Universal Terminology

Vocabulary

Vocabulary is the raw material from which the terms of the $\mathbf{T}_{logy}$are constructed. It is essentially language-dependent and must therefore be specified anew for each new language. However, its scope is very precisely limited: the extension of the terminology strictly regulates its scope. The domain of general anatomy is compatible with a vocabulary of approximately 2,000 words, which results in fewer than 5,000 lexemes in each language.

It is important to understand that vocabulary is a distinctive feature of the terminology and is therefore directly responsible for its final quality. Word selection must be carried out carefully, and to some extent, interlinguistic coordination is necessary for an international terminology.

This document constitutes Chapter 6 of the book on Universal Terminology, which is the original documentation of the $\mathbf{T}_{logy}$.

Contents

6.1 The role of vocabulary

The words constituting the vocabulary of terminology have been defined as fundamental objects of $\mathbf{T}_{logy}$. In other words, words constitute a fundamental unit of knowledge in this field. What is a tuberosity or a glomus? Even the best anatomy expert, who certainly has an excellent idea of what it means, will not be certain that their understanding is entirely shared by the authors of the terminology. The need for a common foundation for the development of terminology is obvious. Explicitness, as well as easy access to definitions, should be the rule.

This means that the lexical aspects of $\mathbf{T}_{logy}$are as important as anatomical terms and the concept of lists. It is necessary to have vocabulary entities defining words and their lexemes. These entities must, of course, be ready to be instantiated in all languages where the terminology is to be expressed.

Vocabulary entities will be classified in the domain taxonomy as non-physical entities. They will be specified according to their own hierarchy, from general to specific. They will receive definitions within the relative scope of the anatomy domain. This means that we do not have to consider an overly broad field like ordinary lexicons, which considerably simplifies our task and, consequently, makes it more precise.

Any vocabulary entity can potentially receive up to four lexemes for its expression: a noun, an adjective, a prefix, and an invariant. The use of one lexeme or another is a matter of tradition, usage, and grammar, but regardless of the final choice, the abstract lexeme remains the same. And it theoretically carries the same meaning in all languages. Of course, given the versatility of modern languages and their usage, ambiguities and approximations a re possible. The authors of the $\mathbf{T}_{logy}$are responsible for defining lexemes and must deal with the weight of traditions and usages between modern languages, which are not necessarily compatible with the precision expected of modern terminology.

By developing the vocabulary of $\mathbf{T}_{logy}$in a multilingual environment, we have gained considerable knowledge of the variations in meaning attached to vocabulary. It is important to check that corresponding words have the same meaning in all languages. It is also important to try to use the same word in all languages whenever possible.

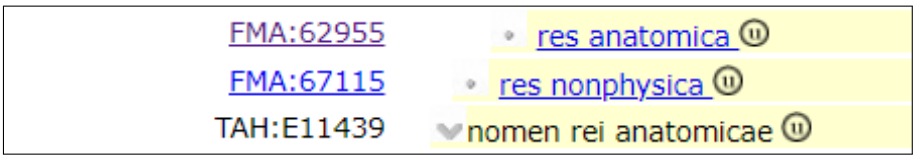

Figure 6.1: The Latin name for the vocabulary is nomen rei anatomicae, literally translated as *anatomical entity word*. Under this heading are defined a large number of subdomains allowing the storage of all the lexemes of the $\mathbf{T}_{logy}$.

6.2 Vocabulary Entity Management

The vocabulary is located in the taxonomy under the heading *non-physical entities*, as shown in figure 6.1.

6.2.1 Hierarchy of words

For the sole purpose of organizing the vocabulary and making it easier to find words, each new word is placed in a specific hierarchy. This hierarchy is to be found as non-physical entities in the taxonomy.

The word hierarchy is organized into two types of subclasses: subclasses by chapters of partonomy or systems of the human body; subclasses relating to general aspects or characteristics of anatomy. For example, geometric structures or aspects of histology. In addition, when a word cannot be found by its subclass, it is possible to consult the alphabetical list of all words.

It turns out that some words have multiple meanings or uses, which can sometimes lead to lexemes that vary differently from one language to another. For this reason, we are sometimes led to create several interdependent words instead of a single one. In this case, one word is chosen as the main word, and the variants can be positioned below it in the word hierarchy. If we consult the occurrences of the main word, all occurrences of the words classified below it will also be visible. For example, the word LA:*ventricle* is defined broadly, with two major subclasses: the LA:*ventricle of the heart* and the LA:*ventricle of the brain*. Apart from the single EN:*laryngeal ventricle*, it appears that all other occurrences of the word *ventricle* belong to one of two major subclasses.

6.2.2 Structure of a word

Each vocabulary entry is defined as an abstract word, potentially translatable into any target language of the terminology. Such a vocabulary entity has a universal name, like any other entity, which always begins with the word *nomen* in Latin or *mot* in French. This initial element is followed, in apposition, by the word itself in Latin. A typical example is LA:*nomen calcaneum*.

An abstract word can potentially define up to four lexemes: a noun, an adjective, a prefix, and an invariant, all of which are the strict expression of its content. These words are ready to be transposed into any target language of the terminology, once that language has been selected for translation. At this point, the abstract lexeme is instantiated, giving, for the example above: noun calcaneus, adjective calcaneal, and prefix calcaneo. The use of the invariant is explained elsewhere.

The presentation of each vocabulary entity includes a *Occurrences* section, where all Latin occurrences of the words in this entry are searched, i.e., all lexemes, successively throughout the entire terminology. The search is performed directly on universal formulas, but is extended to all Latin synonyms present for an entity. It is not currently performed on non-Latin synonyms. Of course, it is possible to directly access the page for each listed entity to view it in context.

The list of occurrences is the best inventory to illustrate the role and meaning of the selected entity in the terminology. The quantitative importance of this entity is immediately apparent. Indeed, some occurrence sections can contain lists of several hundred entities. This list then identifies the systems concerned by this entity. Finally, we can observe whether different meanings of the lexeme exist and have not yet been separated into several lexemes.

Figure 6.2: In this hierarchy, we see that the word navicularis is one of the words classified under the skeletal system. The specialization of the homonym navicularis urethrae is therefore a descendant of the main word navicularis.

6.2.3 Homonyms

When homonyms are present in the terminology, the rule is to separate each meaning into its specific lexemes and to link these lexemes to the main lexeme representing the main meaning. It is then possible to display the main homonym with all the other homonyms, in the form of successive lists of entities sorted according to the representative words.

As an example, consider the following lexeme LA:*nomen navicularis*. This word in the $\mathbf{T}_{logy}$has two clearly distinct meanings: first, it designates the navicular bone of the foot; second, it concerns the navicular fossa of the urethra. Therefore, we have prepared two lexemes: the main one for the bone and the dependent one for the fossa. This results in a double list of entities, both controlled by the word navicular. See the example above for the complete list of entities linked to this word.

Figure 6.2 illustrates the taxonomic hierarchy of the word navicular.

6.3 Vocabulary Acquisition

Vocabulary acquisition is carried out in two phases: first, a new vocabulary entity must be created each time a new word is needed in the terminology in at least one language; then, the lexemes must be populated in all the languages where they appear. The first phase was almost entirely completed during the implementation of the $\mathbf{T}_{logy}$for Latin and English. Indeed, these two languages have complete coverage of the $\mathbf{T}_{logy}$, and new words are rarely needed.

The second phase must be repeated for each language. It consists of defining each of the lexemes used in that language. Not all lexemes needed in one language are necessarily needed in another. In this phase, the most general words are satisfied in advance, then new lexemes are added on demand, whenever a term cannot be satisfied.

It is obvious that the vocabulary of anatomical terminology is only a small subset of the general vocabulary. There is no reason to cover anything that is not included in anatomical terminology. Fewer than 5,000 lexemes appear to completely cover this area.

When implementing a new language, it is recommended to take an existing language as a model and systematically translate its lexemes, then simply respond to each missing lexeme.

6.4 Vocabulary Tests

There are several *language tests* in the main menu that directly address vocabulary. Whether for nouns or adjectives, you can see the complete list, with information on gender, plural, and genitive, where relevant, all presented in alphabetical order. This information is available for all languages in the $\mathbf{T}_{logy}$. In addition, these tests are complemented by a brief statistic on the occurrence count by type.

It should be noted that the vocabulary is specified in its most common form, the nominative singular, and it is the terminology that exhaustively determines gender, plural, and genitive, through a system based on rules and exceptions. The tests above verify that this approach is correct.

In addition, the lexeme triplets—noun, adjective, prefix—are presented in all languages.

Finally, a concordance table can be obtained between all languages, classified by the language of your choice.

6.5 Log of updates

05 Jul 2025 Complete revision of this chapter. From now on, the source version is the French one, from which this translation is issued.

20 May 2024 Description of the management of lexemes.

26 Dec 2023 Creation of the file.

6.6 Credentials

This document is part of the book "Universal Terminology" accompanying the website on Terminologia Anatomica, sponsored by the University of Fribourg, Switzerland. It expresses the vision of the authors of the $\mathbf{T}_{logy}$about the foundations of the science of ontology, supporting the here presented terminology. Despite it is as exact as possible, close to the reality of the database of the terminology and the surrounding software, approximations, errors and ambiguities are possible and should be considered as independent of their willingness and intents.

Identified comments about the content of this document and the website and its presentation are welcome. An appropriate answer will be given when pertinent.

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