

## Linguistic Differences and Similarities in the Abstracts of Botany and Literature

### Diferenças e Similaridades Linguísticas entre os Resumos da Botânica e da Literatura

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**Abstract:** *The study of specific languages, which are linked to certain areas of research, has become increasingly common and essential to the understanding of language as a whole. Therefore, this paper aims to study, analyze and compare existing language abstracts from two different fields of study: botany and literature. With this research, I intended to identify the linguistic similarities and differences between these two fields. The analysis of the results showed that the language used in the Literature abstracts have a more frequent use of adjectives, while the language used in the Botany have a more frequent use of nouns.*

**Key words:** *Abstracts, Botany, Literature.*

**Resumo:** *O estudo de linguagens específicas, que estão ligadas a certas áreas de pesquisa, tem se tornado cada vez mais comum e essencial para a compreensão da língua como um todo. Portanto, este artigo tem por objetivo estudar, analisar e comparar a linguagem existente em abstracts a partir de duas diferentes áreas de estudo: a Botânica e a Literatura. A pesquisa relatada neste artigo tem a intenção de identificar as semelhanças e as diferenças linguísticas entre essas duas áreas e classificá-las de acordo com a gramática. A análise dos resultados mostrou que, na linguagem utilizada nos abstracts de Literatura, há um frequente uso de adjetivos, enquanto que, na linguagem dos abstracts da Botânica, há um uso frequente de substantivos.*

**Palavras Chave:** *Abstracts, Botânica, Literatura.*

#### 1. Introduction:

Language is how we express everything in our lives, from the simplest things such as words to the most complicated as understanding an equation. Inside the language that we use every day, there are a large number of words or terms that are used to describe or specify determined areas of knowledge, such as terms related specifically to humanities or exact science, as, for example, the use of the term *logarithms* that is a very common term used in the exact sciences field of Mathematics.

To help in the understanding of how specific language works, it is important to study different types of fields and analyze the similarities and the differences between these contexts, so that we know how to use specific terms in each specific context.

For this research, I chose to study the specific language of the research abstracts contained in the articles. The abstracts have a particular structure of language that is used to differ them from other academic textual genres such as reviews and summaries. Also, it is possible to notice that abstracts are a type of genre that is largely used, being an obligatory part of any academic publication. Another important thing to be noticed is that, even if the article is written in Portuguese, the abstract is written in English, which affirms its importance.

For the analysis of this language, the creation of a corpus was required. A corpus linguistics approach is important to the development of this kind of research. According to Biber at all (1998), corpus-based methods can be used to study a large variety of topics within linguistics. Thus, a corpus can be formed from grammatical features, individual words, structure features, expressions and so on. A corpus of abstracts can be considered a special purpose corpus:

That is what we choose to call a special purpose corpus, a corpus whose composition is determined by the precise purpose for which it is to be used. (...) Restrictions relating to genre, author, period or other criteria may be imposed depending on the purpose for which the corpus is intended. (Pearson, 1998, p.48)

In the case of this paper, the fields of knowledge chosen for the analysis were the Literature field and the Botany field, to do the analysis of the linguistic differences and similarities between these specific types of abstracts. In these fields, you can find terms like “barb”, which specify characteristics of the plants in Botany, and “literacy”, which specify texts and literary books and an educational approach in Literature, as examples of the specific language in each field. Both fields were chosen because of the distance between their themes and methods of research.

## **2. Definition of Abstract**

According to Glider and Morgan (2000, p.428), an abstract provides a summary of the text, introducing the paper. “An abstract describes briefly the purpose, design, and results (in a sentence or two) of the study. Like the title, the abstract is also a selling point for the paper”. It is important to highlight that abstracts do not always have only a sentence or two. Some abstracts can have up to 10 sentences or lines, depending on the informativeness level of the abstract or the rules imposed by the journal to which the article will be submitted.

Another definition for abstract comes from Dayrell (2010, p.135) “ The abstract texts are highly developed, dense and at the same time , compact in which the authors should present the main arguments of the paper, as well as attract readers’ attention and convince them to read the full article” (Gledhill, 2005 apud Dayrell 2011).

Abstracts are also considered a genre being studied as such in many studies on language, and as text material for classes. Castro (2010) used ideas of several authors to describe textual genre:

“From Martin (2000), Swales (1990), Bath (2001) Bronckart (1997), and Dolz and Schneuwly (1998), genres are defined according to structure, lexical-grammatical elements, and, above all, the purpose of such communication. Thus, this process is understood as social and dynamic data in textual space, discourse, strategic and socio-cultural.” (Castro, 2010, p. 556)<sup>1</sup>

Bakhtin (2010) also defines genre, expanding its concepts beyond Literature and classifying them as relatively stable statements, used for all areas of human activity. He divided the statements in two groups: primary and secondary. The primary group covers simple texts such as recipes, letters and informal texts, while the secondary group covers more complex texts such as articles and academic texts. Abstracts can be considered as belonging to the secondary group, because the texts are more complex and synthetic, covering the religious, artistic and scientific spheres.

Silva (2008) also defined abstracts. For him, there are two kinds of abstracts, the informative and the descriptive. In descriptive abstracts, there is a general presentation of the theme of the article, while informative abstracts present details about the whole article.

Thus, an abstract is one of the most important parts of the article because it allows us to have a general idea of the article, which largely facilitates the life of researches and students during research. Abstracts are an important tool which helps readers to know if the article is useful to their purposes.

### **3. Methodology**

The corpus used to develop this research is composed by abstracts of scientific articles of the Literature and the Botany fields of study. These texts were collected in Lume/UFRGS database, being each one from different times of publication. At all, this corpus includes 25 abstracts from each field, totalizing 4,110 words from Botany and 2,796 from Literature.

To do the analysis of this corpus, the Antconc computer software was used, to which the texts were uploaded to get the information about the frequency of terms. The results provided us

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<sup>1</sup> Translated by the author from the original “Para Martin (2000), Swales (1990), Bath (2001) Bronckart (1997), e Dolz and Schneuwly (1998), os gêneros são definidos de acordo com a estrutura, elementos lexicais e gramaticais e, acima de todos, o propósito da comunicação. Portanto, este processo é entendido como uma dinâmica de dados sociais dentro do espaço textual, do discurso e das estratégias sócio-culturais.

with an idea of the linguistic similarities and differences between the Literature and the Botany fields.

The identification of the recurrent terms in each field and the most frequent terms in the abstracts allowed us to analyze the language structure of the texts.

After uploading the texts in the Antconc software, I obtained two frequency lists: one from Botany and the other from Literature. Each list contains the 15 most frequent terms as shown in the tables 1 and 2:

*Table 1: Botany Frequency List*

<b>Word</b>	<b>Number of Occurrences</b>
Were	46
Was	34
Are	23
Brazil	18
State	13
Barb	12
Study	11
Grass	10
Areas	09
Light	09
Plant	09
Survey	09
Genus	08
Pollen	08
Genus	08
Pollen	08

*Table 2: Literature Frequency List*

<b>Word</b>	<b>Number of Occurrences</b>
Is	22
Literature	15
Was	15
Literary	13
Article	11

Are	09
Brazilian	09
Social	09
Book	08
Century	07
Historical	07
Patients	07
Text	06
Aspects	05
Human	05

From these tables, it is possible to analyze linguistic differences and similarities that exist between the abstracts of the Botany and the Literature fields. To get the results, these two lists were compared and analyzed considering the content words and the forms of the verb “to be”. I decided to analyze the existent forms of verb “to be” because of its large recurrence in both fields, being among the most used words.

As linguistic similarities, I found the use of the verb “to be” in its simple present and simple past forms “are” and “was”, as auxiliary verbs combined with action verbs in the simple past, like these examples:

#### *Botany*

(...) *mogolensis* Feres *are described* and illustrated.

(...) within grazing exclusion cage *was collected* and sorted into species groups.

#### *Literature*

Such stories *are based* on what the narrators remember (...).

Sentinel lymph node investigation *was performed* on three patients.

Also, this kind of similarities concerns only a part of the grammatical structure contained in a text. Other significant point to be emphasized is the large use of the third person form of the simple present of the verb “to be” “is”. This form of the verb “to be” is recommended by the ABNT NBR 6028/2003 rules to the creation of abstracts in academic papers. The specific rule about this structure stated that “The verb must be used in its passive voice and in the third person of singular” (2003).<sup>2</sup>

<sup>2</sup> Translated by the author from the original “O verbo deve ser utilizado em sua voz passiva e na terceira pessoa do singular”.

Regarding the differences, in the Literature abstracts a more frequent use of adjectives was found when compared to botany abstracts. For example, the word “Brazil” was used 18 times in Botany abstracts, while the word “Brazilian” was used nine times in the Literature abstracts. From the 18 times that the noun “Brazil” appears, 11 times are related to adjectives such as “Southern” and “State”, as in the following sentences:

- a) The occurrence of chilling temperatures in other countries is compared to the situation in *Southern Brazil*.
- b) Carnivore mammals and their relation with habitat diversity in Aparados da Serra National Park, *southern Brazil*.
- c) (The subtribe *Cranichidinae* Lindl. (Orchidaceae) in the *Paraná State, Brazil*).
- d) The park has 10,250 ha and is considered a biodiversity core area of the Atlantic Forest Biosphere Reserve in the *Rio Grande do Sul State, Brazil*.
- e) In a survey of the species pertaining to genera of large pameliae occurring in the coastal areas of the center-south coast of *São Paulo State, Brazil*.

From the nine times that the adjective “Brazilian” appears, six times are related to nouns such as “Literature”, “Nationality”, “Mentality”, “Civilization” and “Writer”, as in the following sentences:

- a) This article presents a survey about the main aspects and authors involved in the discussions about folklore and its importance for *Brazilian nationality* in literature of XIXth century.
- b) This paper examines the role of the *Brazilian writer* Monteiro Lobato in the growth of the book industry in Brazil, concentrating on his translations of childrens literature.
- c) This article intends to observe possible convergences between the sociological studies by Oliveira Vianna and regionalism in *Brazilian literature* from the last years of the 19th century to the first decades of the 20th.
- d) Focusing on his sociological works published until the 1930's and the fictional literature written by Afonso Arinos and Godofredo Rangel, both born in Minas Gerais, we realize that they share ideas like the rural origin of *Brazilian mentality* and the praise of history as a way to establish the superiority of traditional elites, considering the attention given by Vianna to cultural issues.
- e) Those metamorphoses the characters go through intend to present an origin to the elements of the fauna, the flora and/or the *Brazilian civilization*, the heavenly bodies, stars and the objects known by the people.

The analysis of the frequency list also showed a more frequent use of specifying nouns in Botany, like, for example, “plant”, “pollen” and “barb”, which are nouns used specifically to describe procedures and materials of this field. In Literature, there is a more frequent use of

qualifying and not specifying adjectives like, for example, “historical”, “social” and “human”, which are adjectives that can be used in other fields, and are not restricted only to Literature.

Another point that must be addressed is the difference in sentence extension. Botany sentences are shorter and have mostly only one simple period. On the other hand, Literature sentences are longer and have mostly two or three periods composed by coordination and subordination, as in examples “a” and “d”.

#### **4. Analysis**

The objective of this article was to investigate the linguistic similarities and differences between Botany and Literature abstracts articles. The Botany field describes more accurate procedures and physical materials such as plants, while the field of literature deals with more abstract topics such as feelings.

Botany abstracts are mostly shorter than Literature abstracts because of the fact that sentences in the Botany field are shorter than the ones in the Literature field. In the corpus examples, it was verified that in the Botany field there are sentences of one period, while in the Literature one there are sentences with two or more periods, which turns sentences longer. As it was seen, most of Botany sentences have one line or less, while Literature sentences have three or more lines, becoming almost a paragraph.

Also, both fields of study have a similar descriptive language structure, so it is correct to affirm that they can be classified as descriptive abstracts, which are abstracts that only indicate the main objectives of the article, describing their methodology, the results and the conclusions. Another point that demonstrates this language structure is the use of one paragraph only and, depending on the objective, the use of active voice in the third person, as recommended by the ABNT.

#### **5. Final Considerations**

The use of corpora in this study was very important because it helped us to understand the language in this specific context and its specificities. It is important to emphasize this study concerns a small corpus, what should be considered by the reader when interpreting the results because it is related a specific kind of language.

In summary, this study showed me that no matter what field of study, the language used in abstracts is standard, being distinguished in a few points that are usually attached to the line of research considered.

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