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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

**SCIENTIFIC STYLE IN THE AZERBAIJANI LITERARY
LANGUAGE DURING THE YEARS OF INDEPENDENCE**

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INTRODUCTION

Relevance of the research topic and degree of its development. In the 1990s of the 20th century, the achievement of independence in our country created broad opportunities for raising the level of development of Azerbaijani science. Successful reforms and the preparation of the national development concept, as one of the main directions of state policy, have led to the development of fields of science. The integration of scientific fields and the strengthening of mutual relations influence the dynamism of language units, thereby conditioning the continuous change and development of the language. In the formation of the literary language, the interrelation of styles is distinguished by its functionality. In the functionalization of styles and in the expression of the mode of thinking, the relations of connection within the system to which the language units used directly belong are taken as the basis. The language units reflected in the lexical layer of the language during the process of development create different forms of speech and thereby form styles. In this form of expression, language units combine and, depending on the function they perform, create a system of styles. Within the system of styles, language units realize their functions in a particular sphere in accordance with the communicative purpose. In these spheres, the selection of language units is determined by the functional task and serves the more precise expression of thought. From this perspective, the classification of functional styles is based on forms of thinking and situational contexts that serve communicative interaction within a particular social sphere. Each of these characteristics shapes the functional styles of the language, and the functional styles of the language determine its potential. Scientific style is one of the main styles that contributes to the development of the literary language. Scientific style has developed differently at various stages. Research has been conducted in linguistics in this direction. Vahid Adilov investigated the sources and directions of the enrichment of the scientific style in

the 19th century Azerbaijani literary language¹. In the dissertation, the morphological and syntactic features of the scientific style of this period were analyzed, and its paths of development were identified. Afina Alizade conducted research on the scientific style in the Azerbaijani literary language at the beginning of the 20th century and its directions of development. On the basis of scientific works written during this period, she examined the main characteristic features, formation processes, and sources of the scientific style². A.Aghayeva analyzed the development of styles in Modern Azerbaijani literary language through their mutual interaction and examined the process of transition between them³. As can be seen, studies on the development of the scientific style have been conducted in different periods. This is because the development of language units, which constitute the main factor in the formation of the scientific style, emerges as a collection of terminological systems related to various fields of science. During the years of independence, the development and integration of scientific fields led to the emergence of new disciplines. In particular, in the modern period, aviation, informatics, logistics, economics, and political science have been established as independent fields of science. The exact sciences (physics, mathematics), natural sciences (biology, geography), and social sciences (history, political science, etc.) possess their own distinctive linguistic features. In this respect, styles develop through interaction with the literary language, and among these styles, the scientific style differs from others in terms of its formation characteristics and specific features. The creation and systematization of new knowledge necessarily require the generalization of accumulated facts. These generalizations shape the scientific style, and its principal

¹ Adilov, V.Z. XIX əsr Azərbaycan ədəbi dilinin elmi üslubu / V.Z.Adilov– Bakı: – Nurlan. 2002 – 133 s.

² Əlizadə, A.C. XX əsrin əvvəllərində Azərbaycan ədəbi dilinin elmi üslubu. /A.C.Əlizadə – Bakı: – 1996, – 104 s.

³ Ağayeva, A.R. Müasir Azərbaycan ədəbi dili üslublarının qarşılıqlı əlaqəsi / A.R. Ağayeva fil. elm.dok... dis. – Bakı: – 2011. –383 s.

characteristics distinguish it from other styles. The theoretical identification of the essential features that distinguish the scientific style from other styles, the determination of the forms of connection among the constituent units of a text, the directions of development of the scientific style, and the factors influencing the enrichment of terminological vocabulary its principal component, as well as the determination of the relationships among these elements, have not yet found a complete solution in linguistics. The expansion of scientific fields during the years of independence has also influenced the directions of development of the scientific style. The advancement of various branches of science, the rapid progress of informatics and computer technologies, as well as the social sciences, has led to the emergence of new concepts. The nomination process of these concepts, the main directions in the formation of scientific concepts in term formation, as well as the methods and norms of term formation through the internal resources of the language and through borrowings, should be determined. Just as the adaptation of borrowed terms to the norms of the literary language is a necessary requirement, the specific features reflected in the terminologization of commonly used words should also be taken into consideration. The expansion of political and economic relations among countries, together with the multidirectional development of scientific fields throughout the world, makes the continuous introduction of new terms into the language inevitable. In the modern period, during the development of the scientific style, terms related to various fields of science are borrowed directly from European languages. In this process, the assimilation and standardization forms of borrowed terms should be determined. It is also necessary to approach the formation of terms, which play an important role in the development of the scientific style, from a new perspective and to identify the ways in which they are formed.

During the years of independence, works written in various fields of science played an important role in the development of the literary language. These works, written in a scientific style, did not characterize the development of the vocabulary of the language, its grammatical and syntactic features. Changes in the vocabulary of the

language, grammatical features of the language are reflected in the texts of scientific works. Determining these features allows for the clarification of the specific language features of works written in a scientific style. Solving these problems related to scientific style in Azerbaijani linguistics determines the relevance of the topic.

Object and subject of the research. The object of the research is the developmental directions of the scientific style in the modern Azerbaijani literary language. The subject of the research is the identification of the factors and sources of enrichment that determine the functionality of the scientific style in the modern Azerbaijani language.

Goals and objectives of research. The goal of the research is to investigate the development process and directions of the scientific style in the Azerbaijani literary language during the years of independence. To achieve this goal, the following objectives have been identified in the dissertation:

- To identify and analyze the fields of science that reflect the development of the scientific style in the Azerbaijani language;
- To investigate the normalization of the scientific style and its interaction with the literary language based on linguistic facts;
- To determine the development of the scientific style and its specifics in the Azerbaijani language during the years of independence;
- To clarify the role of various fields of science in the development of the scientific style;
- To investigate the developmental directions of the terminological lexicon related to the scientific style, to determine the ways and sources of its formation;
- To determine the mechanism of expression of different levels of language in works related to the scientific style;
- To determine the development of the language at the lexical level based on works written in the scientific style;
- To observe the process of term formation in works related to the scientific style, to determine its specific features;
- To determine the development of the terminological lexicon in works written in the scientific style at the expense of the internal

capabilities of the language;

- To define the process of the introduction of borrowings into the language, which play an important role in the enrichment of the literary language in works written in the scientific style;
- To clarify the regularities of the development of the scientific style during the years of independence;
- To determine the logical-linguistic foundations of the formation of the scientific style;

Research methods. In the research work, an analysis has been conducted in a synchronic direction using descriptive and comparative methods to determine the directions of development of the scientific style. Bilingual and multilingual terminological dictionaries reflecting the development of scientific style have been used as sources during the research.

Main provisions put forward for defense: The provisions put forward in the research work are as follows:

- The study of the scientific style from the thematic, structural-semantic aspect allows studying the vocabulary of the Azerbaijani language and determining its functional capabilities.
- Works related to various fields of science written in the scientific style make the literary language develop.
- The vocabulary of scientific works possesses field-specific characteristics, where the balance between borrowed and native words varies across different disciplines.
- Modern Azerbaijani literary language is distinguished by the use of international lexicon in the scientific style.
- The terminological lexicon that has emerged in connection with the development of the scientific style enriches the literary language.
- Borrowed terms used in scientific works written in the scientific style are adapted to the Azerbaijani literary language.

Scientific novelty of the research. In the dissertation, for the first time, the directions of development of the scientific style in the Azerbaijani literary language during the years of independence, language features, sources of enrichment of the terminological lexicon as units of the scientific language have been studied in a comprehensive theoretical manner based on scientific works. In the

dissertation, the characteristic features of the scientific style during the years of independence, grammatical and syntactic features have been studied on the basis of scientific works written in the Azerbaijani language within the framework of various scientific fields. At the same time, the scientific fields have been categorized thematically, the factors affecting the enrichment of the scientific style and the terms used in the scientific fields have been interpreted with rich facts. The study extensively studied the vocabulary and word formation process of works written in the scientific style. The preservation of the normativity of the Azerbaijani literary language at the grammatical level has been determined on the basis of facts from scientific works written during the years of independence. The stylistic differences affecting the development of the syntactic structure of scientific works written in the scientific style have been revealed, and the factors affecting the development of the Azerbaijani literary language have been analyzed with facts based on all linguistic levels.

Theoretical and practical significance of the research.

During the years of independence, the Azerbaijani literary language has developed in various directions. The study of their linguistic features gives a new direction to determining the theoretical and conceptual foundations of the scientific style, the development criteria within the framework of literary language norms. In this regard, works written in the scientific style provide rich facts for clarifying theoretical issues related to the development of terminological lexicon in the Azerbaijani literary language, the process of word formation, the sources of the formation of borrowed terms and the ways of their assimilation. These rich facts allow for determining the directions of development of the scientific style in the Azerbaijani language, the ways of enriching the vocabulary of the language from a theoretical point of view. In the research process, rich terminological units reflecting the development of the scientific language were interpreted and analyzed. These extensive data make it possible to determine the directions of development of the scientific style in the Azerbaijani language. From a practical perspective, the terms examined in the dissertation, as the principal

units of the scientific style, can be used in the compilation of bilingual and explanatory dictionaries related to various fields of science, as well as bilingual and multilingual terminological dictionaries, and in the preparation of textbooks.

Approbation and applying of the research. The main theoretical provisions and content of the research work have been reflected in articles published in scientific journals recommended by the Higher Attestation Commission, as well as in reports at international symposia and conferences.

Name of the organization where the dissertation work was carried out. The dissertation work was carried out at the Department of Terminology of the Institute of Linguistics named after Nasimi, Azerbaijan National Academy of Sciences.

Total volume of the structural sections of the dissertation separately and volume of the dissertation with characters. The dissertation consists of an introduction, three chapters, a conclusion, and a list of references. The introduction is 6 pages (12, 106 characters), Chapter I is 30 pages (57, 718 characters), Chapter II is 43 pages (85, 810 characters), Chapter III is 37 pages (76, 873 characters), a conclusion is 3 pages (4, 441 characters), and the list of references is 20 pages. In total, the dissertation consists of 144 pages, and 237, 048 characters.

THE MAIN CONTENT OF THE RESEARCH

Introduction of the dissertation states the relevance of the topic, the degree of usage, identifies the object and subject, the goals and objectives, the methods, the main provisions for the defense of the research, the scientific novelty, theoretical and practical significance, approbation and applying of the research, gives information on the name of the organization where the dissertation work is performed, the volume of the structural units of the dissertation separately and the total volume with characters.

The first chapter is called “**Development of the scientific style in the Azerbaijani literary language during the years of independence**”. In this chapter, the history of the study of the

scientific style, its characteristic features, and its directions of development are examined. The first paragraph of the first chapter is called “Study of the scientific style in the Azerbaijani literary language”. As mentioned, stylistics, which was formed as an independent field in linguistics in the first half of the 20th century, was studied within the framework of literary studies. The first research works on stylistics are associated with the names of I.B.Arnold, V.V.Vinogradov, I.A.Volina, B.N.Golovin and others⁴. The first fundamental research work in this field in Azerbaijan was written by A.Demirchizade, who interpreted the linguistic features that distinguish styles by means of language facts⁵.

The beginning of the 20th century is characterized as a period when scientific works, textbooks, and dictionaries were written in the Azerbaijani literary language. During this period, the writing of scientific works in the native language enabled the scientific style to enter a new stage of development. In this regard, the scientific style was widely characterized in the dissertation entitled “Scientific Style in the Azerbaijani Literary Language at the Beginning of the 20th Century” by Afina Alizade. In this dissertation, the development tendencies of the scientific style, as well as its lexical, grammatical, and syntactic features in the early 20th century, were analyzed. It is clear from the analyses that the scientific style of the period is syncretic in nature and forms a dialectical unity of the vernacular with the terminological lexicon, morphological and syntactic means of textbooks, scientific works and dictionaries dealing with different sciences.

In Afaq Aghayeva’s research, the mutual influence of different styles, their development process, and their interdependent development have been analyzed. The problems addressed

⁴ Арнольд И.В. Стилистика современного английского языка / И.В. Арнольд – Москва: – Просвещение. – 1981. – с.295; Виноградов В.В. Проблемы русской стилистики / В.В. Виноградов – Москва: – Высшая школа. –1981. – с.319; Волина И.А. О специфике научного стиля / И.А. Волина. –Москва: – Наука. –1977. – с.26-34.

⁵ Dəmirçizadə Ə. Azərbaycan dilinin üslubiyyəti/Ə.Dəmirçizadə. –Bakı: – Azərtədrisnəşr. –1962. – 211 s.

in Shabnam Hasanli - Garibova's doctoral dissertation entitled "Scientific Style in Turkic Languages in the 13th-16th Centuries"⁶ are distinguished by their relevance. In the study, the development directions, sources of formation, and methods of the scientific style in Turkic languages have been systematically investigated.

The second paragraph of the first chapter of the dissertation is entitled "**Specific features of the scientific style in the modern Azerbaijani literary language**". It is determined that the scientific style differs from other styles due to a number of characteristic features. These differences are analyzed from various perspectives, and their main features are grouped as follows:

1. Scientific ideas are expressed in works written in the scientific style.

2. Scientific works written about the diversity of scientific fields and their development are the main factor in the development of the scientific style.

3. The main units of the scientific language are terms.

4. Extralinguistic factors play a major role in the development of the scientific style.

5. The use of international and borrowed terms prevails in the scientific style.

6. Logicity, clarity, precision, and completeness are the main features of the scientific style.

Logicity, objectivity, and unambiguous expression of a precisely defined concept in terms are the main features. The unambiguousness of term-concept correspondence, accuracy, and fluency are indicators of stylistic features. The main function of the scientific style is to explain ideas in a broad sense logically. Explanation incorporates the stages of scientific thinking, the process of cognition, and logical comprehension. In the scientific style, various constructions are distinguished by their functionality, and

⁶ Həsənli-Qəribova Ş. Orta əsrlər türkdilli elmi üslubun leksik-qrammatik xüsusiyyətləri /Ş. Həsənli-Qəribova. –Bakı: – "Savad". – 2022. – 264 s.

various directions of the scientific style enrich the scientific language and reveal the rich potential of the literary language.

The third paragraph of the first chapter is entitled **“Development of scientific fields and their thematic classification during the years of independence”**. The development of sciences in different directions leads to the emergence of new concepts, which enriches the vocabulary of individual fields, the terminology of scientific language, and overall the scientific style. The scientific style encompasses various fields of science. The separation of sciences in different historical periods and the formation of independent disciplines have also influenced the development of the scientific style. The differentiation of sciences leads to the emergence of new fields. The modern level of development of sciences, the emergence of new directions create micro-fields of the scientific style. The application of these fields affects the dynamics of scientific research, and the system is divided into new branches. For example, applying of mathematical and physical laws in the study of chemical processes leads to the emergence of new fields. Physical chemistry, mathematical chemistry and quantum chemistry were formed through the interaction of these sciences. Over time, as technology advanced, dozens of independent scientific fields have emerged in the field of mechanics, such as applied mathematics, mechanical mathematics, probability theory, automatic devices, device theory, device dynamics, theories of elasticity and plasticity, gas dynamics, etc. In connection with the development of sciences during the years of independence, the expansion of their fields of activity, the widespread use of computer technology and the internet created the basis for the development of the scientific style in various directions. The directions of development of the scientific style are directly related to the rapid progress of science and technology, informatics, computer technologies, and scientific language units also enrich the literary language.

The fourth paragraph of the first chapter is entitled **“Substyles of the scientific style in the modern Azerbaijani literary language”**. The development of the scientific style in various directions leads to the formation of substyles within it. These

substyles differ both in terms of subject area and linguistic units. Functional styles have specific stylistic markers. These markers determine the process of studying the respective style and are characterized by special features. In scientific texts, abstract generalization is reflected through the use of certain grammatical means, forms, and sentence types. These stylistic dominants have become typical, regularly recurring, and therefore standardized characteristics. As noted, *“objectivity and non-ambiguity, generalization, logicity, argumentation, precision and clarity, as well as communicative orientation toward the addressee or dialogicity of exposition are considered stylistic dominants”*⁷. The mentioned stylistic features arise as a result of the influence of style-forming extralinguistic factors, and do not determine linguistic means, structures, or intratextual units, but rather a specific systematicity in the use of data.

Within the framework of scientific discourse, variative repetitions perform the following important text-forming functions: 1) generalization of the content of the main utterance; 2) specification; 3) explanation; 4) clarification; 5) highlighting the main components of knowledge; 6) reference to previous ideas, or a retrospective function; 7) directing the reader's attention to the upcoming idea, or a prospective function. These features are characteristic of the scientific style, which realizes theoretical thinking in the form of logical conceptualization.

The second chapter is called **“Lexical features of the scientific style in the Azerbaijani literary language during the years of independence”**. The first paragraph of this chapter characterizes the process of scientific style and term formation in the Azerbaijani literary language. It is noted that the lexicon of scientific works includes common words and terms. However, the vocabulary of scientific works is characterized by its greater terminological content. Special-function words-terms act as the main lexical means for providing scientific information in scientific texts. Cognitive

⁷ Колшанский Г.В. Контекстная семантика. / Г.В. Колшанский.—Москва: — Наука. —1980. — с.154

information in scientific texts covers various areas. From this point of view, in the process of text analysis, the scientific style also faces the issue of taking into account extralinguistic components. That is, *“stylistic studies go beyond the boundaries of the text and involve the author of the text in their research circle. Such an approach expands the scale of the research”*⁸.

Consistency is a characteristic feature of the scientific style. The construction of sentences in the text is the presentation of the content expressed within the context in accordance with the situation. In this style, the linear development of the thought is dominant, and the content is expressed in terms appropriate to the fields of science. Therefore, the content of the text fragment depends on the given sentences and their construction. The process of developing terms for the expression of ideas in scientific texts and their defining process reflects term formation. In term formation related to various fields of science, semantic, morphological, syntactic, calque and abbreviation methods are widely used.

The second paragraph of the second chapter is called **“The process of term formation through semantic methods in scientific style”**. As scientific fields develop, the system of concepts is enriched and there is a need for their nomination. In modern times, the termization of pre-existing words in the Azerbaijani language by gaining new meanings in various fields of science and technology is observed more extensively. Therefore, in all fields of science, the fact that a single term may express different concepts substantiates the relevance of semantic word formation. In this process, a term, while preserving its original meaning, acquires an additional new meaning and thereby names a concept. S.Sadigova writes: *“In order to express the concept created in the process of term formation by semantic method, scientific and technical concepts are created by giving new meanings to lexical units with different contents that*

⁸ Кожина М.Н., Дускаева Л.Р. Стилистика русского Флинта / М.Н. Кожина. Л.Р. Дускаева. –Москва: – Наука. –2008. – 464 с.

*already exist in the language, not by creating new terms based on the word-formation methods of the language”*⁹.

The formation of new terms while preserving the form of a word is a means of expressing concepts in language. For example, the word “medium”, originating from Latin, has acquired different meanings in Azerbaijani in both diplomacy and journalism. In journalism, it refers to mass communication means such as newspapers, television, etc. In diplomacy, it denotes both a person who sensitively interprets and presents events occurring in the surrounding environment and performs an important mediating role in their description and interpretation, and a mediator who establishes connections and communication among people in society and possesses exceptional abilities. Or, the term “diyircək” has been used in different fields to name new concepts: 1. A small wheeled baby walker used to help infants learn to walk; 2. A small metal wheel (e.g., under furniture legs, beds, etc.); 3. In sports, a wheeled skate used in certain games; 4. In technology, a block resembling a drum or wheel, placed inside various machines and mechanisms¹⁰.

Terms created through the semantic method attract more attention with the terminology of national language units.

The third paragraph of the second chapter is entitled “**Term formation through morphological methods in scientific style.**” In scientific fields, morphological methods are distinguished by their productivity in the formation of terms. In scientific texts, the following derivational suffixes are particularly productive in the formation of new terms through morphological methods: -çı, -çi, -çu, -çü: kompüterçi, tərtibatçı, proqramçı, qaymaçı, əməliyyatçı, sifarişçi, tələbatçı, etc.; -lı, -li, -lu, -lü: uzunmüddətli, təyinatlı, təkrarlı, sığortalı, etc.; -ma, -mə: hidratlaşma, filizçökmə, bərezitləşmə, miqmatışləmə, komplektləşdirmə, boşdayanma, yükləmə, etc.; -cıq, -ciq, -cuq, -cüq: düyüncük, başcıq, etc.; -lıq, -luq,

⁹ S.Sadıqova. Azərbaycan dilinin terminologiyası. / S. Sadıqova. – Bakı: – Elm. – 2011. – s.120.

¹⁰ Azərbaycan dilinin izahlı lüğəti II cild. – Bakı: – Ensiklopediya nəş. – 1976. – 591 s.

-liq, -lüt: yararlılıq, uzunluq, kommunikatıvlik, diskursıvlik, tekstuallıq, intertekstuallıq, ömürlük, öhdəlik, etc.; -ıcı, -ici, -ucu, -ücü: vurucu, verici, partlayıcı, təhsilverici, etc.; -ış, -ış, -uş, -üş: ödəniş, baxış, davranış, qarışiq, yürüş, etc.

Similarly, the suffixes -ıq, -ik, -uq, -ük; -maq, -mək; -qaç, -ğac, -kəc, -gəc; -qan, -kən, -ğan, -gən; -sız, -siz, -suz, -süz; -ım, -im, -um, -üm; -ca, -cə; -ça, -çə are also distinguished by high productivity in term formation across various fields of science.

The fourth paragraph of the second chapter is called **“Term creation through syntactic methods in scientific style”**. In this section, the main features of syntactic constructions are determined by approaching the structure and organization of the text from a traditional position. If in a literary text the author can interpret the relationship between two characters in different ways according to his purpose and circumstances, in a scientific text the author determines the relationship between concepts with facts and evidence. In different fields of science, this connection, evidence, proof and verifications are carried out in different ways. Therefore, the syntactic method is widely used in term formation in scientific texts. S.Sadıqova writes: *“In term formation, the combination of two or more words to express a scientific concept in the form of compound words and word combinations plays an important role in the enrichment of terminology. Analysis of the terminological system shows that the syntactic method is of particular importance in the formation of terms related to various fields of science and technology”*¹¹. In the scientific style, this method more often carries out the process of organizing a scientific text. For example, *“It can be seen from the complex drawing that the horizontal trace of the frontal plane a given by traces is parallel to the X axis. The frontal projection of the triangle located parallel to the projection plane F is*

¹¹ Sadıqova S.A. Azərbaycan dilinin terminologiyası. / S.A. Sadıqova. –Bakı: – Elm. –2011. – 380 s.

itself a triangle in size. The horizontal projection of this triangle is a straight line segment parallel to the projection axis X"¹².

In scientific style, terms formed through syntactic methods attract attention according to their structure, including compound terms pronounced with a single stress, paired combinations of two words used together, and models in the form of word combinations. Compound-model terms whose components are simple words are formed on the basis of the models "simple word + simple word" or "root + root."

The fifth paragraph of the second chapter is called **"Abbreviations in the scientific style in the years of independence"**. In connection with scientific and technical progress, the expansion of the means of transmitting information in writing, the regulation of the correspondence between coding and text are the main forms of expression of scientific thought. According to researches terms formed through abbreviations do not enrich the vocabulary, but simply lead to the correction of an abbreviated version of the initial language unit. Along with putting forward this idea, does not exclude the possibility of the abbreviation passing into the general lexical layer, and also comes to the conclusion that it may become an independent word in the course of the historical development of the language. *"They consider the word-formation method and the phenomenon of recording speech in an abbreviated form, which resulted in the creation of various types of abbreviations"*¹³.

In the modern period, abbreviations are used in various functional styles. The main purpose of abbreviation is to shorten multi-component expressions. During term shortening, the main motivation for abbreviation is its frequency of use. For example, in physics a general system of abbreviated measurement units has been adopted: Ampere – A, Henry – Hn, Volt – V, Watt – W, etc.

¹² Həbibov İ.Ə., Məlikov R.X. Mühəndis qrafikası. / İ.Ə. Həbibov. R.X. Məlikov – Bakı: – ADNA, – 2011, –165 s.

¹³ Ахманова О.С. Словарь лингвистических терминов. – Москва: – Советская Энциклопедия. – 1966.

Based on the commonality of object-concept features, abbreviations are divided into different thematic groups. In scientific style, abbreviations also perform a substitutive function. The same feature is characteristic of international and internationally accepted terms within a field.

The sixth paragraph of the second chapter is entitled **“Borrowings in scientific style during the years of independence”**. As noted, in scientific works field-specific concepts form a certain system, and the elements of this system are interconnected. A field is a special area where a term exists. Within this area, the term acquires the main features that characterize it. The area is determined in a logical sequence and is protected from external influences. Since the concept requires a definition, a text expressing it is formed. This text is the definition of the concept. An important functional unit of the scientific style is the term. V.P.Danilenko has examined various definitions given to the term, identified their main features, and associated this with the fact that the term is a multifaceted linguistic phenomenon¹⁴.

Borrowings entering a language reflect the level of development of scientific fields. Thus, the qualitative advancement of scientific knowledge to a new theoretical level leads to stabilization within systems of concepts and to the establishment or acceptance of corresponding terms. *“The linguistic substrate and logical substrate provide information about the form and content of the unit. However, this information does not provide information about whether the mentioned unit is a term or not. The solution to this issue is solved according to the terminological essence. The terminological essence clarifies whether a particular field is included in the system of concepts or not based on the meaning of the unit itself”*¹⁵. Because it is confirmed that these units carry terminological meaning and are created for nominative purposes. However, it is

¹⁴ Даниленко, В.П. Русская терминология: Опыт лингвистического описания / В.П. Даниленко. – Москва: Наука, – 1977. – с 3.

¹⁵ Лейчик, В.М. Оптимальная длина и оптимальная структура термина // Вопросы языкознания, – 1981. № 2, – с. 7.

known that although all nominative units of a language perform the function of words, they are not included in the lexical system as separate units. As can be seen, during the years of independence, the rapid development of various fields of science has created the need for new concepts and the borrowing of terms. Currently, borrowed terms enter the Azerbaijani language directly from European languages¹⁶.

The third chapter is called **“Grammatical features of the scientific style during the years of independence”**. The first paragraph of this chapter examines **“Regularities of development of the scientific style in the Azerbaijani literary language during the years of independence”**. Functional styles have specific style markers. These markers are determined in the process of studying the relevant style. The functional style is characterized by general and specific features. General features are typical for all substyles of the relevant style. The study shows that there are three main substyles of the scientific style: 1) academic; 2) popular; 3) educational. The academic scientific style is the study of the features of texts written for purely scientific purposes. The substyles of the scientific style are distinguished by their differences in different fields. There are substyle genres such as technical, socio-political, economic, linguistic, literary studies, natural sciences, medicine, etc. Each of these genres has its own lexical units. At the same time, scientific texts are distinguished by their unique structural elements, and these structural parts allow the scientific text to be divided into interconnected parts. In the introduction or preamble, first of all, information is given about the issue to be examined or investigated. This information is completed by indicating the relevance of the topic, and its main features are also characterized. Scientific thinking serves to comprehend objective reality through logical categories and to reveal the essence of events and processes in this way. Identifying relevant issues, formulating hypotheses and assumptions for their solution, and reaching conclusions and results are the foundations of

¹⁶ Məmmədli, N.B. Azərbaycan dilində alınma terminlər / N.B. Məmmədli. – Bakı: Elm və təhsil, – 2017. – 488 s.

scientific creativity and are based on logical categories. They derive from these categories. Scientific problems are presented in a concise, clear, and precise manner, and find their solution and conclusions supported by evidence, proofs, and facts. As M.Kojina writes: *“The features of scientific text such as logicity, objectivity, generalization, consistency, precision, and clarity are conditioned by extralinguistic factors in scientific creativity and play the role of stylistic features of the scientific style”*¹⁷.

A strict sequence and the interconnectedness of individual sentences and all parts of the text are characteristic features of scientific writing. In scientific texts, terms in separate sentences complement one another like links in a chain.

In functional stylistics, the concept of text is taken as a linguistic phenomenon, or rather, as a level of the language system. The text is a coherent whole related to extralinguistic - pragmatic, sociocultural, psychological and other factors. Text-forming factors are taken as the basis in the formation of this whole. Intratextual relations are created through structural-grammatical indicators. It should also be noted that in the formation of a scientific text, the language units that form the basis of the text are connected with each other in the form of both syntactic and logical-syntactic relations. The scientific style, unlike other styles, is determined by the characteristics inherent in the language of scientific works, textbooks, monographs. Logicity, consistency, the use of terminology, didactic purpose, proof of validity through facts, systematic organization of concepts, as well as the use of symbols, graphs, tables, and formulas are characteristic features of the scientific style.

All of this shows that scientific texts are distinguished by their unique structural elements, and these structural parts allow dividing the scientific text into interconnected parts. In the contrastive relationship, scientific ideas that deny each other are expressed with negation conjunctions that convey opposite information in order to

¹⁷ Кожина М.Н. О речевой системности научного стиля сравнительно с некоторыми другим / М.Н. Кожина. – Пермь,: Наука, – 1972. – с.131.

strengthen the connection between the components. In the scientific style, the introduction or preamble, first of all, provides information about the issue to be considered or studied. Consistency, terminologization and logical evaluation should also be taken into account among the stylistic features of the functional scientific style.

The second paragraph of the third chapter is called **“Morphological features of the scientific style”**. The specific features of the scientific style also affect the grammatical features of the scientific style. According to the analysis conducted in the scientific style, the processing of grammatical categories differs from each other in essence. This is because the main language units of the scientific style are terms. Most of the terms are nouns, and in the expression of scientific ideas, nouns are superior to all parts of speech in terms of the percentage of usage. Adjectives are used to determine various features in various fields of science. In this regard, the activity of the third personal pronoun is observed in the language of scientific works. For example, “According to Newton’s laws when a force does not act on an object, its momentum does not change, but only under the influence of a force can the momentum of the object change. Or, if the force changes depending on time, then the change in the projection of the momentum x at time t is numerically equal to the area of the figure formed by the graph of the dependence of F on t with the t axis”¹⁸. In the text, the third person pronoun becomes a substitute when replacing other parts of speech in order to accurately express the idea in the sentence, that is, it acquires a general indicative function. The fact that the general indicative function is reflected in the third personal pronoun is due to the fact that these pronouns are less personal and subjective compared to the first and third person pronouns. This is because those demonstrative pronouns are also widely used in the scientific style. If personal pronouns replace main parts of speech and perform various functions in their place, demonstrative pronouns can perform a defining function without replacing a part of speech. In scientific style, categories of

¹⁸ Fizika. –Bakı: – “Abituriyent”. – 2010. – 546 s.

affirmation and negation are also expressed through specific signs. The affirmative form of a statement, as well as the negation of events, is manifested through certain linguistic means. Depending on the nature of the scientific style, the most common type of verb in the language of scientific works is the passive form. In the ideas given in known verbs, in some cases the subject participates independently, and in some cases the verb is known without the subject participating in the sentence as an independent word. That is, the performed action is understood without any special formal sign. It is known that in passive verbs, the subject is replaced by the object (the entity affected by the action). M.Hüseynzade writes: *“The root of passive verbs is a transitive verb. After taking the appropriate suffix, all such verbs become intransitive; because the object itself is not inactive, it takes the position of the active sentence element and cannot answer the questions of the object. Therefore, in passive verbal sentences, the entity acting as the subject participates together with the verb”*¹⁹. Thus, in passive verbs, the meaning of passivity is not directly expressed, it is created by special suffixes, and its existence is revealed through the object.

In the language of scientific works, passive verbs are formed by means of the suffixes -ıl, -il, -ul, -ül; -l; -ın, -in, -un, -ün, -n. The frequency of passive verbs in scientific texts is high, and this is related to the fact that, when describing a certain event or process, the main focus for precise expression of thought is not on the agent, but on the event or process itself.

In scientific works, the acquisition of theoretical ideas is conditioned by certain requirements. The conditional mood of the verb is formed by special suffixes. While the suffixes of the imperative, optative, and obligative forms are added only to the verb root, the conditional suffix -sa, -sə can be attached not only to the verb root but also after other suffixes. For example, *“ $L(y)=0$ tənliyinin, uyğun xarakterik tənliyin bütün kökləri sıfırdan fərqli olarsa, onda baxılan tənliyin xüsusi ($a=0$) həlli s dərəcəli*

¹⁹ Hüseynzadə M. Müasir Azərbaycan dili (Morfologiya). / M. Hüseynzadə. –Bakı: – Maarif. –1983. – 356 s.

çoxhədlidir”²⁰. (If all the roots of the corresponding characteristic equation of the equation $L(y)=0$ are non-zero, then the particular ($a=0$) solution of the considered equation is a polynomial of degree s). In the formulation of theorems, reasoning is mostly given and defined within certain conditions. It should also be noted that in scientific works the simple conditional form is widely used.

In the language of scientific works, the following specific features related to verb moods, which are not reflected or are rarely observed in other styles of the literary language, can be noted.

1) In scientific style, the conditional mood of the verb links the realization of an action to certain conditions that clarify its content.

2) In some cases, the formal markers of the optative mood -a, -ə, -ya, -yə acquire a meaning of necessity, and the element of wish is not expressed.

3) The suffixes -malı, -məli, which are the formal markers of the obligative mood, are added to verb roots and create the notion of necessity in the logical explanation of ideas.

In the scientific style, the reported past tense is used more often than the directed past tense. The main feature of the reported past tense is that it is not used to report the time when the work was done, but to express the result of the work without witnessing or observing it. In scientific language, information about certain research is also given in the reported past tense. It is clear from the analysis that the presentation of scientific ideas in scientific works attracts attention due to the fact that they are presented at all levels of the language in the text. Because accuracy is a characteristic feature of the scientific style.

The third paragraph of the third chapter is called **“Syntactic features of the scientific style in the years of independence”**. Scientific style differs from other styles in terms of its syntactic features. In scientific texts, for the purpose of precise expression of ideas, term combinations and various sentence types are used. In works written in scientific style, syntactic constructions attract

²⁰ Əzimov. M.Ə. Səlimov. H.F. Diferensial tənliklər. / M.Ə. Əzimov. H.F. Səlimov. –Bakı: – Maarif. –1991. – 676 s

attention with their characteristic features in the expression of scientific thought. In addition, syntactic relations such as agreement, government, and adjacency play an important role in the formation of words, word combinations that structure the text, as well as its individual smaller parts. A significant part of the combinations used in scientific style consists of structures in which the first component is without a suffix and the second component takes a possessive suffix. These combinations are lexical units that express specific concepts.

For scientific style, the use of incomplete sentences and one-word sentences is not characteristic. In the process of mathematization in natural and technical sciences, formulas, symbols, and signs are widely used in accordance with the form of thinking. In various fields of science, in addition to sentences, equations in mathematics, physics, chemistry, and other disciplines, as well as reactions and formulas used to prove theorems, play an important role in fully expressing completed ideas. In fields such as philosophy, literature, linguistics, history, etc., sentence types are also used differently depending on purpose and intonation.

Due to the specific characteristics of different scientific fields, interrogative sentences are used more frequently than declarative ones. Exclamatory and imperative sentences are not used. The form of address is not characteristic of scientific style. In scientific style, each type of sentence has its own function and place of use. Therefore, in scientific works, ideas are mainly expressed in a declarative way, not directly by the author, but through the third person. In such sentences, the action or event is attributed to unspecified persons. Although there is a notion of person (since more than one individual may participate in the action), the sentences do not have a grammatical subject. Alongside this, generalized-personal sentences are also formed on the basis of the predicate, like indefinite-personal sentences. In such sentences, the action is attributed to the second person singular or the third person plural, but these persons do not function as the grammatical subject of the sentence. In scientific texts, the predicate of generalized-personal sentences is mainly expressed by the second person singular or the

third person plural form of the verb. Another widely used type of sentence in scientific style is impersonal sentences. It should also be noted that in scientific texts, complex sentences are used more frequently than compound sentences. Observations of the language of scientific works show that conditional, object, adjective, cause-and-result subordinate clauses dominate among complex sentence types.

Thus, the analysis of the syntactic level of the language of scientific works shows that in scientific style, simple extended sentences and complex sentences are widely used in order to understand perceived phenomena, define their characteristics, and ensure their comprehension in thought. In exact sciences, conditional subordinate clauses and cause-and-result clauses contribute to the clarification and precise interpretation of ideas.

The results of the research conducted in the concluding part of the dissertation are summarized as follows:

1. In the development of the Azerbaijani literary language, styles develop in interaction, and changes in stylistic differentiation expand the social function of the literary language. In the scientific style, the interrelations between different fields of science stabilize the norms of the literary language and promote the functioning of scientific language within lexical and grammatical categories.

2. The main features of the scientific style can be grouped as follows: Scientific thoughts are expressed in works written in the scientific style; Scientific works written about the diversity of scientific fields and their development are the main factor in the development of the scientific style; The main units of the scientific language are terms; Extralinguistic factors are the main ones in the development of the scientific style; The use of international and borrowed terms predominates in the scientific style; Logicality, clarity, accuracy, and completeness are the main ones in the scientific style.

3. The fields of science that developed the scientific style during the years of independence can be divided into various groups: technical sciences (cybernetics, informatics), exact sciences (physics, mathematics), natural sciences (biology, geography), humanities (literature, linguistics), socio-political sciences (history, philosophy,

diplomacy, etc.). Each of these groups, which include all fields of science, differs in its developmental characteristics.

4. In the years of independence, the scientific style is syncretic in nature. The terminological lexicon, morphological and syntactic features of textbooks, scientific works, and dictionaries related to scientific fields, the sequence of scientific judgments expressed in the scientific style, form the scientific style. In scientific texts, the terms used for the precise expression of ideas are used in accordance with the semantic structure of the field they belong to and act as a link in the expression of concepts.

5. Lexical-semantic, morphological, syntactic, calque and abbreviation methods are used in the formation of terms related to various fields of science. The formation of new concepts in the scientific style through these methods is one of the main directions enriching the Azerbaijani language.

6. In the formation of a text in the scientific style in the Azerbaijani language, sentences act as a whole semantic unit, bringing precision to the expression of scientific thought and complementing each other from a logical point of view.

7. Abbreviations, which are one of the main units of the terminological lexicon in the scientific style, differ in the degree of development. Abbreviations used in various fields of science act as the main language unit in the transmission of scientific information, based on the regularities of the principle of deduction. Coding and symbols are widely used in the exact sciences and act as the main form of expression of logical thought.

8. In the text, the third personal pronoun becomes a substitute when replacing other parts of speech in order to express the thought precisely in the sentence, that is, it acquires a general denotative function. This is why denotative pronouns are also widely used in the scientific style. If personal pronouns replace the main parts of speech and carry out various functions in their place, denotative pronouns can carry out the function of determination without replacing the part of speech. Therefore, demonstrative pronouns, functioning both as pronouns and as elements that specify and determine nouns,

contribute to the clarification and precision of ideas in scientific style.

9. In scientific style, cases and given ideas are generally presented in the present tense, while in various fields of science they may also be expressed in the reported past tense. The directed past tense is not used, because expressing logical ideas through direct witnessing is not logically appropriate. In works related to mathematics, chemistry, physics, and other sciences, the conditional mood is widely used. While the suffixes of the necessitative, optative, and obligative moods are attached only to the verb root, the conditional suffix -sa, -sə can be added not only to the verb root but also after other suffixes.

10. In the scientific style, complete and precise expression of thought is used more often than simple broad sentences. The use of incomplete sentences and word-sentence types is not characteristic of the scientific style. In the natural and technical sciences, the use of formulas, symbols, and signs in the expression of the form of thinking is one of the characteristic features. Because in various fields of science, in addition to sentences, equations in mathematics, physics, chemistry, and other sciences, reactions and formulas given for proving theorems also play an important role in order to fully express the idea.

11. In the scientific style, the necessary connections between the cognitive forms of thought and their content are established through subordinate clauses. In particular, the characteristic features of events presented in complex sentences with subject, object, cause, and effect subordinate clauses are explained by means of these subordinate components.

12. The types of complex subordinate sentences, which occupy a significant place in the language of scientific works and whose structural types are intensively repeated, represent the use of various syntactic structures that ensure the consistent expression of scientific thought. Scientific texts are presented through a strict sequence of individual parts of ideas and are characterized by a close connection between them. In texts that are more typical of the scientific style,

sentence structures are expressed in accordance with the norms of the national literary language.

The main provisions of the research are reflected in the following published articles and theses of the author.

1. Elmi üslub, altüslub və üslub janrları məsələsi // “Müstəqillik illərində üslubların inkişafı və dilin lüğət tərkibinin zənginləşmə istiqamətləri” respublika elmi konfransı, – Bakı: – 25-26 dekabr, – 2018, – s.242-244.
2. Elmi üslubun əsas xüsusiyyətləri // Bakı: Terminologiya məsələləri, – 2019. №2, – s.191-199.
3. Müstəqillik illərində elmi üslub və termin yaradıcılığı prosesi. // – Bakı: Dilçilik Araşdırmaları, –2020. №2, – s.88-93.
4. Elmi üslubda sintaktik üsulla termin yaradıcılığı // “Kashgarlı Mahmut” International Science, Culture and Education Congress (Dîvânu Lugâti't-Türk - 950), – Baku: march 25-27, – 2022, – s.306-310.
5. Müstəqillik illərində elmi üslubda abreviaturlar // Bakı: Dilçilik araşdırmaları, – 2022. №2, – s.108-114.
6. Terminization of Common Words in Scientific Style in the Azerbaijani Language // – Казахстан: Endless Light, – 2022. – p.273-277.
7. Elmi üslubda semantik üsulla termin yaradıcılığı prosesi // – Bakı: Terminologiya məsələləri, – 2022. №2, – s.84-89.
8. Ways of formation of terms in the scientific style in the Azerbaijan language // – Italy: Annali-d'Italia Scientific Journal, – 2023. №40. – p.35-38.
9. Scientific style in the development of literary language // “Global issues of development of philosophy in education” international scientific-practical conference, – Uzbekistan: – 12 June, – 2023. – p.146-150.
10. Müasir Azərbaycan ədəbi dilində elmi üslubun istiqamətləri // “Heydər Əliyevin dil siyasəti və ana dilinin müasir problemləri” mövzusunda Respublika elmi konfransı, – Bakı:

- 12 iyul 2023, – Bakı: – s.343-346.
11. Müstəqillik illərində elmi üslubda alınmalar // – Bakı: Terminologiya məsələləri, – 2023. №2, – s.105-110.
 12. Морфологические особенности научного стиля (на материале азербайджанского языка) // – Москва: Наука. Образование. Современность, – 2024. №3, – s. 2-8.
 13. Экстралингвистические факторы в формировании научного стиля в Азербайджане в годы независимости // «Актуальные проблемы лингвистики и межкультурной коммуникации», – Москва: – 2026. с.17.
 14. □ Regularities in the development of the scientific style in the Azerbaijani literary language during the years of independence // – Украина: Закарпатські філологічні студії, – 2026. № 45, Т.2 – p.130-138



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