



A qualitative and quantitative analysis of public health
discourse in Portuguese and Chinese

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1. Background and Significance of the Study

- It's essential for improving scientific literacy and helping the public to understand complex health and nutrition concepts.
- The concept of Languages for Special Purposes (LSP) can be seen in both horizontal and vertical models.
- The goal of popularising discourse is to make scientific information more accessible by adapting language to different levels of understanding.
- We studied popular science texts in these two languages with the aim of exploring the linguistic strategies and interpretations used when communicating scientific information to the general public.

Scientific literacy is “the ability to talk, read and write coherently in a non-technical but meaningful context” (Shamos , 1995, p. 87).

“Scientific literacy refers to an individual's ability to engage in questions about science and understand scientific ideas, as a reflective citizen, being able to participate in a rational discourse about science and technology” (PISA, 2015, p. 5).

2. Internal and External Scientific Discourse

Category	Target Audience	Language Features	Purpose
Internal scientific discourse	Experts, academics, professionals	Uses complex technical terms, requires in-depth expertise	To engage in specialised discussion and knowledge exchange within the academic community
External scientific discourse	General public, non-specialists, experts from other fields	Uses simplified language, avoids excessive technical details	To help non-experts understand complex scientific concepts and popularise knowledge

Adopted by Brand (2008, pp. 27-28)

3. Explanation of Research Approach

A comparable corpus contains “components that are collected using the same sampling method, e.g. the same proportions of the texts of the same genres in the same domains in a range of different languages in the same sampling period” (McEnery & Hardie, 2012, p. 20).

“ (...) as text collections that were compiled on the same principles (size of the collections, size of the samples, topics covered, chronological period, etc.) in different languages, or different variants of the same language” (Mikhailov & Cooper, 2016, p. 217).

Sketch Engine is a leading online service for corpus analysis, offering a range of highly flexible functions for building and analysing concordances for items ranging from lemmas to corpus query strings.



4. Methodology and Objectives of the Study

Portuguese popular
science texts

Chinese popular science
texts



Objectives:

- In the quantitative analysis, we will explore different types of explanations and determine their overall frequency.
- In the qualitative analysis, we will examine the function of the different explanation types.

5. Common Explanation Strategies in Science Popularisation

Strategy	Definition and comment of autores
Metaphor	“One of the semantic means of establishing links between two domains of experience, meaning or knowledge is metaphor” (Calsamiglia, 2004, p. 376).
	‘[...] more problematically, a new form of exercising thought which, by not censoring references and repetitions, continually unleashes the imagination, from which derives a constant semantic elaboration’ [translated by us] (Manfredi, 2014, p. 165).
Definition	“Definitions in popularisations involve a far more limited use of specialized lexis [than in scientific discourse” (Gotti, 2014, p. 18).
	“As regards the definitional function, terminological definition explaining the meaning of a word or phrase, often using periphrases or longer phrases” (Mattiello, 2019, p. 67).
Reformulation	“Reformulation is a metadiscursive operation whereby the speaker reworks an utterance (or part of it) with the intention of making their discourse more intelligible, reducing any risk of misunderstanding on the part of the interlocutor” [translated by us] (Lopes, 2020, p. 2694).
	Reformulation is the main processes through which popularisation discourse is constructed (Sterk & van Goch, 2023, p. 22)
Denomination	Denomination refers to the use of specific terms to categorise and simplify complex concepts (summarised according Peppoloni, 2019, p. 45).

6. Analysis of most common explanation strategies

Strategy	Metaphor	Definition	Reformulation	Denomination
PT corpus frequency	4	2	3	2
CH corpus frequency	7	4	2	1

Quantitative analysis of explanation strategies

6. Analysis of Most Common Explanation Strategies - Metaphor

PT1- Quando se restringe muito o valor energético ou nutrientes específicos, nomeadamente os hidratos de carbono (HC), encarados pelos defensores das dietas Low Carb como **os maiores vilões** contra a perda de peso, a consequência é induzir carências no organismo.

(Translation: When energy intake or specific nutrients, particularly carbohydrates (HC), are severely restricted—viewed by proponents of Low Carb diets as **the biggest villains** in weight loss—the consequence is inducing deficiencies in the body.)

Metaphor

makes the concept more accessible to the audience

6. Analysis of Most Common Explanation Strategies - Definition

CH7- 胃柿石症是人在空腹时一次性大量食入柿子后(这里的柿子是指做柿饼的那种柿子,而不是西红柿),由于柿子中的鞣质与胃酸作用,形成不溶于水、不能够被消化的块状物,即胃柿结石。

(Translation: **Gastric persimmon stone disease** is when a person eats a large amount of persimmons at one time on an empty stomach (the persimmons here refer to the kind of persimmons used to make dried persimmon cakes, not tomatos). Due to the reaction of the tannins in the persimmons with gastric acid, water-insoluble, indigestible lumps are formed.)

Definition

makes the technical concept
easier to understand

6. Analysis of Most Common Explanation Strategies - Reformulation

PT5- A perda de massa gorda ocorre quando há um balanço energético negativo diário e continuado.
Ou seja, quando ingerimos menos calorias do que as que gastamos diariamente.
(Translation: Fat loss occurs when there is a continuous daily negative energy balance. **In other words**, when we consume fewer calories than we burn each day.)

Reformulation marker

The first sentence introduces the concept of fat loss in technical terms

The second sentence provides a more straightforward explanation

6. Analysis of Most Common Explanation Strategies - Denomination

PT1- Pelo contrário, criam alterações metabólicas no organismo que boicotam o sucesso e levam ao **chamado** círculo vicioso das dietas restritivas.

(Translation: On the contrary, they create metabolic changes in the body that sabotage success and **lead to the so-called** vicious cycle of restrictive diets.)

CH7- 胃柿石长期停留于胃中，会刺激胃黏膜，引起炎症、糜烂、溃疡，并引起胃功能紊乱，这种病症，就叫做(jiào zuò)胃柿石症。

(Translation: If gastric persimmon stones stay in the stomach for a long time, they will irritate the gastric mucosa, causing inflammation, erosion, ulcers, and cause gastric dysfunction. This disease is **called** gastric persimmon stone disease.)

Denomination

Introduce terms that encompass complex concepts or situations

7. Conclusions

Metaphors simplify complex topics, evoke emotional responses, and make the content relatable.

Definitions in both corpus help demystify scientific concepts by presenting clear and concise explanations, thereby enhancing reader comprehension.

Reformulation markers have the function of organising the textual structure, signalling either a return to what has been said in order to clarify or summarise it, or a planning strategy.

“Ou seja” / “huàn jù huà shuō” is primarily used to rephrase a point, summarize preceding text, or emphasise crucial information, thereby reducing ambiguity.

“Isto é” / “yě jiù shì shuō” mainly functions to clarify, explain, provide additional illustrations, or summarize previous points.

Commonly, denomination is introduced by phrases such as “called” (i.e., “chamado” in Portuguese or “叫做” (jiào zuò) in Chinese). Denominations assign specific names to complex concepts, simplifying and summarising phenomena.

This study provides insights into using strategies like metaphors and reformulation to enhance public understanding of health information.

Future research could explore interpretive strategies in other languages or domains.

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THANKS FOR YOUR ATTENTION

