LexModel – Core Terminology for Lexicography

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1. Introduction

This article is the result of the work that has been undertaken in the context of the ELEXIS project European Lexicographic Infrastructure [Horizon 2020 – ID 731015] related to the WP5 which aim is to propose an ELEXIS curriculum[2]. In this ELEXIS curriculum design, we were responsible for the module "Standards for Representing Lexical Data: An Overview".

Through this article, we propose the definition of a core terminology for lexicography aiming to achieve a data model. It comprises two main parts: in the first one, Standards and Formats, we describe the most common standards and formats used by the lexicographic community in order to become familiar with the best practices for representing lexicographic data; in the second part, we present definitions of concepts designated by the terms that make up the core terminology to lexicographic work. After defining the concept in formal language using UML (Unified Modelling Language) diagrams, the proposed definitions are given in natural language. Finally, we illustrate a lexicographic article modelled with Ontolex Lemon, TEI/TEI Lex-0 and LMF.

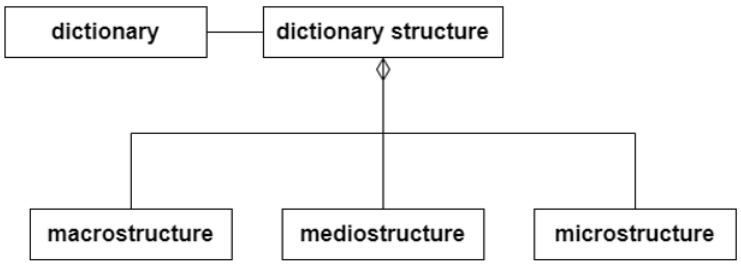
The main objective is to give the formal and natural language definitions of the core concepts, putting them side by side, to facilitate the understanding of a larger community dealing with dictionaries, traditional lexicographers, and NLP and ontology communities. The set of definitions is expressed by resorting to context-free grammar and to ISO 704 (2009) best practices such as the UML notation for defining concepts or ISO 24156-1 (2014).

2. The core terminology for lexicographic work: some examples

In the final document we are working on, we will present 19 definitions of concepts. The concepts are defined using three different approaches in order to serve several purposes. The graphical representation allows identifying the main concepts and their relationships when the formal language (context-free language) guarantees consistency. Finally, the definition in natural language provides a human-readable format.

To exemplify, we present 4 definitions out of the 19 that will be included in the end document: dictionary structure, lexicographic article, lemma and part of speech.

[1] This article is under development.
[2] ELEXIS_D5_2_Guidelines_for_Producing_ELEXIS_Tutorials_and_Instruction_Manuals



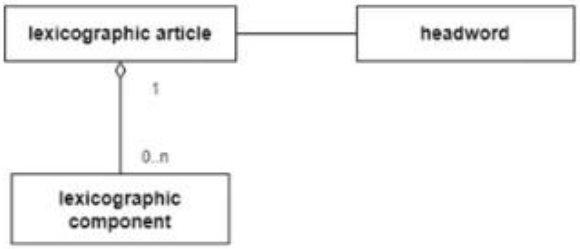
dictionary structure
structure containing a *macrostructure* (1.4), a *microstructure* (1.5) and a *mediostructure* (1.6)

Syn. megastructure

Note 1 to entry: The dictionary structure or megastructure – the dictionary as a whole, referring to the general structure of the parts that compose it – comprises two different sections: the first is the main body of the dictionary and the second is its outside matter.
Note 2 to entry: The outside matter includes the front, middle and back matter.

DIcStruct-> MacroStruct MedioStruct MicroStruct

Figure 1: dictionary structure

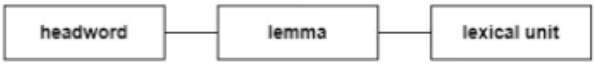


lexicographic article
structured set of *lexicographic components* (1.9) related to a *headword* (1.10)

Syn. entry

LA -> HW LCC*
HW: non terminal for head word
any LA contains one and only one headword and any number of lexicographic component components

Figure 2: lexicographic article

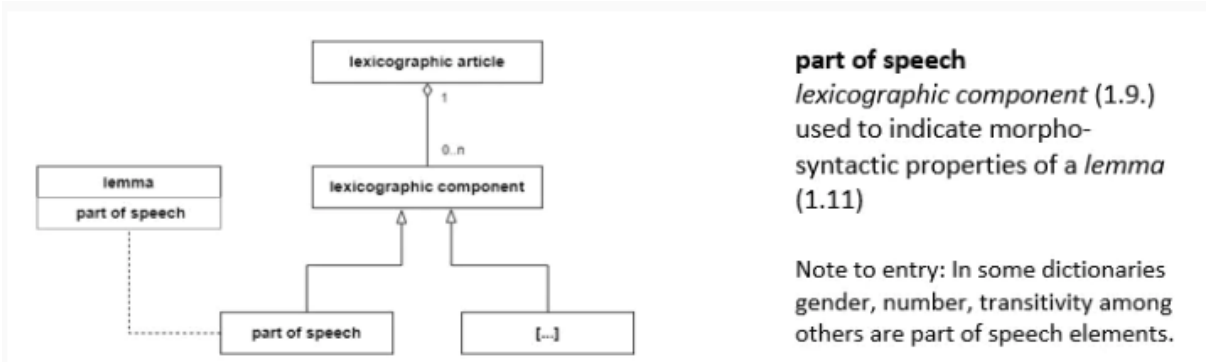


lemma
conventional representation of a *lexical unit* (1.8) that serves as a *headword* (1.10)

Note 1 to entry: A canonical form is a type of conventional representation.
Note 2 to entry: The relevant grammatical conventions may vary between languages and from disciplines such as terminology work (3.5.1), lexicography or documentation. [Source: ISO:24611:2012].
Note 3 to entry: In European languages, the lemma is usually the singular if there is a variation in number, the masculine form if there is a variation in gender and the infinitive for all verbs. [ISO 24611:2012].

Lemma -> Char*

Figure 3: lemma



part of speech
lexicographic component (1.9.) used to indicate morpho-syntactic properties of a *lemma* (1.11)

Note to entry: In some dictionaries gender, number, transitivity among others are part of speech elements.

Figure 4: part of speech

3. Lexicographic article

According to the core vocabulary we have defined, we propose a minimal microstructure of a lexicographic article in XML.

```
<lexicographic_article>
        <headword> … </headword>
        <part_of-speech> … </part_of_speech>
        <sense>
                <lexicographic_definition> … </lexicographic_definition>
                <example> … </example>
                <note> … </note>
        </sense>
        <sense>
                <lexicographic_definition> … </lexicographic_definition>
                <example> … </example>
                <note> … </note>
        </sense>
</lexicographic_article>
```

Figure 5: Minimal microstructure of a lexicographic article

4. LexModel – Core Terminology for Lexicography

The LexModel defines the core terminology for organising, structuring, and representing monolingual dictionaries and has been elaborated for teaching, training, and learning purposes in the context of ELEXIS curriculum design.

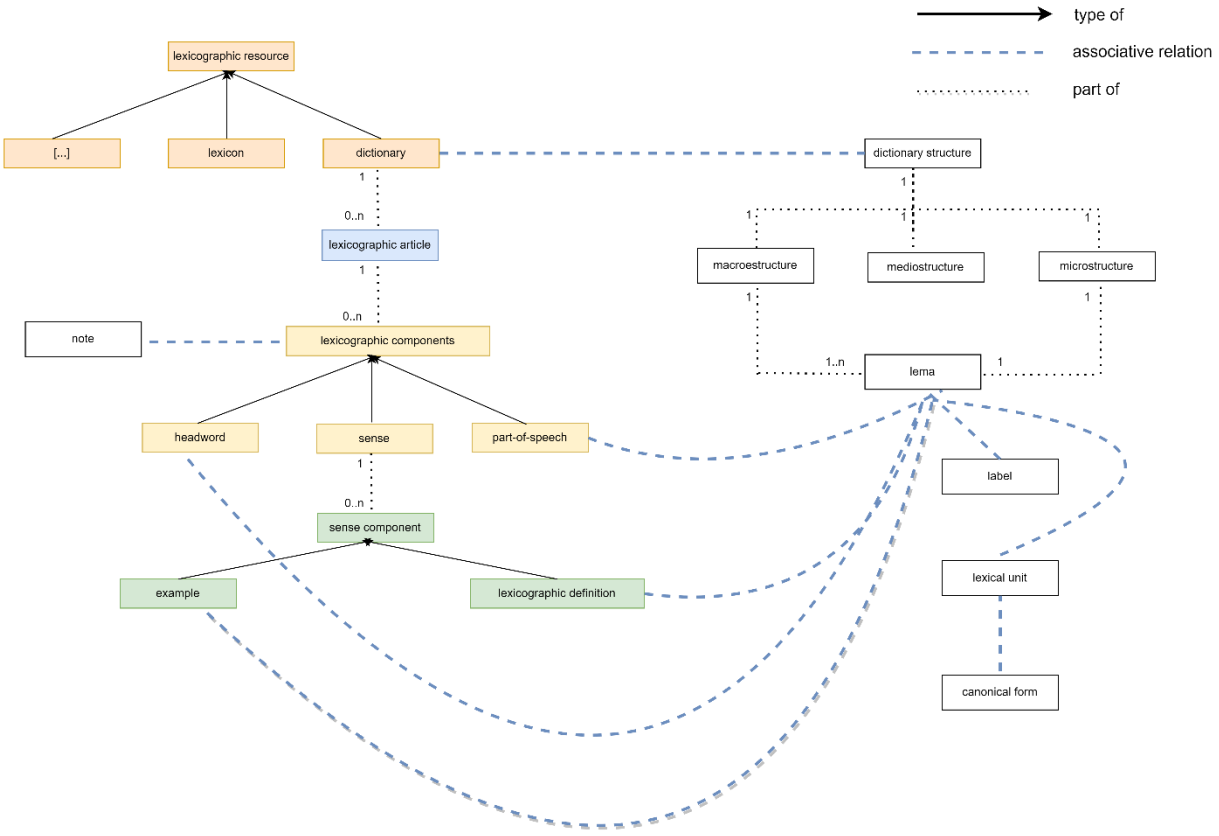


Figure 6: LexModel

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