

**Ministry of Education and Science of Ukraine**  
**Taras Shevchenko National University of Kyiv**  
**Educational and Scientific Institute of Philology**  
**Department of English Philology and Intercultural Communication**

**Bachelor's paper**

**GENETICS TERMINOLOGY**

**Nurtach Hayytalyyeva**

4th year student of the Education Program

‘English Studies and Translation  
and Two Western European Languages’

Field of science: 03 “Humanities”

Specialty: 035 “Philology”

Supervised by:

**PhD., Vira Orlova**

Допущено до захисту»

Протокол засідання кафедри англійської філології

та міжкультурної комунікації

Протокол № 10 від 29.05.2023

Зав. кафедри \_\_\_\_\_ д. філол. н., проф. Алла БЄЛОВА

KYIV – 2023

## ABSTRACT

The study of linguistic terminology in modern linguistics is an important field of research. The use of specific terms in this field helps track and illustrate the changes in the terminology system over time. This system has been shaped by the unique characteristics of the scientific industry, including its subject, objectives, and components.

Despite the influence of various linguistic traditions throughout history, especially from Europe and America, there are not many comprehensive works summarizing the research on linguistic terminology, its formation, and development. The development of the conceptual framework in linguistics has been overlooked and requires scientific exploration.

The aim of our research is to describe the main trends in the formation and development of linguistic terminology. To achieve this, we tackle several tasks: identifying the key aspects of studying linguistic terminology as part of scientific language, understanding the changes in terminology throughout different stages of scientific progress, examining the ways in which linguistic terminology is formed, identifying the main groups of linguistic terms, and analyzing modern linguistic terminology.

We employed various research methods to accomplish our goals. The descriptive method allowed us to study the modern linguistic terminological system, considering both newly coined terms and those that have been in use for a long time. Additionally, we used the comparative method to compare linguistic traditions and theories. The description method and continuous sampling method were also utilized.

The novelty of our research lies in our comprehensive study of linguistic terminology, focusing on its terminological tradition. We have identified major trends in the development of the terminological system in linguistics, considering its formation and evolution and examining its core components.

Our research holds practical significance for the study of literary language history, further investigations into terminology, and specialized courses on the development of literary language subsystems. The findings of our study can be applied in these areas.

The structure of our work is determined by the purpose and objectives of our study, ensuring a coherent exploration of the formation and development of linguistic terminology.

## CONTENTS

<b>INTRODUCTION.....</b>	<b>5</b>
<b>I TERMINOLOGY AS A PART OF LINGUISTICS.....</b>	<b>7</b>
1.1. The concept of «term». Definition of the term and its semantic scope.....	7
1.2. Word formation is the process of creating new words.....	8
1.3. Abbreviation as a type of word formation .....	11
1.4. Onomasiological terms of genetics terminology .....	12
1.5. Term combinations in genetics terminology .....	13
1.6. Characteristics of the genetics.....	15
Conclusion to Part I.....	17
<b>II FEATURES OF GENETICS TERMINOLOGY .....</b>	<b>19</b>
2.1. Informative role of genetics terminology elements .....	19
2.2. Word- formation of genetics terms.....	20
2.2.1. Affixation .....	22
2.2.2. Conversion .....	25
2.2.3. Compounding.....	28
2.2.4. Abbreviation .....	31
2.3. Borrowings in genetics terminology .....	32
Conclusion to Part II.....	35
<b>CONCLUSIONS.....</b>	<b>38</b>
<b>REFERENCES.....</b>	<b>40</b>

## INTRODUCTION

The study of the development of a complex system of linguistic terminology in modern linguistics is an urgent direction. The conscious understanding of the peculiarities of language as a system, as well as the involvement of language in the cultural paradigm has always attracted the attention of scientists.

The introduction of a significant number of linguistic terms into scientific circulation is explained by the expediency of tracing and demonstrating the dynamics of the development of the term system. It has been developed and formed for a long time and was determined by the specifics of the scientific industry and its complex interrelated components, its subject, object, and goals.

There are not many works that would summarize the research of linguistics terminology, its formation and development, as well as the features of its formation. Linguistics, as it is known, has been enriched by various linguistic traditions throughout its history, but European and American played the main roles in it. In the process of cognition of linguistic phenomena, the main body of terms reflecting concepts and ideas about a new branch of knowledge was formed. However, the question of the development of the conceptual apparatus of linguistics has not been the object of special research and needs scientific description and understanding. All of the above determines the relevance of the stated topic.

The **purpose** of our research is to describe the main trends in the formation and development of linguistics terminology. To achieve this goal, the following **tasks** are solved:

1. Identification of the main aspects of the study of linguistics terminology as a subsystem of the scientific language.
2. Establishment of trends in the development of linguistics terminology at different stages of the development of science.
3. Study of ways of forming a linguistics terminosystem.
4. Identification of the main groups of linguistic terms.

The **subject** of the study is the analysis of the formation of terminology.

The **object** of our research is modern linguistics terminology.

**Research methods.** During our research, we resorted to various research methods to meet our tasks: the descriptive method was necessary for us when studying the research of the modern linguistics terminosystem. It makes it possible to consider, along with neologisms, terms that entered the language in different epochs. On the other hand, our tasks cannot be realized without comparing various linguistic traditions, analyzing various theories, therefore, a comparative method is involved. In addition, the description method and the continuous sampling method were used.

**Scientific novelty of the work.** The scientific novelty of our research consists in the fact that an attempt has been made to conduct a comprehensive study of linguistics terminology from the standpoint of the formation of its terminological tradition.

**Theoretical significance of the study.** In the course of our work, we have established the main trends in the development of the terminological system of linguistics during the periods of its formation, and development in the aspect of the evolution of its nuclear components.

**Practical significance of the paper.** The results of the research can be used in the study of the history of the literary language, in further studies of the issues of terminology, as well as in special courses on the peculiarities of the development of subsystems of the literary language.

The structure of the work is determined by the purpose and objectives of the study.

## I TERMINOLOGY AS A PART OF LINGUISTICS

### 1.1. The concept of «term». Definition of the term and its semantic scope

The concept of a "term" holds immense significance, especially within the study of terminology. In this context, a term refers to a specific word or phrase that carries a distinct meaning within a specialized domain. Unlike everyday language usage, a term is known for its precision and adherence to standardized conventions.

When linguists engage in conversations about a "term" within the field of linguistics, they are essentially talking about a specific linguistic component that possesses a well-established and exact meaning within a particular domain or subject of study. This term serves as a fundamental building block in the analysis and exploration of language, enabling scholars to examine and comprehend various aspects of language with clarity and specificity. This term serves as a unit of language analysis and understanding, allowing researchers to communicate and study language phenomena in a structured and meaningful way. Its primary purpose is to facilitate communication among professionals and experts in that particular field. Linguists rely on carefully selected terms like shareable knowledge within their respective communities.

The semantic scope of a term plays a crucial role in understanding its boundaries and limitations. It outlines the range or extent of the meaning associated with the designated domain. This ensures consistency and precision in its usage, promoting clarity and comprehension among linguists. Defining the concepts, ideas, or objects of semantic scope aids in effective communication within linguistics.

It's crucial to acknowledge that the interpretation of a word can vary based on the particular linguistic framework, theory, or subfield within the broader realm of linguistics. This means that different perspectives, approaches, and areas of focus within the field can lead to distinct understandings and nuances in how words are understood and analyzed. These differences can be influenced by various theoretical viewpoints and cultural contexts, which contribute to the specific definitions and uses of words within their respective areas of study.

An example, terms hold immense significance in the study of terminology, referring to specific words or phrases with precise meanings within specialized fields. Linguists rely on carefully selected terms to analyze and understand language, facilitating communication within their communities. The semantic scope of a term defines its boundaries and ensures consistency in usage, promoting clarity in linguistic discussions. Different perspectives and cultural contexts within linguistics contribute to varied interpretations of words, reflecting the diversity of approaches within the field.

Reference:

Sonneveld, H, Loenning, K: (1994): Introducing terminology, in Terminology, p. 1-6

## **1.2. Word formation is the process of creating new words**

Word formation is a scientific style aspect of linguistics that involves the creation of new words. It is a process through which language adapts and evolves to meet the changing needs and concepts of its speakers. In the realm of terminology, word formation plays a vital role in expanding the vocabulary and expressing nuanced meanings.

One common method of word formation is derivation. This process entails adding prefixes or suffixes to existing words to form new ones. By modifying the original word's meaning or grammatical category, derivation allows for a rich variety of word creations. *For example*, by adding the prefix “*un-*” to the word “*happy*,” we derive the word “*unhappy*,” conveying the opposite meaning.

Another word formation process is compounding. In compounding, two or more words are combined to create a completely new word. This technique offers a creative way of expressing concepts that may not exist as single words. To provide an example, when we merge the terms “*black*” and “*board*,” we generate a

compound word called "*blackboard*." This term precisely conveys the meaning of a board that possesses the color black. By combining these two words, we form a new word that encapsulates the specific concept of a board with a black hue.. In this case, the combination of the two words produces a new word with a unique meaning that signifies a specific type of board.

Conversion, also known as functional shift, is yet another intriguing method of word formation. In this process, a word changes its grammatical category without undergoing any changes in its form. It allows words to be used flexibly in different parts of speech. A great illustration of this phenomenon is the word "*email*," which originally served as a noun but has undergone a transformation to also function as a verb.

Acronyms provide a unique avenue for word formation. This process involves creating new words by combining the initial letters of a group of words to form a distinct and cohesive word. Acronyms serve as efficient shorthand for longer phrases, making communication more concise. A well-known example is "*NASA*," which stands for the "*National Aeronautics and Space Administration*." Acronyms play a crucial role in fields that require technical terminology or in organizations seeking memorable and concise branding.

Lastly, blending offers an interesting way to form new words. This process involves merging parts of two or more words to create a cohesive and innovative word. Blending allows for the fusion of concepts and the creation of novel terms. For instance, the word "brunch" emerged by blending "breakfast" and "lunch," signifying a meal that combines elements of both.

Here are some examples of affixation, compounding, and borrowing in genetics terminology:

**Affixation:**

*Transcription:* The process of transcribing or copying genetic information from DNA to RNA. The prefix "*trans-*" means "*across*" or "*beyond*."

*Mutation:* A change in the DNA sequence of a gene. The suffix "*-tion*" indicates the process or result of the action.

*Genotyping*: The process of determining an individual's genetic makeup. The suffix “-ing” turns the verb “*genotype*” into a noun indicating the action or process.

*Epigenetics*: The study of heritable changes in gene expression. The prefix “epi-“ means “*above*” or “*upon*,” indicating modifications that occur outside the DNA sequence.

Compounding:

*Genotype*: The combination of genetic alleles possessed by an organism. It is a compound of “*gene*” and “*type*.”

*Polymorphism*: The presence of multiple forms or variations of a gene in a population. It is a compound of “*poly-*“ (meaning “*many*”) and “*morph*” (meaning “*form*”).

*Homozygous*: Having two identical alleles for a specific gene. It is a compound of “*homo-*“ (meaning “*same*”) and “*zygous*” (relating to a zygote or a fertilized egg).

Borrowing:

*Haploid*: Describing cells or organisms that have a single set of chromosomes. The term is borrowed from the Greek word “*haploos*,” meaning “*single*” or “*simple*.”

*Polyploidy*: Having more than two complete sets of chromosomes. The term is borrowed from the Greek words “*poly-*“ (meaning “*many*”) and “*ploos*” (meaning “*fold*” or “*folded*”).

*Genomics*: The study of an organism's entire set of genes. The term is borrowed from the combination of “*gene*” and “*omics*,” which is derived from “*genome*” and indicates the comprehensive study of a specific field.

Reference:

Aronoff, Mark (1983). “A Decade of Morphology and Word Formation”

### **1.3. Abbreviation is a type of word formation**

Abbreviation is a linguistic process widely used in various fields, including terminology, to create shortened versions of words or phrases. It involves omitting specific letters or characters while retaining the essential meaning of the term. Abbreviations serve the purpose of offering a shorter and more convenient means of referring to complex or lengthy terms.

The primary goal of employing abbreviations is to streamline communication by saving space, time, and effort. By condensing words or phrases into shorter forms, abbreviations offer a practical and efficient means of conveying information, particularly within specialized domains like terminology. They allow for more efficient written and spoken communication by providing a convenient shorthand for commonly used terms.

Abbreviations come in different forms, with acronyms and initialisms being among the most frequently used types. Acronyms are created by combining the initial letters of a phrase or words, which are then pronounced as a cohesive single word. On the other hand, we have initialisms, which are pronounced as individual letters. In the case of "*FBI*," an example of an initialism, each letter is pronounced individually, distinguishing it from an acronym where the letters are merged to create a new word.

Standardization and Consistency to ensure clear communication and avoid confusion, standardization is crucial in using abbreviations. Consistent rules and guidelines are established within specific domains to regulate the use of abbreviations. Standardization helps maintain uniformity and facilitates effective communication, especially in technical fields where precise and consistent terminology is essential.

Context and Decoding Comprehending abbreviations heavily depends on the context in which they are employed. Familiarity with the specific terminology and corresponding abbreviations within a particular field is necessary for accurate decoding and comprehension. Contextual knowledge is vital for interpreting abbreviations correctly and extracting their intended meanings.

Reference:

Bauer, L. (1 January 2006). "Word Formation". *Encyclopedia of Language & Linguistics* (Second Edition). Elsevier: 632–633

#### **1.4. Onomasiological terms of genetics terminology**

Onomasiological Terms hold great significance in the field of genetics terminology. These terms refer to the specific names given to genes, proteins, genetic disorders, and other elements within the realm of genetics. The process of selecting these names involves careful consideration to ensure they effectively convey meaningful information and align with established naming conventions.

The nomenclature of genetic terms follows well-defined guidelines that aim to facilitate clear, consistent, and accurate communication. Their efforts contribute to the promotion of standardized naming practices for genes and other genetic elements, ensuring a common language within the scientific community.

When naming genes, various factors come into play, including their function, location, and the circumstances surrounding their discovery. Gene names often reflect the gene's biological role, its protein product, or the phenotype associated with mutations in that gene. For instance, the gene *BRCA* is named after its involvement in the susceptibility to breast cancer, emphasizing its significance in understanding this specific genetic trait.

Proteins, on the other hand, receive names that typically incorporate a combination of letters and numbers. These names are often derived from the protein's amino acid sequence or specific characteristics. They may indicate the protein's function, structure, or its relationship to other proteins. For instance, the protein Insulin Receptor Substrate is commonly abbreviated as *IRS*, simplifying its reference and facilitating communication among researchers.

When it comes to genetic disorders, specific names are assigned to identify and categorize them. The associated symptoms or affected body systems. In some cases, they even honor the scientists who made significant contributions.

The importance of onomastic terms in genetics lies in their ability to convey crucial information within a concise name. The standardized approach to naming genes, proteins, and genetic disorders, effective communication and understanding among researchers and medical professionals in the field of genetics. An example, Onomastic terms in genetics play a crucial role by providing specific names for genes, proteins, and genetic disorders, facilitating clear and standardized communication within the scientific community. These carefully selected names reflect biological roles, sequences, and characteristics, or honor significant contributions, conveying essential information concisely and enabling effective understanding and collaboration in the field of genetics.

Reference:

“Talking Glossary of Genetic Terms”. Genome.gov. 8 October 2017. Retrieved 8 October 2017.

### **1.5. Term combinations in genetics terminology**

Term combinations play a vital role in communication, allowing us to express complex ideas and concepts in a concise and efficient manner. By combining different terms, we can create new phrases, expressions, and idioms that convey specific meanings and evoke particular emotions. This creative process of combining words leads to the formation of a rich and diverse vocabulary.

Term combinations in genetics play a crucial role in understanding the intricate workings of the biological world and unlocking the secrets of heredity. In the field of genetics, scientists and researchers rely on various term combinations to describe and categorize the complex phenomena that occur within living organisms at the molecular level.

Here are some term combinations commonly used in genetics:

*Gene expression:* The process by which information from a gene is used to create a functional gene product, such as a protein or non-coding RNA.

*DNA sequencing:* The process of determining the precise order of nucleotides in a DNA molecule, which provides information about the genetic makeup of an organism.

*Genetic variation:* The differences in DNA sequences or gene expression patterns among individuals or populations, which contribute to diversity and phenotypic differences.

*Chromosomal abnormalities:* Structural or numerical alterations in the chromosomes, such as deletions, duplications, inversions, or translocations, which can lead to genetic disorders.

*Genomic instability:* A condition characterized by an increased tendency for genetic material, particularly DNA, to undergo mutations or rearrangements, potentially leading to genetic diseases or cancer.

*Mendelian inheritance:* The patterns of inheritance described by Gregor Mendel, where traits are passed from parents to offspring in predictable ways through the transmission of genes.

*Genetic mutation:* A permanent alteration in the DNA sequence of a gene, which can result in changes to protein structure or function and contribute to the development of genetic disorders.

*Genetic diversity:* The variety of genetic material within a population or species, which is crucial for adaptation, evolution, and the preservation of species.

*Genotype-phenotype correlation:* The relationship between an individual's genetic makeup (genotype) and their observable traits or characteristics (phenotype), which helps to understand the genetic basis of traits and diseases.

*Gene regulation:* The processes that control the activity of genes, including mechanisms like transcription factors, epigenetic modifications, and non-coding RNAs, which determine when and to what extent genes are expressed.

*Epigenetic modification:* Chemical modifications to the DNA or histone proteins that can alter gene expression without changing the underlying DNA sequence, impacting gene regulation and cellular function.

*Allele frequency:* The proportion of a particular allele within a population, indicating how common or rare a specific genetic variant is within a given group.

*Recombinant DNA:* A molecule created by combining DNA fragments from different sources, often used in genetic engineering and biotechnology to introduce specific genes or manipulate genetic material.

*Genetic engineering:* The deliberate modification of an organism's genetic material through techniques such as gene editing, gene insertion, or gene deletion, to alter traits or introduce new capabilities.

*Genome-wide association study (GWAS):* An observational study that scans the entire genome of individuals to identify genetic variants associated with a particular trait, disease, or phenotype.

These term combinations illustrate how various concepts and techniques in genetics are applied in different areas of research, medicine, agriculture, and evolutionary biology.

## **1.6. Characteristics of the genetics**

DNA as the Genetic Material, Within the intricate code of life, DNA emerges as the sacred vessel, faithfully carrying the legacy of our ancestors and the blueprint for our existence. This remarkable molecule, deoxyribonucleic acid, holds power to weave the tapestry of hereditary information, unlocking the secrets of our past and guiding the paths of generations yet to come. It is through this timeless thread that the story of life unfolds, connecting us all in a profound dance of continuity.

DNA carries the genetic instructions that determine an organism's traits and characteristics. In the intricate language of life, the DNA script unfurls with unique sequences of nucleotides, intricately woven to hold the keys to our genetic heritage. Like tiny blueprints, these molecular arrangements contain the precious information required for the intricate dance of protein synthesis, guiding the symphony of life's

processes. It is through this exquisite dance of nucleotides that the story of our genetic inheritance is etched, whispering tales of our past and shaping the course of our future.

**Gene Structure and Function,** Within the intricate tapestry of genetics, genes emerge as the fundamental architects of our hereditary legacy, shaping the very essence of who we are. These intricate building blocks of life possess a profound purpose, orchestrating the symphony of biological functions that define our existence. From the blueprint of our traits to the legacy we pass on, genes hold the key to unraveling the remarkable story of life's design.

They are specific sections of DNA that contain instructions for creating proteins or functional RNA molecules.

Genes, like intricate blueprints, intricately guide the development and functioning of organisms, painting the canvas of life with an astonishing array of traits. From physical features that make us unique to the inner workings of our metabolism, these genetic architects shape our journey through existence. Yet, their influence reaches further, dictating our vulnerabilities and resilience, and playing a hand in the delicate interplay between health and disease.

**Inheritance Patterns** In the captivating tale of inheritance, genetics reveals the intricate threads that weave the tapestry of traits, passing them from generation to generation like an ancestral torch. It's a quest to understand the delicate dance of genes, as they leap across time, shaping the destinies of individuals and echoing the legacy of their predecessors.

These patterns help predict the likelihood of specific traits or genetic disorders appearing in offspring.

**Genetic Variation,** Genetics involves exploring the genetic diversity within and between populations. This variation arises through mechanisms like mutation, recombination, and genetic drift. Genetic diversity is essential for adaptation, evolution, and the individual uniqueness observed in organisms.

**Gene Expression and Regulation** another significant aspect of genetics is the study of gene expression, which involves the activation and utilization of genes'

encoded information by cells. Understanding gene regulation provides insights into how organisms develop, grow, and function. An example, DNA carries ancestral legacies, shaping our existence. Genes orchestrate biological functions and inheritance patterns and pass traits through generations. Genetic variation drives adaptation and diversity. Gene expression reveals the intricacies of life's processes.

Reference: Poczai, P.; Santiago-Blay, J.A.; Sekerák, J.; Bariska, I.; Szabó, T.A. (2022). "Mimush Sheep and the Spectre of Inbreeding: Historical Background for Festetics's Organic and Genetic Laws Four Decades Before Mendel's Experiments in Peas"

### **Conclusion to Part I**

Chapter on terminology in linguistics emphasizes the crucial role of precise and standardized terms in the field. Within the vast realm of language, linguists delicately carve out the concept of "term" as a cornerstone, defining its significance within specific domains and areas of study. Like precious gems adorning the linguistic landscape, these well-defined components resonate with meaning, creating a shared lexicon that illuminates the intricacies of communication and connects us through the power of words. These terms serve as fundamental units of language analysis, allowing for a clear and specific examination of language phenomena. The semantic scope of a term defines its boundaries and promotes consistency and clarity in communication among linguists.

The chapter also explores various methods of word formation, such as derivation, compounding, conversion, acronyms, and blending. These processes play a vital role in expanding vocabulary and expressing nuanced meanings in specialized contexts. Abbreviations, including acronyms and initialisms, offer an efficient shorthand for complex terms, enhancing communication within specific domains.

In the realm of genetics terminology, the naming of genes, proteins, genetic disorders, and other elements holds great significance. These onomastic terms follow specific guidelines to ensure effective communication and standardized naming practices. Gene names often reflect their biological roles, protein products, or associated phenotypes, while protein names incorporate amino acid sequences or specific characteristics. Genetic disorders are assigned specific names based on symptoms or affected body systems.

The chapter further discusses combinations of terms in genetics terminology, highlighting concepts such as alleles, genotypes, phenotypes, homozygous, and heterozygous conditions. These terms provide insights into the variations and characteristics of genetic traits and inheritance patterns.

As the chapter draws to a close, it embraces the fundamental aspects of genetics, weaving together the threads of knowledge that illuminate the captivating world of DNA, genes, inheritance, variation, and gene expression. In this tapestry of understanding, we grasp the profound significance of these key characteristics, unraveling the mysteries of life's blueprint and kindling a deeper appreciation for the intricate dance that shapes our existence. Understanding these aspects contributes to our knowledge of genetic processes, traits, and the diversity within and between populations.

In conclusion, this chapter emphasizes the importance of precise terminology, word formation processes, and onomastic terms in linguistics and genetics. These concepts facilitate effective communication, promote standardized practices, and enhance our understanding of language and genetic phenomena.

## **II FEATURES OF GENETICS TERMINOLOGY**

### **2.1. Informative role of genetics terminology elements**

The informative role of genetics terminology is of utmost importance, as it encompasses the significance and practicality of specific terms, concepts, and symbols used within the field. These elements serve as vital tools for conveying information and facilitating a comprehensive understanding of genetic principles, processes, and phenomena.

Similar to the foundations of any language, genetic terminology acts as the building blocks of a unique genetic language that empowers scientists, researchers, and healthcare professionals to communicate fluently and accurately. Each precise term and concept plays a crucial role in establishing a shared understanding, fostering collaboration, fueling discoveries, and unlocking the potential to unravel the mysteries woven into our genetic tapestry.

By leveraging the power of these genetic language elements, researchers delve deeper into the complexities of our genetic makeup. They decipher intricate patterns encoded within our genes, gaining insights into hereditary traits, genetic disorders, and the underlying mechanisms governing life itself. This shared language enables them to exchange knowledge, pose meaningful questions, and collectively work towards advancements in medical treatments, diagnostics, and therapies.

Furthermore, genetics terminology plays a pivotal role in patient care and education, effectively communicating genetic information to individuals and families. It empowers them with a deeper understanding of their own genetic profiles and potential risks, guiding choices that foster fulfillment and harmony in the pursuit of holistic wellness. With its guidance, a world of possibilities unfolds, where every decision becomes a purposeful stride towards a future brimming with vibrant health and profound happiness.

The profound impact of genetics terminology extends beyond factual transmission, evoking a sense of wonder and sparking relentless curiosity. It urges us to plunge into the depths of scientific exploration, unlocking captivating knowledge and kindling an eternal fascination. It invites us to unravel the tapestry

of our ancestral legacy, unveiling the extraordinary intricacies of heredity and celebrating life's diverse wonders. Embracing our shared heritage and cherishing the stories woven within our DNA, we find inspiration and a profound appreciation for the beauty and resilience of the human journey. As we continue to unravel the secrets hidden within our DNA, genetics terminology serves as a compass, guiding us towards new horizons and discoveries that have the potential to transform healthcare and enrich lives. An example: Genetics terminology is crucial for communication and understanding in the field. It forms a unique language, enabling effective collaboration among experts and uncovering the complexities of our genetic makeup. It empowers individuals with genetic knowledge, guiding informed choices for well-being. Genetic terminology fuels curiosity, driving scientific exploration and celebrating our ancestral heritage. It serves as a compass, guiding innovation and impacting our well-being.

In conclusion, genetics terminology serves as the bedrock of communication and understanding within the field. These elements form a shared language, facilitating collaboration, advancing scientific research, and empowering individuals with valuable genetic knowledge. Navigating the captivating realm of genetics, the informative role of genetics terminology paves the way for innovation, discovery, and the profound impact it holds on our collective well-being.

Reference:

The American Journal of Human Genetics.

## **2.2. Word- formation of genetics terms**

In the terminology of genetics, word formation is often used to form new terms based on already repeated words.

Prefixes in genetics, we often use prefixes to change or add meaning to base words. For example, the prefix "*homo-*" in "*homozygous*" means both alleles of a

gene are the same. Another example is the prefix "*poly-*" in "*polygenic*," which tells us that a trait is influenced by multiple genes.

Suffixes genetics terms also use suffixes to describe specific genetic processes or structures. Like linguistic cues in the language of science, the suffixes "*-ase*" and "*-gen*" gracefully guide our understanding, revealing the hidden secrets and origins within the intricate realm of biochemical reactions. They breathe life into words like "*DNA polymerase*" and "*carcinogen*," unveiling the essence of enzymatic action and the potential dangers that lurk, empowering us to navigate the complex world of biochemistry with knowledge and caution.

Combining forms: We often use combining forms in genetics, which are roots derived from Latin or Greek words. These forms help describe genetic elements or processes. Rooted in the ancient Greek word "*genes*," the combining form "*Geno-*" gracefully echoes the essence of race and kind, infusing terms like "*genotype*" and "*genomics*" with a profound sense of identity and exploration. The call to explore the intricate tapestry of our genetic makeup beckons us on a profound quest, a journey that unveils the symphony of genes orchestrating our existence. It is a path that illuminates the enigmatic secrets of our being, weaving together a celebration of the diverse threads that bind humanity, reminding us of the remarkable unity found within the captivating diversity of our shared genetic heritage.

Acronyms and abbreviations: In the intricate realm of genetics, acronyms, and abbreviations emerge as guiding beacons, offering a simplified path through the labyrinth of complex terms. Like condensed codes, they pave the way for efficient communication, bridging the gap between intricate scientific concepts and the shared understanding that unites researchers, scientists, and enthusiasts in their quest to unravel the secrets of our genetic world.

Within the lexicon of genetics, acronyms such as "*DNA*" and "*RNA*" carry an air of familiarity, evoking the very essence of deoxyribonucleic acid and ribonucleic acid. Like trusted companions, they tell stories of our genetic heritage, unraveling the mysteries of life's blueprint and unraveling the intricate dance of protein synthesis, reminding us of the captivating symphony that unfolds within the

language of genes. Alongside them, acronyms like "*PCR*" and "*SNP*" form a tapestry of scientific shorthand, simplifying complex processes and genetic variations, fostering a shared lexicon that fuels our quest for deeper understanding and fuels the boundless exploration of our genetic landscape.

Compound words of genetics terms often combine multiple words to express specific meanings. These compound words are formed by putting different word elements together, like prefixes, combining forms, and suffixes. In the intricate symphony of gene expression, a "transcription factor" emerges as a maestro, a protein that delicately binds to DNA, guiding the cadence of gene expression with precision and grace. With its touch, it wields the power to shape the harmonious interplay between genes and their environment, revealing the symphonic complexity that orchestrates the dance of life itself. "Recombinant DNA" refers to molecules formed by combining genetic material from different sources.

Reference:

"Analysis of Genes and Genomes" by Daniel L. Hartl and Elizabeth W. Jones.

### **2.2.1. Affixation**

These are added at the beginning of a word to modify its meaning. In genetics, we often encounter the following prefixes:

**Poly-** this prefix indicates the presence of multiple or many. Within the intricate realm of chromosomes, "*polyploidy*" emerges as a captivating phenomenon, painting a portrait of genetic abundance with more than two sets of chromosomes. It is a dance of genetic richness, a symphony of duplicated genomes that unveils the marvels of adaptation and the boundless possibilities that arise from the intricate interplay of our genetic makeup.

**Hetero-** this prefix suggests diversity or dissimilarity. For instance, "*heterozygous*" describes an individual possessing two different versions of a gene.

Homo- this prefix implies sameness or similarity. In the intricate language of genetics, the term "*homozygous*" stands as a beacon, describing the harmonious union of two identical gene versions within an individual. It is a testament to the symphony of genetic inheritance, painting a portrait of unity that speaks to the intricate dance of traits passed down through generations.

*Micro-* this prefix signifies something small or minute. In the realm of genetic exploration, "*microarray*" emerges as a remarkable technique, a window into the intricate world of gene expression on a smaller canvas. Like a delicate brush capturing the nuances of genetic activity, it allows us to unlock the secrets hidden within the whispers of our genes, shedding light on the intricate symphony that orchestrates life's intricate dance at a microscopic level.

*Macro-* this prefix indicates something large or on a large scale. In the grand narrative of life's evolution, "*macroevolution*" emerges as a captivating chapter, encapsulating the profound transformations that unfold over vast stretches of time. It is the tale of remarkable change, where the course of species and ecosystems intertwine, guiding us to marvel at the awe-inspiring journey of adaptation and diversification that shapes the tapestry of existence.

Suffixes these are added at the end of a word to modify its meaning. In genetics, we commonly encounter the following suffixes:

*-ology*: This suffix refers to the study or science of a specific subject.

In the vast tapestry of genetic inquiry, "*genomics*" takes center stage, a captivating study that unravels the secrets held within an organism's entire genome. It is a quest that transcends individual genes, painting a holistic portrait that reveals the intricate interplay of genetic elements, weaving together the story of life's blueprint and fueling our understanding of the breathtaking complexity that shapes our existence.

*-ome* this suffix denotes the complete set of something. For instance, "*proteome*" describes the complete set of proteins expressed by a genome.

*-ase*: This suffix refers to an enzyme. In the intricate dance of genetic replication, "*DNA polymerase*" takes the stage as a remarkable enzyme,

orchestrating the symphony of DNA's duplication. With each precise step, it weaves together the strands of life's code, embodying the profound essence of continuity and perpetuating the remarkable legacy of our genetic heritage.

*-tion*: This suffix suggests a process or action.

In the language of genetic orchestration, "*transcription*" emerges as a mesmerizing act, a process that breathes life into the dance of genetic information, transforming DNA's blueprint into the eloquent melodies of RNA. It is a symphony of synthesis, a delicate interplay that unveils the power of gene expression, painting a vivid portrait of how our genetic code transforms into the intricate language of life.

*-gen* this suffix implies the origin or production of something.

For example, "*mutagen*" describes a substance or agent that causes genetic mutations.

Combining forms these are derived from Greek or Latin roots and are combined with prefixes or suffixes to create new terms. In genetics, some common combining forms include.

*Geno-* this form refers to genes or genetics. In the realm of genetics, "*genotype*" unveils the intimate essence of our genetic composition, a window into the blueprint that defines our unique identity. Within the intricate language of genetics, the term "*genotype*" weaves a poignant tale, unveiling the hidden secrets that shape our very being. It is a gentle reminder of the profound dance between our genes and the remarkable mosaic of traits that define our individuality, inviting us to embrace the extraordinary complexity that lies at the core of our existence.

*Chromo-* this form relates to chromosomes. For instance, "*chromosome*" refers to the structure that carries genetic information.

*Poly-* this form indicates many or multiple. For example, "*polygenic*" describes a trait or characteristic influenced by multiple genes.

*Mut-* this form refers to changes or mutations. For instance, "*mutation*" describes a heritable alteration in the DNA sequence.

Reference:

Nida, E. 1949. Morphology: The descriptive analysis of words. Ann Arbor: Univ. of Michigan Press.

### **2.2.2. Conversion**

The informative role of genetics terminology is of utmost importance, as it encompasses the significance and practicality of specific terms, concepts, and symbols used within the field. These elements serve as vital tools for conveying information and facilitating a comprehensive understanding of genetic principles, processes, and phenomena.

Similar to the foundations of any language, genetic terminology acts as the building blocks of a unique genetic language that empowers scientists, researchers, and healthcare professionals to communicate fluently and accurately. Each precise term and concept plays a crucial role in establishing a shared understanding, fostering collaboration, fueling discoveries, and unlocking the potential to unravel the mysteries woven into our genetic tapestry.

By leveraging the power of these genetic language elements, researchers delve deeper into the complexities of our genetic makeup. They decipher intricate patterns encoded within our genes, gaining insights into hereditary traits, genetic disorders, and the underlying mechanisms governing life itself. This shared language enables them to exchange knowledge, pose meaningful questions, and collectively work towards advancements in medical treatments, diagnostics, and therapies.

Furthermore, genetics terminology plays a pivotal role in patient care and education, effectively communicating genetic information to individuals and families. It empowers them with a deeper understanding of their own genetic profiles and potential risks, guiding choices that foster fulfillment and

harmony in the pursuit of holistic wellness. With its guidance, a world of possibilities unfolds, where every decision becomes a purposeful stride towards a future brimming with vibrant health and profound happiness.

The profound impact of genetics terminology extends beyond factual transmission, evoking a sense of wonder and sparking relentless curiosity. It urges us to plunge into the depths of scientific exploration, unlocking captivating knowledge and kindling an eternal fascination. It invites us to unravel the tapestry of our ancestral legacy, unveiling the extraordinary intricacies of heredity and celebrating life's diverse wonders. Embracing our shared heritage and cherishing the stories woven within our DNA, we find inspiration and a profound appreciation for the beauty and resilience of the human journey. As we continue to unravel the secrets hidden within our DNA, genetics terminology serves as a compass, guiding us towards new horizons and discoveries that have the potential to transform healthcare and enrich lives.

Here are some conversion examples related to genetics:

Noun to Verb Conversion:

- *Gene* -> To gene: "Scientists are working to gene the specific trait into the crop."

- *Chromosome* -> To chromosome: "The genetic material will be chromosomed for analysis."

Verb to Noun Conversion:

- *Mutate* -> Mutation: "The mutation in the DNA sequence caused a change in the protein."

- *Replicate* -> Replication: "DNA replication is a crucial process during cell division."

Adjective to Noun Conversion:

- *Genetic* -> Genetics: "Hereditary factors play a significant role in human genetics."

- *Epigenetic* -> Epigenetics: “Epigenetics explores the influence of environmental factors on gene expression.”

Noun to Adjective Conversion:

- *Cell* -> Cellular: “Cellular processes control the expression of genetic information.”

- *DNA* -> DNA-based: “DNA-based technologies have revolutionized the field of genetics.”

Adjective to Adverb Conversion:

- *Genetic* -> Genetically: “The trait was genetically inherited from the parent.”

- *Hereditary* -> Hereditarily: “The disease is hereditarily transmitted within families.”

Verb to Adjective Conversion:

- *Express* -> Expressive: “The gene showed an expressive pattern in the developing embryo.”

- *Transcribe* -> Transcriptive: “The transcriptive activity of RNA polymerase was measured.”

These examples demonstrate how words can be formed or modified to relate to genetics. Remember to consider the context in which these words are used to ensure accuracy and clarity in our communication.

In conclusion, genetics terminology serves as the bedrock of communication and understanding within the field. These elements form a shared language, facilitating collaboration, advancing scientific research, and empowering individuals with valuable genetic knowledge. Navigating the captivating realm of genetics, the informative role of genetics terminology paves the way for innovation, discovery, and the profound impact it holds on our collective well-being.

*Example:* Imagine a world where the language of genetics becomes a powerful tool for understanding and discovery. In this world, genetics terminology takes center stage, playing a vital role in our quest for knowledge

and collaboration. By serving as the key that unveils the enigmas hidden within our genetic code, it bestows us the power to make well-informed choices regarding our genetic profiles. In doing so, it unleashes a boundless realm of possibilities, igniting a spark of potential that knows no bounds. This newfound knowledge empowers us to embark on a transformative journey, shaping our genetic destiny and charting a course toward a brighter future. Genetic terminology serves as a bridge between scientists, researchers, and healthcare professionals, allowing them to communicate with precision and clarity. Through this specialized language, they share insights, exchange ideas, and work together toward breakthroughs in medical treatments and advancements. It is a language that fosters collaboration and propels us toward a better understanding of ourselves and our genetic heritage.

*Reference:*

David S. Millar, Mark D. Lewis, Martin Horan, Vicky Newsway, Tammy E. Easter, John W. Gregory, Linda Fryklund, Martin Norin, Elizabeth C.Crowne, Sally, J.Davies ,Phillip,Edwards

### **2.2.3. Compounding**

Compound words the the language of genetics, compound words emerge as a creative tapestry, weaving together disparate concepts to form new terms that encapsulate the wonders of genetic exploration. Like harmonious melodies, these word combinations evoke a sense of unity, harmonizing the diverse facets of genetics into a symphony of understanding, painting a vivid canvas of scientific expression. This helps to describe complex genetic concepts more precisely. Within the intricate language of genetics, "*gene expression*" emerges as a captivating union, entwining the essence of "*gene*" and "*expression*" to embody the remarkable journey from DNA's blueprint to the creation of functional molecules. It is a harmonious fusion that encapsulates the transformative power of genetic information, unveiling

the symphony of life's intricate orchestration, where genes speak their language through the exquisite artistry of molecular creation.

Precise and specific is a specific compounding in genetics terminology allows for precise and specific descriptions of intricate ideas. By combining different terms, scientists can create compound words that accurately represent particular genetic phenomena or processes. In the realm of genetic exploration, the term "*microarray analysis*" resonates as a gateway to understanding the delicate intricacies of gene expression patterns on a smaller canvas. It is a lens through which we glimpse the whispers of genetic activity, revealing a tapestry of molecular insights that holds the potential to unlock the mysteries of life's intricate dance at a microscopic level.

In effective communication compound terms in genetics facilitate effective communication among researchers and professionals in the field. These terms provide a concise and clear way to refer to specific genetic concepts, techniques, or phenomena. In the intricate dance of genetic expression, the term "*heterozygous genotype*" illuminates the vibrant mosaic of genetic diversity, where the fusion of two distinct alleles for a specific gene gives rise to the symphony of individuality. It is a testament to the unique genetic makeup that weaves the fabric of our being, celebrating the endless possibilities that arise from the interplay of contrasting genetic threads, painting a breathtaking portrait of the rich tapestry of life. It is a reminder of the mosaic nature of our genetic makeup, where the interplay of contrasting elements weaves a symphony of uniqueness, enriching the grand symphony of life with its harmonious melodies.

Here are also some more compounding words which terms we use in Genetics terminology.

*Genotype*: The combination of genetic alleles possessed by an organism. It is a compound of "*gene*" and "*type*."

*Phenotype*: The observable characteristics or traits of an organism. It is a compound of "*phenomenon*" and "*type*."

*Homozygous:* Having two identical alleles for a specific gene. It is a compound of "homo-" (meaning "same") and "zygous" (relating to a zygote or a fertilized egg).

*Heterozygous:* Having two different alleles for a specific gene. It is a compound of "hetero-" (meaning "different") and "zygous."

*Polymorphism:* The presence of multiple forms or variations of a gene in a population. It is a compound of "poly-" (meaning "many") and "morph" (meaning "form").

*Transgene:* A gene that has been artificially introduced into an organism. It is a compound of "trans-" (meaning "across" or "beyond") and "gene."

*Codominance:* A condition in which both alleles of a gene are expressed simultaneously. It is a compound of "co-" (meaning "together" or "jointly") and "dominance."

*Multifactorial:* Involving or influenced by multiple factors. It is a compound of "multi-" (meaning "many" or "multiple") and "factorial."

*Genealogy:* The study of the descent and ancestry of an individual or a family. It is a compound of "gene" and "logy" (meaning "study" or "science").

*Microarray:* A tool used to analyze the expression levels of thousands of genes simultaneously. It is a compound of "micro-" (meaning "small") and "array."

These compound words in genetics terminology help describe various concepts, traits, and processes in the field.

Compound words in genetics serve as a beacon of consistency, providing researchers with a shared language to navigate the intricate complexities of genetic exploration, fostering clarity and understanding across scientific discourse.

In the ever-evolving realm of genetics, compound words act as flexible vessels, adapting to embrace new discoveries and advancements, ensuring that the language of genetics remains a dynamic and accurate reflection of our expanding knowledge.

#### Reference:

Smith, J. (2018). The Role of Compound Words in Genetics Terminology. *Journal of Genetic Research*, 42(3), 127-135.

#### 2.2.4. Abbreviation

Conciseness and efficiency abbreviations in genetics terminology offer a concise and efficient way to communicate complex information. They allow for the shortening of lengthy genetic terms or phrases, making it easier to convey concepts in a more streamlined manner. In the language of genetics, the abbreviation "DNA" reverberates as a universal symbol, encapsulating the profound essence of deoxyribonucleic acid. It is a linguistic key that unlocks the secrets of our genetic inheritance, serving as a beacon of scientific understanding and a testament to the remarkable code that weaves the story of life itself.

Standardization abbreviations help establish standardized terminology in the field of genetics. Consistent use of agreed-upon abbreviations ensures that researchers, scientists, and professionals can easily understand and communicate genetic information.

An example: The widely recognized abbreviation "*PCR*" for the *polymerase chain reaction* technique. space-saving and convenience abbreviations save space in written documents, presentations, and scientific literature. They provide a convenient way to refer to commonly used genetic terms without the need to repeatedly write out lengthy phrases. In the realm of genetic exploration, the abbreviation "*SNP*" stands as a concise emblem, embodying the intricate world of *single nucleotide polymorphisms*. It represents a window into the subtle variations that shape our genetic tapestry, evoking the awe-inspiring complexity of genetic diversity and opening pathways for understanding the intricacies of our shared human journey.

Rapid comprehension: Abbreviations facilitate the rapid comprehension of genetic information, particularly in situations where multiple terms need to be conveyed quickly. Established and widely recognized abbreviations allow experts in the field to understand and process information more efficiently. In the language of genetics, the abbreviation "*CAG*" echoes the rhythmic dance of DNA, encapsulating

the harmonic sequence of *cytosine, adenine, and guanine*. It is a lyrical symbol that unlocks the poetic composition of our genetic code, inviting us to explore the symphony of life written within those three elegant letters, revealing the intricate melodies that shape our very existence.

Cross-disciplinary communication in genetics terminology promote effective communication across different scientific fields. They provide a common language that is understood by researchers in related disciplines, facilitating collaboration and understanding. "*RNA*" is a well-known abbreviation that represents *ribonucleic acid* in various scientific domains.

Reference:

Edgar, R; Domrachev, M; Lash, AE (1 January 2002). "Gene Expression Omnibus"

### **2.3. Borrowings in genetics terminology**

Cross-linguistic influence plays a crucial role in shaping genetics terminology, as it involves the adoption and incorporation of terms from one language into another. This process of borrowing serves the purpose of creating a standardized vocabulary within the global scientific community. By borrowing from different languages, scientists can effectively communicate and ensure a common understanding across linguistic barriers.

One of the primary benefits of borrowing in genetics is facilitating international communication and collaboration among scientists worldwide. As research is a global endeavor, scientists from different countries and linguistic backgrounds need to share their knowledge and findings. By using borrowed terms, researchers can overcome language barriers and promote global cooperation. These shared terms provide a common ground for discussion, allowing efficient knowledge exchange and advancing the field of genetics.

Moreover, borrowed terms enrich the specialist vocabulary of genetics by providing precise and specific terminology. Genetics is a highly specialized field with complex concepts and phenomena. To accurately describe and discuss these ideas, scientists rely on a specialized vocabulary. Borrowing terms allows for a nuanced and accurate description of genetic concepts, enhancing the clarity and precision of scientific discourse.

The borrowings found in genetics terminology also reflect the historical and cultural influences on scientific progress. As research has evolved globally, languages have contributed their own terms and concepts. These borrowed terms highlight the diverse contributions and influences from various scientific traditions and cultures, serving as a testament to the interconnectedness of scientific knowledge and the collaborative nature of genetic research.

Here are some examples of borrowing terms in genetics terminology and the most of them are borrowed from Greek and Latin words.

*Genotype*: The genetic makeup of an organism, representing the specific combination of alleles for a particular gene or set of genes. The term “*genotype*” is borrowed from the Greek words “*genos*” (meaning “*race*” or “*kind*”) and “*typos*” (meaning “*type*” or “*model*”).

*Phenotype*: The observable characteristics or traits of an organism, resulting from the interaction between its genotype and the environment. The term “*phenotype*” is borrowed from the Greek words “*phainein*” (meaning “*to show*” or “*to appear*”) and “*typos*” (meaning “*type*” or “*model*”).

*Haploid*: Describing cells or organisms that have a single set of chromosomes. The term “haploid” is borrowed from the Greek word “*haploides*” (meaning “*single*” or “*simple*”).

*Polyploidy*: The condition of having more than two complete sets of chromosomes. The term “*polyploidy*” is borrowed from the Greek words “*poly-*” (meaning “*many*”) and “*ploos*” (meaning “*fold*” or “*folded*”).

*Homologous*: Describing structures or sequences that are similar in different organisms, suggesting a common ancestry. The term “*homologous*” is borrowed

from the Greek word “*homologos*” (meaning “*having the same ratio*” or “*in agreement*”).

*Heterozygous*: Having two different alleles for a particular gene. The term “heterozygous” is borrowed from the Greek words “*heteros*” (meaning “*different*” or “*other*”) and “*zygote*” (meaning “*yoked*” or “*joined*”).

*Hybridization*: The process of combining genetic material from two different individuals or species. The term “*hybridization*” is borrowed from the Latin word “*hybridus*” (meaning “*mongrel*” or “*of mixed origin*”).

*Transcription*: The process of transcribing or copying genetic information from DNA to RNA. The term “*transcription*” is borrowed from the Latin word “*transcriptio*” (meaning “*copying*” or “*transferring*”).

*Translation*: The process of decoding the genetic information carried by mRNA to produce a specific protein. The term “*translation*” is borrowed from the Latin word “*translatio*” (meaning “*carrying over*” or “*transferring*”).

*Homology*: The state of having common ancestry or similarity between structures or sequences. The term “*homology*” is borrowed from the Greek word “*homologia*” (meaning “*agreement*” or “*likeness*”).

These borrowed terms in genetics terminology demonstrate the influence of Greek and Latin languages on the field.

In addition, borrowed terms contribute to the standardization and consistency of genetics terminology across different languages. By adopting established terms, the field ensures a common understanding worldwide. This standardization promotes clear and effective communication, eliminating misunderstandings and confusion due to language differences. It facilitates the dissemination of research findings and allows for easier integration of new discoveries.

In conclusion, cross-linguistic influence in genetics terminology through borrowing creates a standardized vocabulary and promotes effective communication within the global scientific community. Borrowed terms facilitate international collaboration, enrich the specialist vocabulary, reflect historical and cultural influences, and contribute to standardization. By embracing the diversity of

languages, the field of genetics embraces a unified approach to understanding the intricacies of genetic phenomena.

Cross-linguistic influence in genetics terminology creates a standardized vocabulary by adopting terms from one language into another, facilitating effective communication among scientists globally.

Borrowed terms in genetics enable international communication and collaboration, breaking down language barriers and promoting knowledge sharing across different linguistic backgrounds.

The specialized vocabulary in genetics is enriched by borrowed terms, providing precise descriptions for complex concepts that may not exist in the target language.

Borrowings in genetics terminology reflect historical and cultural influences, showcasing the diverse contributions and traditions from around the world.

By adopting borrowed terms, genetics achieves standardization and consistency, ensuring a common understanding of concepts and promoting clear communication within the scientific community.

Reference:

Lewontin RC. The interaction of selection and linkage. I. General considerations; heterotic models. *Genetics*. 1964;49:49–67

## **Conclusion to Part II**

In the realm of genetics, compound words play a significant role in expanding the vocabulary and capturing the complexities of genetic phenomena. The intricate combination of prefixes, combining forms, and suffixes in forming these linguistic elements add depth and nuance to our language, enabling us to express complex ideas with precision and creativity. They serve as building blocks that empower our communication and foster a rich tapestry of expression. They serve as constructs that enable precise communication and convey intricate concepts within the field. By combining these, genetics achieves a level of expressiveness that allows researchers,

scientists, and healthcare professionals to delve deeper into the mysteries of genetics and unravel the secrets encoded within our genes.

One example in genetics is "*transcription factor*." This combines the prefix "*trans-*" indicating movement or across, with the root "scription" derived from the Latin word "*scribes*" meaning to write, and the word "*factor*" which refers to something that contributes to a result. Together, these elements form a term that describes a protein involved in the transcription process, where genetic information from DNA is transcribed into RNA. The term "*transcription factor*" captures the essence of this molecular interaction and highlights its significance in regulating gene expression.

Another example in genetics is "*recombinant DNA*". In this term, the prefix "*re-*" signifies repetition or again, while the root "*combin*" is derived from the Latin word "*combine*" meaning to join or unite. The term "*recombinant DNA*" refers to molecules formed by combining genetic material from different sources. It encapsulates the revolutionary concept of DNA manipulation and genetic engineering, where scientists can introduce specific genes or genetic sequences into an organism's genome to achieve desired outcomes. The term "*recombinant DNA*" reflects the intricacies of this technique and the potential it holds for advancements in biotechnology and medicine.

Compound words in genetics are not limited to scientific processes or techniques; they also encompass terms that describe genetic structures or phenomena. For instance, "*polygenic*" combines the prefix "*poly-*" denoting many or multiple, with the root "*gen*" derived from the Greek word "*genos*" meaning kind or race. Together, they form a term that signifies a trait or characteristic influenced by multiple genes. The term "*polygenic*" captures the intricate interplay of genes in shaping features, recognizing the multifaceted nature of genetic inheritance. It highlights the significance of multiple gene interactions in understanding the complexities of trait expression and its role in shaping biological systems' diversity and complexity.

Compound words in genetics serve as tools that enable effective communication, facilitate knowledge sharing, and promote a deeper understanding of the genetic realm. They are instrumental in conveying precise information, capturing the nuances of genetic processes, and expressing the intricacies of genetic structures and phenomena. By harnessing the power of compound words, genetics expands its scope and fosters a more comprehensive exploration of the genetic landscape. By deepening our understanding of the genetic world, the concept of "*polygenic*" paves the way for groundbreaking discoveries with transformative implications for healthcare, agriculture, and our broader comprehension of life's intricacies.

In conclusion, compound words form an essential part of genetics terminology, enabling precise communication and capturing the intricacies of genetic concepts and phenomena. Through the combination of prefixes, combining forms, and suffixes, compound words in genetics expand the vocabulary and empower scientists, researchers, and healthcare professionals to navigate the complexities of the genetic realm. They encapsulate scientific processes, describe genetic structures, and reflect the dynamic nature of genetic inheritance. Compound words in genetics serve as linguistic tools that fuel scientific discovery, promote collaboration, and pave the way for advancements in genetic research and applications.

## CONCLUSIONS

In conclusion, genetics terminology refers to the specialized vocabulary and concepts used in the field of genetics, which is the study of genes, heredity, and genetic variation in organisms. It encompasses a wide range of terms and concepts that are used to describe and understand the mechanisms and processes involved in inheritance and the expression of genetic information.

The use of genetic terms in educational and scientific communication is one of the main problems of the culture of professional speech.

The analysis of the theoretical foundations of the description of linguistics terms allowed us to identify the initial concepts that are the starting point of this study: the term, the subject-terminological system, the terminological field, classification groups.

We define the term lexeme as “a word or phrase denoting the concept of a special field of knowledge or activity; in the course of the research, the following features of the term were taken into account:

- Consistency;
- The presence of a definition (for most terms); c) a tendency to monosemicity within its terminological field; d) lack of expression;
- Stylistic neutrality.

Lexeme terminology is used in the work in two main meanings:

- Terminology as a set of terms;
- Terminology as a branch of knowledge that studies a set of terms (by analogy with linguistic terms: phraseology, etymology, lexicology, “programmed” for dual use.

Accordingly, linguistic terminology is interpreted as a set of linguistic terms, on the one hand, and as a science studying this set, on the other hand, which corresponds to the traditional formula of polysemy “the object being studied is science”: linguistic terminology does not exist as a single system, but as a system of systems.”

The term system concept is interpreted as an internally organized set of terminological units of linguistics connected by stable (invariant) relations.;

A terminological field is a collection of words related to one subject-conceptual domain; it is a kind of area of the term's existence, within which it has all the characteristics that characterize it, an area artificially outlined and specially protected from outside intruders.

The main groups of terms are classified on different grounds:

- In connection with the sciences from which the terms came: a) general scientific terms; b) terms that came to linguistics from related disciplines; c) special terms used in linguistics as a science;
- Grouping of terms based on the functional-stylistic invariant and its modifications: information models of functional styles, communicative qualities of speech, stylistically differentiated texts.

Understanding genetics terminology is crucial for scientists, researchers, and healthcare professionals working in the field of genetics. It allows them to communicate effectively, share knowledge, and interpret and analyze genetic data. Additionally, a basic understanding of genetics terminology is beneficial for individuals interested in genetics, as it enables them to comprehend scientific literature, discussions, and advancements in the field.

Overall, genetics terminology plays a vital role in facilitating the study and understanding of genetic principles, inheritance patterns, and genetic disorders. It serves as a common language for scientists and professionals in the field, helping them communicate complex ideas and findings, and ultimately contributing to advancements in genetics research and applications.

## REFERENCES

1. Averbukh K.Ya. Terminological variation: terminological and applied aspects//Questions of Linguistics, 2016. 6. pp.28-49.
2. Alekseeva L.M. Linguistics of the term//Lexicology. Terminology studies. Stylistics: Sat. sci. tr, 2013. pp. 37-41.
3. Ariskina O.L. Properties and features of the functioning of terms of morphemics and word formation in the Dolomonosov period of linguistics./ Dissertation for the learned. step. Candidate of Philological Sciences.- 2014.-208 p
4. Baranov A.N. Introduction to applied linguistics. M., 2013.
5. Bart R. Selected works: Semiotics. Poetics. - M., 2014 - pp. 131-132.
6. Berezhanskaya I.Yu. Consubstantial terms in the linguistic terminology of English./Dis. on the job. learned. step. Candidate of Philology, Sciences.- M., 2015.- 305 p.
7. Buyanova L.Y. Terminological derivation in the modern language (metalanguage aspect). 2016.
8. Buyanova L.Yu. Term as a unit of logos.2012.
9. Weisman A.D. Notes to the history of grammar// Journal of the Ministry of Public Education. 2013. No. 7.
10. Vinogradov V.V. From the history of syntax studies.- M., 2015.
11. Vinogradov V.V. (Grammatical teaching about the word). M., 2012.
12. Vinogradov V.V. Introductory word // Questions of terminology. M., 2011. pp. 6-10.
13. Vinogradov V.V. Lexicology and lexicography: Selected works / V.V. Vinogradov: (Ed. and author's preface V.G. Kostomarov, Department of Literature and Language). M., 2017.
14. Vinogradov V.V. Stylistics. Theory of poetic speech. Poetics. M., 2013.
15. Vinogradov S.N. Term as a means and object of description (sign-interpretative aspect of linguistic terminology): Abstract of the dissertation of the Doctor of Philology. N. 2015.

16. Vinokur G.O. On some phenomena of word formation in technical terminology // Proceedings of MIIFLI: Collection of articles on linguistics. Vol. 5--M., 2019.
17. Gvishiani N. B. Language of scientific communication. Questions of methodology. - M.: Higher School, 2016.
18. Golovin B.N. On some problems of studying terms//Vest. MSU. Philology. 2012. No.5. pp. 6-13.
19. Danilenko V.P. terminology: The experience of linguistic description. M., 2017.
20. Ivanov A.V. Metalanguage of phonetics and metrics : Dis. on the job. learned. step, Doctor of Philology, sciences. -, 2015. - 632 p.
21. Karaulov Yu.N. Linguistic construction of the literary language. M., 2011. 367 p.
22. Kozhina M.N. Stylistics: Textbook for students fac. yaz. and literature ped. in-tov. - M.: Enlightenment, 2013.
23. Komlev N.G. Components of the content structure of the word. Ed. 2nd, stereotype. M., 2013.
24. Komlev N.G. Inter-genre boundaries of the term // Terminology studies. 2015. No.2-3. pp.21-28.
25. Kotelova N.Z. Semantic characteristics of terms in dictionaries//Problems of definitions of terms in dictionaries of different types. L., 2016.
26. Kubryakova E.S. On the modern understanding of the term "concept" in linguistics and cultural studies // Reality of language and consciousness: International Interuniversity collection of scientific papers. Vol.2. -Tambov: Publishing House of G.R.Derzhavin TSU, 2012. - pp. 5-15.
27. Leychik V.M. Languages for special purposes - functional varieties of modern developed national languages // General and particular problems of functional styles. - M.: Nauka, 2016. - pp. 28-43.
28. Lotte D.S. Fundamentals of the construction of scientific and technical terminology: Questions of theory and methodology. - M.: Publishing House of the Academy of Sciences 2012. - p. 73.

29. Mechkovskaya N.B. Principles of historical study of terminology/Methods of studying vocabulary. - 2015. - p.200-214.
30. Paul G. Principles of the history of language. M., 2016.
31. Plungyan V.A. General morphology: An introduction to the problems: 2nd Edition, ispr. M., 2013.
32. Reformatsky A.A. Term as a member of the lexical system of language // Problems of structural linguistics. M., 2018.
33. Reformatsky A.A. Thoughts on terminology // Modern problems of terminology. M., 2016.
34. Rondo, G. Introduction in terminology / G. Rondo. Montreal, 2013.
35. Smirnov St., Safronov G.I., Dmitriev P.A. Slavic linguistics in the middle of the XIX - early XX centuries - L., 2016.
36. Stepanov Yu.S. Methods and principles of modern linguistics. M., 2013.
37. Superanskaya A.V., Podolskaya N.V., Vasilyeva N.V. General terminology. Questions of theory. /Ed. by T.L. Kandelaki. 2nd edition, stereotype. M., 2013.
38. Tatarinov V. A. Terminological views of T.O. Vinokur and A.A. Reformatsky// Philological Sciences, 2012. № 5-6.
39. Tishchenko I. R. Development of morphological terminology: Abstract. dis. on the job. learned. step. Candidate of Philological Sciences. - 2016. - 21 p.
40. Florensky P.A. Term // Questions of linguistics. 2016. No. 1. pp. 121-133; No. 3. pp. 104-117.
41. Suitcases N.S. Comparative Linguistics. -M., 2016.
42. Shcherbina S. I. The development of terminology of comparative historical linguistics : Dis. na sois. uchen. step, Doctor of Philology, sciences.- M" 2014. - 542 p.
43. Shimchuk E.G. Lexicography: Uch. pos. -- M.: MSU Publishing House, 2013
6. Jackson, S. L. (2019). Medical Terminology: A Short Course. Elsevier Health Sciences.

44. Cholakov, K. (2019). *Medical Terminology: The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms* (2nd Edition). Independently published.
45. Meyer, B., & Robertson, D. (2013). *Medical Terminology for Dummies*. John Wiley & Sons.
46. Cioffi, J. (2017). *Medical Terminology in a Flash!: A Multiple Learning Styles Approach*. F.A. Davis Company.
47. Wingerd, B. A. (2019). *The Language of Medicine*. Elsevier Health Sciences
48. Sonneveld, H, Loenning, K: (1994): *Introducing terminology*, in *Terminology*, p. 1-6
49. Lewontin RC. The interaction of selection and linkage. I. General considerations; heterotic models. *Genetics*. 1964;49:49–67
- Aronoff, Mark (1983). "A Decade of Morphology and Word Formation"
50. Bauer, L. (1 January 2006). "Word Formation". *Encyclopedia of Language & Linguistics* (Second Edition). Elsevier: 632–633
51. "Talking Glossary of Genetic Terms". *genome.gov*. 8 October 2017. Retrieved 8 October 2017.
52. "Genesis (γένεσις)". Henry George Liddell, Robert Scott, *A Greek-English Lexicon*. Perseus Digital Library, Tufts University. Archived from the original on 15 June 2010. Retrieved 20 February 2012
53. *The American Journal of Human Genetics*.
54. *Analysis of Genes and Genomes*" by Daniel L. Hartl and Elizabeth W. Jones.
55. Nida, E. 1949. *Morphology: The descriptive analysis of words*. Ann Arbor: Univ. of Michigan Press.
56. David S. Millar, Mark D. Lewis, Martin Horan, Vicky Newsway, Tammy E. Easter, John W. Gregory, Linda Fryklund, Martin Norin, Elizabeth C. Crowne, Sally, J. Davies, Phillip, Edwards
57. Edgar, R; Domrachev, M; Lash, AE (1 January 2002). "Gene Expression Omnibus"

58. Smith, J. (2018). The Role of Compound Words in Genetics Terminology. *Journal of Genetic Research*, 42(3), 127-135.