Scientific discourse in the liberal arts. From gibberish to scientific courtesy

El discurso científico en las artes liberales. De los galimatías a la cortesía científica

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SUMMARY

This work focuses on the scientific discourse as a basis for the dissemination, acceptance and discussion of research in the liberal arts. It analyzes the characteristics, structures as well as common errors in the writing of a scientific text to focus the analysis on the rarefied language, understood as acts of power that leads to the rejection of the researcher's work by turning communication into a barrier instead of a necessary bridge to the knowledge of science.

It assesses how gibberish not only hinders communication between academics, but also excludes a wider audience, thereby undermining the ideals of inclusion and accessibility that liberal arts seek to promote.

The methodology applied in this work included a descriptive and qualitative study based on theories of language and discursive structures of scientific discourses. It concludes with the development of scientific courtesy where, without renouncing a correct construction of the discourse, an adequate understanding is achieved by the community to which the research is directed.

Keywords: Scientific language, liberal arts, gibberish, scientific courtesy, communication, educommunication.

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1. Introduction

Science has as its mission to improve humanity, or in the words of Diéguez (2019), "discover the truth about the universe." The expression of a scientist's work focuses on new knowledge, which when properly disseminated positively impact the progress of humanity.

Making science and disseminating science are necessary complements "science is a collective work that necessarily requires communicative acts" (Carmona Sandoval, 2013). The success of the scientist is behind the acceptance of his theory until the moment of its falsification (Popper, 2008), hence the importance of the proper construction of the scientific discourse, as well as its dissemination. The contribution must be understandable by the audiences towards which the discourse is oriented, entangling it through narrative tricks or language games is an unintelligent and unsuccessful resource.

The dictionary of the Royal Spanish Academy defines language as "the ability of the human being to express and communicate with others through articulated sound or other sign systems" (www.rae.es), "language allows human beings to communicate, express their ideas, feelings and thoughts. It is an activity of human beings" (Pasquali, 1980).

The relationship between language and communication is direct, "since Saussure, the essential purpose of language is accepted as dogma: communication" (Sancho Sáez, Alfonso, 1976). "People communicate for different reasons: sometimes, they only intend to transmit information objectively; in others, they express feelings or opinions, or they intend to influence others" (Arroyo & Berlato, 2012).

Language is the vehicle for the construction of scientific discourse and is in the words of Wittgenstein (2017), "the expression of thought and at the same time, a representation of reality".

Blasco (1971), analyzing Ludwig Wittgenstein, indicates:

Wittgenstein conceives of language as a game whose pieces are words; this conception of language leads us in two directions, the first leads us to assume that language is an activity subject to rules always valid for a group, therefore, these rules cannot be classified as a substantive. The second leads us to construct simple languages that respond to a defined pragmatic situation, that is, to language games, which are models in a double sense, and which emphasize the mechanisms of linguistic behavior therefore they avoid the substantiation of subjective internal processes as a correlation of linguistic activity. (Blasco 1971. pp 60–61)

Hence the relevance of a clear language that allows the approach to the proper and deep understanding of the researcher's approach, language must be promoter rather than barrier in the promotion of knowledge and competences. Communication in the liberal arts should be characterized by aspects such as clarity, critical thinking, open dialog, interdisciplinarity, as well as empathy, creativity and personal expression.

The scientific language

Scientific language is a language modality of specialized terminologies, characterized by its formality and use of signs, linguistics and

non-lingüistic that, "are not ho-homogeneous, but present an important internal variation, both in the aspects related to their different registers, and in their formal levels" (Gómez de Enterría, 1998). Authors such as Varona (2009) argue that "The purpose of a scientific text is to inform", others such as Llácer Llorca & Ballesteros Roselló (2012), argue that "certain sciences are in themselves languages, for example logic or mathematics".

While some types of discourses, such as political, literary, religious or poetic, among others, seek to convey emotions to the masses using passionate, conciliatory or destructive languages, scientific discourse is of elites, absent of subjectivism, informative and direct; it is usually flat, discarding emotions and offering results. It is in the words of Criado Pérez (1984), a formalized language "that must use a cultured and exact language".

For this author, the modification of natural language to scientific language is concretized in two aspects:

A. Incorporation of a specific term-logical vocabulary, formed by new terms, or taken from natural language and reinterpreted, which must designate in-equivocally the elements of the theory, forming its specific context woven from semantic connections, both lexical and propositional.
B. Limitation on the use of referential or argumental functions to the exclusion of any other linguistic function related to the subjectivism of the sender or interpreter." (Servant Perez. 1984. pp. 18)

The scientific discourse

"Speaking of discourse is above all talking about a social practice, a form of action between people that is articulated from contextualized linguistic use" (Calsamiglia and Tuson, 2001). Ramírez Peña (2007), defines speech as "any expression of relatively autonomous language in its meaning, recognized as part of a process of construction of meaning due to its relationship with someone who is a producer, with a pre-established recipient and with a referred knowledge".

"The scientific-technical discourse is that used by science and technology to express new discoveries, theories, hypotheses, studies, analysis and exposure of techniques. Having as a basic objective emitting this type of information, it is characterized by reporting an immediate material benefit, away from the poetic function and the expression of affectivity" (Batista, Arrieta, and Meza, 2007).

"The diffusion of scientific writing translates into different textual genres, such as manuals, scientific texts and research articles" (Parodi, 2008). In short, "they are contributions of the researchers in which the findings that have been made in their studies are communicated" (Castillo Esparcia, 2011).

On the other way, scientific discourse has a significant place in the realm of liberal arts. It has its position framed in the trivium, "also called sermocination arts that comprise knowledge of grammar, rhetoric and dialectics" (Encyclopedia Herder, s/f). It is not limited only to the presentation of scientific facts or theories, it involves the discussion of philosophical, ethical, historical, literary, and artistic problems, among others, allowing a deeper understanding of the human and it environment with the aim of forming individuals who are thoughtful thinkers, engaged citizens and active contributors to society. Through the liberal arts, the nature of science, as well as science in its relationship to society and ethics in scientific research are critically explored, fostering the depth of the necessary understanding of scientific discourses.

Scientific discourse is distinct from discourse of scientific dissemination.

"The objective of the disseminator cannot coincide with that of the scientist because the work of the former consists of a recontextualization of texts that forces him to select, adapt, reorient and explain. It has no value, then, to measure the disclosure with the parameters of objectivity that are used in science, because the disclosure incorporates narrative structures and rhetorical figures of different order that include from arguments of novels to collective imaginaries and even myths. And in this regard, disseminators should be considered more creators than translators" (Galán Rodríguez, 2003, pp 146).

Each theory has its own language

Every theory has its language. This is denominated by Calsamiglia and Tuson (2001), as "linguistic-discursive heterogeneity". The editorial style in an exact science such as mathematics is not the same as that of another social science such as psychology, not only in the use of specialized lexicon, but in the approach to the subject or the expression in terms of the conception of ideas.

"Each theory comes with a backpack of concepts that allow us from that theory to understand the environment. From constructivism, from connectivism or from behaviorism. Everyone generates their own unique language, but with the risk of being in a Tower of Babel speaking different languages, but without having the possibility of understanding us" (Del Valle, 2020).

However, the language used within each of these areas of science must allow a correct understanding between peers, "the language through which technical and scientific knowledge is transmitted is universal, in the same way that science and technology are also" (Gómez de Enterría, 1998).

Hence the importance of the development of the semantic field. Understanding semantics as, "the discipline that studies the meaning of linguistic units and their combinations". (www.rae.es).

The semantic field or cohesive string is a set of words or significant elements that share one or several traits in their meaning. Its correct establishment avoids linguistic confusion and allows a correct delimitation of the scientific theory.

"The semantic field of a discourse can be analyzed through analytic semantics, schematic semantics or global semantics that correspond to the study of the mood, sentence and text respectively. For the analysis of scientific-technical discourse, global semantics will be used taking into consideration the three challenging concepts that make up a scientific-technical text, namely: the nature of the paragraph, the rhetorical techniques commonly used in scientific-technical discourse and the re-theoretical functions found in this type of discourse" (Batista, Arrieta and Meza, 2005, pp 5).

Scientific language can mutate in time

The construction of scientific discourse is permanently impacted by the political situation, social uses -such as fashions or behavior in society-, or religions- among other aspects, and all can have consequences on the idiomatic use, used in scientific construction. The wars are a clear example of variations and even mutations in scientific terminology, and in the use of language in science, Yoris Villasana (2020), indicates how in the Nazi era, the hierarchs of said ideology, shielding themselves behind a pseudo scientism impregnated with racism, consciously corrupted language with the purpose of indoctrinating the citizenry¨.

This author recalls, quoting Victor Kemplerer, in his work entitled The Language of the Third Reich, that:

"The language of the victorious is not spoken with impunity. That language is breathed and lived." In that detailed narrative, he comments that Jewish doctors were renamed Krankenbehandler – assistants to the sick –

"By naming them that way, they were stripped of their investiture to practice the profession." (Villasana, 2020).

In support of the mutation of the scientific language over time, Kuhn (1977), indicates that the lessons he learned from reading Aristotle - later guided him to the reading of scientists such as Boyle and Newton, Lavoisier and Dalton or Boltzmann and Planck. "Simply put, these lessons are two. The first is that there are many ways to read a text and that the most accessible to the modern researcher are often improper when applied to the past".

Discursive structures

"The predominant function of a scientific text is the informative or referential one and the most used forms of elocution are the exposition and the description. It is also used the argument as a form of predominant rhetorical organization, and the enumeration, the comparison by analogy or by contrast and the exemplification as secondary forms that allow the defense or refutation of the thesis " (Dominguez Garcia, 2009).

"The most outstanding characteristics can be summarized in the following: Constant presence of the representative function of language with a considerable contribution of the definitive paradigms; very remarkable presence of the meta-linguistic function that is introduced by processes of reformulation and vulgarization and rhetorical forms such as exposure and description; connexion of statements that favor the exposure of logical development; rhetorical techniques such as narration, description, or argumentation that highlight the referential function" (Gómez de Enterría, 1998).

This same author also adds that "as for discursive structures, the most common in the scientific-technical texts are the following: the definition in all possible variants, the declaration, demonstration, the exposition of results, the description and the characterization. Each of the discursive forms used in the various areas of specialty constitutes a rich material to work in the classroom each one of the linguistical and pragmatic aspects of the proposed field".

Domínguez García (2009), proposes six basic rules that must be observed in the dissemination of scientific discourses:

1. Use the right lexicon by accurately and precise handling the technicalities of the subject matter in which you work.
2. If a technicality had several meanings, it should define what meaning that word should be used, avoiding errors of interpretation.
3. As the objective of a scientific text is the faithful and accurate transmission of information of this character, everything that benefits from the clarity of the text – repetition of words, schematics, etc. – is positive and everything that hinders its understanding – abundance of incises, excessively long sentences, inadequate lexicon, fragmentation of information, etc. – must be avoided.
4. There are several ways in which an author refers to himself throughout the work:
5. using the first person of the singular, using the first person of the plural (this form, called the modesty plural, is employed even when the author is a single person), using the third person but identifying himself, or using impersonal forms or reflections.
6. The author of a scientific text must comply with the ethical standards that this requires, among which are: modesty, respect, impartiality, objectivity and sincerity. All are reflected in language.

7. It is essential that the different paragraphs that make up a scientific text keep the necessary coherence with each other, therefore the reader can follow the different steps of a reasoning without getting lost and correctly relate some phenomena with others.

Llácer Llorca and Ballesteros (2012), add to the that "non-linguistic resources such as graphs, formulas, mathematical demonstrations and conventional symbols contribute to the verifiability of facts, in addition to conferring on the texts a patina of objectivity and universality".

Connotation and denotation in scientific language

We have seen how the literature related to the development of scientific discourses focuses its recommendations on aspects such as objectivity, a topic of relevance for a specialized reader, Criado Pérez (1984), shows that "scientific discourse must be formulated in a language that must be independent of the subjective conditions of the issuer and the interpreter, and that can overcome the linguistic barriers of national languages".

The same author states:

"The objectivity of scientific knowledge requires that all kinds of subjective connotations (emotional, appellative, ideological...) be reduced to a minimum, or, better yet, eliminated from its means of expression. The only functions validly allowed in the scientific language are the referential (descriptive and informative) and the argumental (deductive and inferential) (Criado Pérez, 1984, p. 12) Jo-fré (2000) contributes, indicating that "in the usual theoretical treatment the denotation is defined by its literality, while the connotation consists of the symbolic value".

How to separate the connotation from the denotation in the construction of a scientific discourse, how to separate the meaning from the signifier, in the end the scientist is a human being full of emotions, and they motivate and guide his work.

"We say that a term connotes something when in addition to its own or specific meaning (its denotation) it carries other added meanings, by implication or by association. It is the secondary sense of a sign, term, phrase or speech." (Centeno Prieto, s/f).

It is known that it is understood by denotative value something very close to the lexical value, signaling, the direct reference of the word to the thing. As opposed to the denotative, the connotative is what each word suggests insofar as the common human experience attaches an evocative meaning to it. (Sancho Sáez, 1976, p.17) "

We see how the councils in this topic cannot be constituted in "tabula rasa" (Locke, 2005), nor in chastity belts for the dissemination of science. There is a scientific style that is mediatized by two aspects that cannot be left out of the equation when writing science, are two elements who together, give nuances to the discursive expression:

The first are the characteristics, culture, and political formation of the author that wear one of the coordinate axes in the scientific style. "Every theory always comes with an interlaced ideology. They are not selfless, they come with a battalion of people, or of interests behind, as pieces on a chessboard, which are used according to the interests of the moment." (Del Valle, 2020).

Other authors support this thesis, such as Luengo (2016) who indicates that, "language is never innocuous, it presents an evident intentionality, for that reason, it is essential to question it from the root", or Garzón (2004) who contributes that "words are never innocent or crystalline, they constitute a complex reality".

From the other side, we must distinguish in the construction of a theory between the termlogy that supports the scientific development and the style under which this knowledge is divulged, style considered by Vivaldi (2000), as:

"The proper way that each one must express his thought through writing or through the word. Style is the effort through which intelligence and imagination find the nuances, the relationships of expressions and images, in ideas and in words or in the relations between one and the other" (Vivaldi, 2000).

Common errors in the drafting of a scientist text

Domínguez García (2009), mentions ten errors that are made when writing scientific texts that summarize them in: topic of work too broad, imprecise or scarcely defined; lack of correspondence between the general title of the work and the content; incoherence in the treatment of the content; an introduction is an isolated dissertation, closed on itself, without relation to the data that are later exposed; improper use of the consulted sources; lack of harmony between the various parts of the work; theoretical appreciation of the data that lack the analysis of the statistical charts; false expectation of the work presented by its non-correspondence with the objective, the declared results or by what was raised in the introduction; confusion of the opinions and ideological positions or scientific conclusions of the author with the knowledge he exposes or declares, and finally; inadequate conclusions. This same author makes similar reference to linguistic errors and divides them between semantic errors such as redundancies and imprints; syntactic errors such as the incorrect use of person or grammatical links; and pragmatic errors, typical of an inadequate structure of scientific texts.

Scientific gibberish

In this part of the work, we will refer with special attention to the rarefied language used incorrectly in scientific discourse. That is when the third element comes into play, which is the obscuration of ideas through the unnecessary use of gibberish. It's when I the scientific community loses the appreciation for the work.

It is necessary to refer to common mistakes in the construction of discourse that supports a scientific theory. As we have seen, the catalog of errors in the construction of a scientific discourse can be very broad. It goes from the inadvertent but inadequate use of language to the incorrect use, but consciously. In this last group we speak of authors who move from the power of language to the language of power and who start from the premise, in the words of Metzeltin (2003), that "a power can be exercised only by those who have the ability to discourse and mediate their speeches." This type of creators of science, do not focus on the difficult art of making themselves understood correctly, without hesitation or half measures, but on a use of a business language, incoherent and inopportune, which sometimes involves insecurities, complexes and even errors in the construction of scientific theory.

Naím (1989), defines them as:

"Serious academic texts in which depth and intellectual rigor are confused with the pomposity of language; where instead of helping the reader to understand, it is about impressing with the use of specialized terms of obscure or unknown meaning, where it is assumed that it is not possible to present ideas in a rigorous, novel and profound way without forcing those who have an interest in understanding the ideas of the author, to read each line several times" (Naím, 1989, p. 15).

There is no exact instrument or method to measure the understanding of the discourses by the entire scientific community, authors of enormous importance as Martin Heidegger have been accused by other cultists of science, who allege the unnecessary use of a complicated language. Moreno Claros (2016), indicates that: "Being and Time was read as an anthropology, as the expressionist description of the human being facing the absurd. Every new reader understood this in his way , only Heidegger

claimed that no one had understood." In the same line of thinking, Mario Bunge, Prince of Asturias Award winner, crudely expressed in an interview for the Spanish newspaper El País, that Heidegger's phrases "are the self of a schizophrenic. It's called *schizofacia*. It is a disorder typical of schizophrenics" (Vidal Folch, 2008).

When referring to philosophy as science, Antonio Diéguez (2019), an exponent of scientific realism, indicates:

One of the problems that some philosophers of traditionalist education have is to remain anchored in the idea that thought is so complex that it requires a language that is also complex. They believe that when we talk about "concepts" we are capturing the essence of something that cannot be captured without an abstract, very sophisticated intelligence (Diéguez, 2019, p.2).

The meaning seems to depend on the observer, "a chart with stock market values can be a gibberish for a layman in the matter and, at the same time, a source of great value for an investor" (Denning & Bell, 2013). However, there is a fair place between the understanding by an elite group that tends to the approach, or the unnecessary confusion that produces the incorrect construction of the scientific discourse.

Gibberish is considered by the dictionary of the Royal Spanish Academy as "a speech or writing muddled" (www.rae.es). This institution defines it in more detail as "a dark language due to the impropriety of the phrase or the confusion of ideas, synonymous with confusion, disorder or mess". Gibberish is considered by Wagensberg (cited by Pedreira Massa, 2020), as "minor vices destined to scratch time for reflection". Scientific gibberish can be a product of ignorance of language. Domínguez García (2009), speaks of the concern for the de-efficient written communication skills in professionals of different specialties, including pedagogical. In this regards, Pérez Porto and Gardey (2018), who consider gibberish a linguistic debauchery, adding that "curiously, both one extreme and the other, that is, scholarship and illiteracy, tend to lead to gibberish more often than at a moderate level."

How far does an author's grammatical culture need to go in science? To what extent does the concentration of knowledge in specific areas limit the expression and consequently the diffusion of scientific development? Wittgestein, in his "logical – philosophic treaty" (2017), expressed that, "the limits of a person's language are equal to the limits of his world", the author metaphorically compared you to language with a cage against whose bars we crash and the bumps we cause mark the value that this task has.

Scientific gibberish can also be the result of a significant burden of egomania hidden behind as of the rarefied language. People who express scientific knowledge are usually privileged or intellectually cultivated, people who understand the value of their personal brand in the dissemination of their work. Many of them hide an exercise of the ego behind as image of naiveté, of irreverence, or of authority but others do it through an unnecessary complication of their ideas. We speak of authors under the premise of Spinoza (s/f) who expresses that "everything exquisite is as difficult as it is rare". "It should not be surprising that the specialized scientific language is, on rare occasions, used by some – those who, due to the fact of being scientists, consider themselves part of an intellectual elite – as a kind of communicative wall, which keeps them at a "prudential" distance from the profane and differentiates them from the rest of the citizens" (Llácer and Ballesteros, 2012, p.1).

Scientific gibberish can occur in terms of the destruction of tenses, the unnecessary extortion of sentences, verbiage as a resource, or the use of unnecessary linguistic resources or research. Not to be confused á the necessary use of a technical lexicon required

for the transmission of ideas to the community of expert peers who require the use of this terminology.

The risks of gibberish are three: That the reader loses interest in the text, not fully understanding it, or the effort to understand it, there is a great difference between the time that must be invested in deciphering, against the time to delve into the idea proposed by the scientist.

That the scientific proposal loses series, because the reader thinks that the author has written incoherently for not being able to sustain his theory, or because he has entangled the text to express an idea that is not of him.

That it may lead to erroneous practices, or as the Bible indicates "and if the trumpet sound uncertain, who shall prepare for battle" (1 Corinthians: 14).

Conclusion

Scientific courtesy

Consequently, scientific courtesy is proposed as a necessary methodology that allows the full understanding of a scientific theory. Scientific courtesy does not renounce the use of a cultured and specialized language, but it implies the obligation to follow mechanisms of construction of the scientific discourse to give it adequate form and on the other hand avoids the linguistic excesses that, although they give a figure of authority to the author, the authors gets separated from the final goal of their work. "Discourse can be complex and heterogeneous but not chaotic" (Calsamiglia and Tuson, 2001). The hardening of language as a barrier to protection, is a wrong path that only threatens the work of the researcher himself.

But what is courtesy? The online dictionary of the Royal Spanish Academy defines it as a "demonstration or act with which one manifests the attention, respect or affection that someone has for another person" (www.rae.es).

In support of this definition Eelen, cited by Álvarez Muro (2013), indicates that most theories about courtesy, focus on the fact that courtesy seeks to avoid the conflict and at the same time is a mean of social indexation, because the courteous behavior of a person would depend on his social position and his social relationship with the listener. The theory on courtesy comprises, on the one hand, an action and, on the other, a conceptual side (Álvarez Muro, 2013. p. 1).

Scientific courtesy must be an initiative of the author or in the words of Calsamiglia and Tusón (2001), a "norm of social behavior that also affects the choice of linguistic forms". On the other hand, it is an insurance policy that avoids an ambiguous or erroneous interpretation of the researcher's proposal. "Scientific texts must observe the essentially epistemological qualities of science: universality, objectivity, neutrality (or impartiality) and verifiability" (Llácer Llorca and Ballesteros, 2012); but at the same time avoid the rejections produced by the inappropriate use of language, opening the doors of the understanding of the audiences to which it is addressed while motivating reflection and its dissemination. It is a term that leads to a full understanding by the scientific community that requires the use, analysis, application and discussion of the researcher's proposal.

When proposing a term like this, we should emphasize that there are no measuring instruments for courtesy, let alone in a field called specialization.

á Again Álvarez Muro (2013), indicates that courtesy is built on interaction, so it is conceived as dynamic; it can even be said that the participants, as issuers, are measuring their actions to appear courteous and, as receptors, are evaluating the actions of their interlocutors.

In any case, it is to avoid on the one hand the use of ornaments or ornaments with unnecessary rhetorical to language and on the the correct use of scientific terminology. However, simplifying the language is not the same as vulgarizing it, or sparing linguistic resources to extend its acceptance. It is synonymous with scientific gentleness to write in depth, but with simplicity, so that there is a

multiplication of understanding and consequently acceptance of scientific theory. This is much more laborious and complex than extending, and complicating, a scientific discourse where a researcher tries to reach his or her audiences effectively. In the words of Garzón (2004), "to restore to the language its moral musculature, its original purity, its condition of supreme gift of man, to rehabilitate the meaning and truth of words must be our commitment".

Simplicity is an abstract noun that derives from the quality of simple, plain. "A simple text is one that does not have complications in its understanding. It is clear and unambiguous" (de-conceptions. com); however, simplicity is not the same as simplicity, much less synonymous with scarcity in scientific approaches. á The terminology that accompanies a scientific theory can be strange and even intelligible in the eyes of non-specialized readers, "the scientific language seems opaque, particularly to social groups outside its use, all this contributes to create a barrier that, in practice, tends to isolate the scientific community from the rest of society" (Llácer and Ballesteros, 2012).

Simple language thrills, excites, inspires. The Bible indicates that Jesus expressed himself in such a way that the poor, the illiterate and the miserable understood him and remained hopeful.

Philosophers such as Ortega and Gasset (1957), express themselves with respect to simplicity, stating: "I have always believed that clarity is the courtesy of the philosopher, and, in addition, this discipline of ours puts its honor today more than ever in being open and porous to all minds, unlike the particular sciences, which every day more rigorously interpose between the treasure of their discoveries and the curiosity of the profane the trembling dragon of their Hermetic terminology"; however, in antithesis to this line of thought of Ortega y Gasset, José Gaos, the first translator of Being and Time into Spanish, ruled just the opposite pointing out that "clarity is the smear of the philosopher" (Gaos, 1982).

When talking about simplicity, it is necessary to analyze conciseness

"Conciseness results from using only indispensable, fair and meaningful words to express what is meant. Conciseness is the enemy of verbiage, redundancy, expressive dithering, because all this obstructs the channels of communication, and the message does not arrive properly -sometimes- or even reach- the recipient or recipient" (Vivaldi, 2000).

This same author indicates that "neither does conciseness mean that it is necessary to cut the wings to fantasy or imagination, renouncing the color or magic of words. "In a scientific text we have to find a balance between expressing an idea concisely and transmitting information clearly and effectively" (Claros Díaz, 2017). "The simple is sublime, and requires extra effort, as well as a denoted intelligence. In the language of the sciences... more means a transparent word that mutters a thousand entangled" (Ingenieros, 2003).

We must defend the technicality of scientific language, provided that the development of the theory is stylishly but clearly drafted. Obscuring language is not a linguistic technique that can be acceptable in the scientific field. Science must be disseminated so that it can be verified, contrasted, expanded, or in Popperian terms, falsified, and this is only possible when the theory's wording leaves no room for language á that can lend itself to á of an understanding.

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