

RESEARCH ARTICLE

# Specific Features of Scientific Discourse in Soil Science: Accuracy, Monologicity and Informativeness

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## Abstract

Scientific discourse plays a crucial role in the development and dissemination of knowledge in soil science. As an interdisciplinary field that integrates chemistry, biology, physics, geography, and environmental studies, soil science requires a highly structured, precise, and informative mode of communication. This article examines the specific features of scientific discourse in soil science, with particular emphasis on accuracy, monologicity, and informativeness. These characteristics ensure the reliability of scientific knowledge, facilitate effective communication among researchers, and support the practical application of research results in agriculture, ecology, and environmental management. The paper analyzes linguistic, structural, and functional aspects of soil science discourse and highlights its importance in the global scientific community.

## KEY WORDS

Scientific discourse, soil science, accuracy, monologicity, informativeness, academic language.

## INTRODUCTION

Scientific discourse is a specialized form of communication used to produce, present, and transmit scientific knowledge. Each scientific discipline develops its own discourse patterns, shaped by its subject matter, research methods, and practical goals. Soil science, or pedology, is a fundamental branch of natural sciences that studies soil formation, composition, classification, fertility, and ecological functions. Given the complexity and practical importance of soil-related research, scientific discourse in this field must meet high standards of clarity, precision, and informativeness.

The effectiveness of soil science research largely depends on how accurately and systematically information is communicated. Scientific texts such as research articles, monographs, reports, and dissertations serve not only to describe experimental results but also to justify conclusions,

compare findings with existing knowledge, and propose practical recommendations. Therefore, understanding the specific features of scientific discourse in soil science is essential for both researchers and students.

This article aims to analyze the key characteristics of scientific discourse in soil science, focusing on three major features: accuracy, monologicity, and informativeness. These features are examined from linguistic and functional perspectives, illustrating how they contribute to the objectivity and reliability of scientific communication.

## Scientific Discourse as a Linguistic and Communicative Phenomenon

Scientific discourse can be defined as a system of verbal and written communication used in scientific activity. It is characterized by logical structure, terminological precision,

objectivity, and standardized forms of presentation. Unlike everyday or literary discourse, scientific discourse prioritizes factual information, rational argumentation, and reproducibility of results.

In soil science, scientific discourse reflects the empirical nature of research. Soil scientists rely on field observations, laboratory analyses, statistical data, and modeling results. These elements shape the discourse, requiring detailed descriptions of methods, conditions, and measurements. As a result, soil science texts are often dense, information-rich, and highly formal.

Another important aspect of scientific discourse is its audience. Scientific texts are primarily addressed to specialists who share a common background knowledge. This allows authors to use specialized terminology and complex sentence structures without extensive explanation. However, clarity and accuracy remain essential to avoid misinterpretation and ensure the validity of scientific conclusions.

### **Accuracy as a Core Feature of Soil Science Discourse**

#### **Concept of Accuracy in Scientific Communication**

Accuracy is one of the most fundamental characteristics of scientific discourse. It refers to the exact representation of facts, data, processes, and relationships. In soil science, accuracy is especially important because even minor errors in measurements or descriptions can lead to incorrect conclusions and ineffective practical applications.

Accuracy in scientific discourse is achieved through precise terminology, standardized units of measurement, and unambiguous sentence structures. Soil scientists use internationally accepted classifications, such as the USDA Soil Taxonomy or the World Reference Base for Soil Resources (WRB), to ensure consistency and comparability of research results.

#### **Terminological Precision**

Soil science discourse relies heavily on specialized terminology. Terms such as soil horizon, cation exchange capacity, soil texture, bulk density, and organic matter have strictly defined meanings. The accurate use of these terms is essential for conveying scientific information correctly.

Ambiguity and metaphorical language, which may be acceptable in literary texts, are avoided in scientific writing. Each term must correspond to a specific concept or measurement. For example, the term soil fertility is not used

loosely but is defined through measurable indicators such as nutrient availability, pH, and biological activity.

#### **Quantitative Accuracy**

Quantitative data are a central component of soil science research. Scientific discourse in this field includes numerical values, statistical analyses, tables, and graphs. Accuracy in presenting data involves correct calculations, appropriate statistical methods, and transparent reporting of experimental conditions.

Authors often use cautious language to maintain accuracy, employing expressions such as according to the results, within the observed range, or statistically significant. Such formulations reflect the scientific principle of uncertainty and prevent overgeneralization.

### **Monologicity of Scientific Discourse in Soil Science**

#### **Nature of Monologicity**

Monologicity refers to the predominantly one-directional nature of scientific discourse. Unlike everyday conversation, scientific texts are typically monologic: the author presents information in a structured and logical manner without direct interaction with the reader.

In soil science, monologicity is evident in research articles, dissertations, and technical reports. The author assumes the role of an expert who systematically explains research objectives, methods, results, and conclusions. The reader's role is to interpret and evaluate the information rather than engage in dialogue.

#### **Structural Organization**

Monologicity in soil science discourse is reinforced by standardized text structures. Most research articles follow the IMRAD format (Introduction, Methods, Results, and Discussion). This structure supports logical progression and coherence, allowing readers to follow the author's reasoning step by step.

Transitions between sections are carefully managed using logical connectors such as therefore, however, in contrast, and as a result. These elements guide the reader through the monologic narrative and reinforce the internal consistency of the text.

#### **Authorial Objectivity**

Another feature related to monologicity is the limited presence

of the author's personal voice. Soil science texts often use passive constructions and impersonal forms, such as samples were collected or the results indicate. This reduces subjectivity and emphasizes the objectivity of scientific findings.

However, modern scientific discourse increasingly allows cautious use of first-person pronouns (we analyzed, we observed), especially in collaborative research. Even in such cases, the monologic nature of the discourse remains dominant.

### **Informativeness in Soil Science Scientific Discourse**

#### **Definition of Informativeness**

Informativeness refers to the density and relevance of information presented in a scientific text. Soil science discourse is highly informative, as it aims to convey maximum scientific content within a limited space.

Each section of a soil science text serves a specific informational function. The introduction provides background and research objectives, the methods section details experimental procedures, the results section presents findings, and the discussion interprets the results in a broader scientific context.

#### **Use of Data and Evidence**

High informativeness is achieved through the extensive use of empirical data. Soil science texts include detailed descriptions of soil profiles, laboratory analyses, climate conditions, and land-use history. Visual elements such as tables, figures, and maps further enhance informativeness.

References to previous studies are another important source of information. By citing relevant literature, authors situate their research within the existing body of knowledge and demonstrate awareness of current scientific debates.

#### **Conciseness and Clarity**

Although soil science discourse is information-rich, it also values conciseness. Redundant explanations and irrelevant details are avoided. Sentences are often complex but carefully structured to convey multiple pieces of information efficiently.

Abbreviations and symbols are widely used, provided they are clearly defined. This practice increases informativeness while maintaining readability for the target audience.

### **Interaction of Accuracy, Monologicity, and Informativeness**

The three features discussed—accuracy, monologicity, and informativeness—are closely interconnected. Accuracy ensures the reliability of information, monologicity provides a coherent framework for presentation, and informativeness maximizes the scientific value of the text.

In soil science discourse, these features work together to create texts that are objective, systematic, and practically useful. For example, a soil classification study requires accurate measurements, a monologic presentation of methods and results, and a high level of informativeness to allow replication and comparison.

The balance between these features distinguishes scientific discourse from other types of communication and supports the cumulative nature of scientific knowledge.

### **Importance of Scientific Discourse in Soil Science**

Scientific discourse in soil science has significant practical implications. Research findings communicated through accurate and informative discourse influence agricultural practices, land management policies, and environmental protection strategies.

Moreover, soil science discourse contributes to interdisciplinary collaboration. Clear and standardized communication allows soil scientists to interact effectively with agronomists, ecologists, hydrologists, and policymakers.

In the context of global challenges such as climate change, land degradation, and food security, the role of scientific discourse in soil science becomes even more critical.

### **CONCLUSION**

Scientific discourse in soil science is characterized by accuracy, monologicity, and informativeness. These features reflect the empirical nature of the discipline and its reliance on precise data and systematic analysis. Accuracy ensures the correctness of scientific information, monologicity provides a coherent and logical structure, and informativeness maximizes the transmission of knowledge.

Understanding these characteristics is essential for effective scientific communication and professional development in soil science. By adhering to the principles of scientific discourse, researchers contribute to the advancement of knowledge and the sustainable management of soil resources.

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