesaurus database for the agricultural sector in the Uzbek language

Currently, digitization of sectoral knowledge and correct systematization of information has become one of the urgent tasks. In the agricultural sector, this task is even more important, since terms are used differently in different sources, there are many synonyms, and the level of standardization of terms is insufficient. Therefore, the creation of a special agricultural thesaurus in the Uzbek language is of great scientific, educational, and practical importance. The electronic thesaurus is in the form of a database, in which terms are systematized not in alphabetical order but based on semantic and thematic areas. Such a system is convenient and useful for agricultural specialists, students, researchers, translators, and specialists in public policy. Also, by creating an electronic thesaurus, it becomes possible to place it on a web platform, implement a search mechanism, and integrate it with mobile applications.

2. Using modern corpus analysis methods to classify terms into semantic fields

Instead of traditional intuitive approaches to identifying semantic fields, it is very effective to introduce modern corpus linguistics methods. Corpus analysis is a method of automatic analysis of a collection of texts using a computer, which allows you to identify semantic, statistical, and contextual relationships between words. A corpus database is created based on texts related to the agricultural sector in the Uzbek language (scientific articles, textbooks, regulatory documents, and media materials), and indicators such as how terms are used and with which words they often occur together are determined. This information is very useful for automatically or semi-automatically identifying semantic fields, linking terms, and determining their functions. Also, based on corpus analysis, it will be possible to provide specific contextual examples for each term in the thesaurus.

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3. Create a separate dictionary and hierarchical models for each field

The structure of the thesaurus requires not only providing a list of terms but also presenting them in hierarchical (step-by-step) and network relationships. Therefore, it is advisable to prepare a separate dictionary for each semantic field - for example, for areas such as "crops", "agricultural machinery," and "fertilizers." These dictionaries should contain the definition of the term, grammatical features, synonyms and antonyms, scope of application, and, if necessary, illustrative examples. At the same time, hierarchical models (i.e., groupings in the relationships "large-small," "general-private," and "thing-part") are created within each field and displayed through visual diagrams. This approach helps to create a holistic model of lexical relationships, systematize sectoral knowledge, and demonstrate the logical connection between terms.

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