Qf Lingüístics

Reusing the structure of the *PortLex* dictionary to create a contrastive dictionary of Romance languages: a proposal

Reutilizar la estructura del diccionario *PortLex* en la creación de un diccionario contrastivo de lenguas romances: Una propuesta

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Resum: Aquest article proposa el desenvolupament d'un diccionari en línia multilingüe per a les llengües romàniques, anomenat *DiCoRom*, utilitzant un enfocament integrador, multilingüe i pedagògic. El diccionari es basaria en l'estructura de base de dades i la interfície d'usuari del projecte lexicogràfic existent *PortLex*. Es discuteixen els objectius de *DiCoRom*, els seus usuaris potencials i les adaptacions necessàries a la base de dades i a la interfície. L'article mostra com l'estructura de *PortLex* pot servir com a base per a un altre projecte lexicogràfic, però destaca la necessitat de redissenyar la interfície per tenir en compte l'orientació pedagògica i social de *DiCoRom*, així com l'organització de les dades i els exemples per tal de tornar-los més accessibles per als aprenents principiants.
Paraules clau: llengües romàniques; base de dades multilingüe; diccionari per a aprenents; preservació de llengües; sostenibilitat.

Abstract: This paper proposes the development of a multilingual online dictionary for the Romance languages, called *DiCoRom*, using an integrative, cross-lingual and pedagogical approach. The dictionary would be based on the database structure and user interface of the existing lexicographic project *PortLex*. The objectives of *DiCoRom*, its target users and the necessary adaptations to the database and interface are discussed. The paper shows how the structure of *PortLex* can serve as a basis for another lexicographic project, but emphasises the need to redesign the interface to take account of the pedagogical and social orientation of *DiCoRom*, including the organisation of data and the inclusion of accessible examples for beginners.
Keywords: Romance languages; multilingual database; learner's dictionary; language preservation; sustainability.

1. Introduction

Despite the rise of machine translation and AI chatbots, dictionaries are still needed for the development of automated language processing systems, especially for multilingual language models (Giunchiglia, Bella, Nair, Chi & Xu, 2023). In addition, niche dictionaries designed for specific users or information are still in demand, especially learner's dictionaries, as the number of language learners continues to grow (Heuberger, 2015; Imre, 2015; Yamada, 2013, 2022). And it seems fairly certain that dictionaries, thesauruses and glossaries will continue to exist as tools for terminological standardisation and for recording and preserving lexical heritage, especially for minority languages (Kroskrity, 2015; McLelland, 2021; Prinsloo, 2012).

In view of all this, it does not seem so unreasonable to propose the development of an online dictionary of the Romance languages using an integrative, contrastive, and pedagogical approach. This multilingual contrastive tool, the *Dictionario Contrastive Romance*, hereafter *DiCoRom*, would be primarily a lexical database with a dictionary-like interface for data retrieval and display. This is where *PortLex*, a lexicographic project previously developed (Domínguez & Valcárcel, 2020), comes in, as both its database structure and its user interface would underpin *DiCoRom*. This paper discusses which features in *PortLex* are suitable for this new project and which adjustments are necessary to make them usable. However, to better understand this reuse process, it will be necessary first to detail and justify the objectives of *DiCoRom*, remembering which users it is aimed at and what it intends to do for them.

2. Objectives and justification of the project

The main purpose of this online dictionary would be to present equivalent lexemes in as many Romance languages as possible, in a contrastive layout. This would fill a gap in the vast lexicographic production on Romance languages (Córdoba, González & Sánchez, 2014; Domínguez, Gómez & Valcárcel, 2015; Mühlschlegel, 2001), for which there are very few multilingual tools for cross-lingual consultation. It is remarkable that Romance linguistics, where the contrastive approach seems to be essential, has not developed more query tools of this kind. Most of the comparative dictionaries of the Romance languages were published on paper in the 19th and first half of the 20th century and are etymologically and diachronically oriented (Bork,

2001)[1]. Among them, Wilhelm Meyer-Lübke's *Romanisches etymologisches Wörterbuch* stands out as an indispensable reference work for the study of Romance languages (Swiggers, 2014). The more modern and comparative *Dictionnaire Etymologique Roman* (*DÉRom*) draws directly on this tradition (Buchi & Schweickard, 2015).

Although it would provide the *etimologia prossima* (Buchi, 2016) of each lexeme, the dictionary proposed here, *DiCoRom*, would not have this etymological orientation, as it does not aim to provide a diachronic analysis. *DiCoRom* would have an eminently synchronic orientation since it would present lexemes in their current forms and meanings for contrastive analysis. There are already many multilingual lexical databases providing this type of information in various Romance languages. Undoubtedly, the best known and most valuable, due to the semantic organisation of the data, are those linked to the Wordnet project, such as *Galnet*[2], which provides information in Galician, Portuguese, Spanish, Catalan, Italian and French (Gómez & Solla, 2020). However, some research has suggested that Wordnet-based lexical databases have structural limitations that reduce the expressiveness of culturally specific words and their mapping across languages. They provide a more accurate representation of the lexical meaning space of dominant languages, such as English, while giving an approximate mapping of linguistically or culturally diverse languages (Giunchiglia et al., 2023). Furthermore, their coverage of Romance languages is limited and is even surpassed by other tools such as the Glosbe dictionaries[3]. This multilingual database feeds on other open online resources to generate bilingual dictionaries where, depending on the information retrieved for each language, pronunciation and usage examples can be obtained. The range of languages covered is very wide and includes, in addition to the most widely spoken Romance languages, languages such as Aragonese, Walloon and Piedmontese. Despite its multilingual nature, Glosbe only allows the generation of bilingual dictionaries and therefore does not offer cross-lingual contrasts between three or more languages.

For a tool with broad coverage of Romance languages and contrastive affordances, we must turn to the Wiktionary. This lexicographic project of the Wikimedia Foundation is unique in its open, collaborative, and multilingual

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[1] More recently, multilingual dictionaries and databases focusing on phraseology have been issued, including the main Romance languages (Flonta, 2001; Ziaian, 2021).

[2] https://ilg.usc.gal/galnet

[3] https://glosbe.com/

nature. There are currently fourteen active editions of the Wiktionary for Romance languages, within which we can find information on many others. This is because each edition is multilingual, containing lemmas not only in its metalanguage but also in other languages (Meyer & Gurevych, 2012). However, the contrastive display is limited to the "translations" section of each article, which is not presented in the same way in all editions. In fact, many editions contain entries that do not even provide translations. These limitations and inconsistencies make Wiktionary unsuitable for cross-language searches, despite its great potential and usefulness (Fuertes-Olivera, 2009).

Another of *DiCoRom*'s main objectives is to provide an accessible tool for learning and contrastive analysis, suitable for different age groups and levels of competence, both linguistic and metalinguistic. In other words, *DiCoRom* should be useful not only for learning different aspects of Romance linguistics, but also for training metalinguistic and intercultural skills, as well as for raising awareness of linguistic diversity and the importance of preserving it. To address all these issues, the language awareness approach has been used in language teaching since the 1980s. In this approach, comparison between the L1 and one or more L2s is a recurring element (Dompmartin, 2011). Projects in this area, such as EVLANG-JALING or ELODIL, have shown that this method is particularly suitable for early language learners (Armand, Surois & Ababou, 2007; Candelier, 2003; Noguerol, 2006). This could make *DiCoRom* a useful learning resource for implementing this approach in primary, secondary and higher education. However, achieving this requires a major effort in the pedagogical design of the user interface, where pre-attentive elements (form, color, position, and motion) must play an essential role in the presentation of data (Nussbaumer, 2015; Ware, 2004). In this respect, the experience gained in the development of learner's dictionaries, particularly for English, will be essential in providing a pedagogically sound presentation of the results in a user-friendly interface for a wide range of users. In addition, developments in pedagogical lexicography can support a better organisation of lexical information, either by proficiency levels (beginner, intermediate, advanced) or by semantic classes that are easily manageable for users (Heuberger, 2015; Yamada, 2013)[4].

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[4] A good example of integrating all these elements into the microstructure of a learner's dictionary could be the *Oxford Advanced Learner's Dictionary*. This dictionary organises the meanings of lemmas according to CEFR proficiency levels and a hierarchy of 'topics', i. e. semantic classes easily understood by users (Yamada, 2022).

Finally, the development of a tool to preserve and enhance linguistic heritage is another of *DiCoRom*'s main objectives. It must not be forgotten that, as in other linguistic areas of the planet, the linguistic diversity of Romania is under threat. In fact, most of the recorded Romance languages are in decline or even threatened with extinction. In this context of social minorisation, several Romance languages still lack a generally accepted standard variety (e. g. Arpitan, Ligurian) or are undergoing controversial standardisation processes (e. g. Galician, Occitan) (Postlep, 2020; Reutner, 2020). It is well known that dictionaries have been very useful tools for recording dialectal variation and preserving linguistic heritage (Barbato & Varvaro, 2004; Kroskrity, 2015; Upton, 2016). But beyond their role in preserving language and cultural data for posterity, online dictionaries have the potential to promote endangered languages and their cultural heritage in several ways (Garrett, 2018; Prinsloo, 2012). Firstly, online dictionaries can raise awareness of the existence and importance of these languages, both within their respective communities and among the wider public. Secondly, they can facilitate the sharing of language resources and knowledge between different communities and regions, which can promote cross-cultural understanding and cooperation. In addition, creating bilingual or multilingual dictionaries can be used to develop language learning and teaching materials, facilitating the transmission of languages in endangered contexts. Nor should it be overlooked that the production of dictionaries in a language is also a necessary step towards its standardisation (Kristiansen, 2019; McLelland, 2021). Clearly, dictionaries can have a positive impact on the self-image of endangered language speakers by helping to raise the status and value of their language. This can contribute to the well-being of community members by increasing their sense of pride and connection to their language and culture (Boerger, 2017).

3. Uses and users

After defining and justifying the main objectives of the project, the next step is to consider the potential applications of *DiCoRom*. The target users of this dictionary can thus be categorised according to its usefulness as a lexical database, a reference work, a teaching and learning resource, and a tool for linguistic and cultural dynamization.

As a multilingual lexical database, *DiCoRom* has potential to serve as a bridge between lesser-used Romance languages and large lexical databases.

By linking lexical data from these languages to Wordnet synsets, the dictionary can enrich the linguistic resources of these languages, promoting their visibility and accessibility through ICT. In addition, the cross-lingual data alignment can contribute to the development of computational linguistic applications in the fields of machine translation and natural language generation.

Moreover, *DiCoRom* could also be useful as a tool for language learning and teaching. It could help learners to understand the many lexical and semantic relationships between different Romance languages. Teachers could also use *DiCoRom* to design language activities such as vocabulary games and language awareness tasks. Certainly, this dictionary can contribute to the linguistic and cultural dynamization of local communities by promoting the recognition, preservation, and promotion of their linguistic and cultural heritage. More specifically, *DiCoRom* could also serve as a reference tool for language revitalisation programmes and language planning initiatives.

Consequently, *DiCoRom* could have many potential benefits for different user groups. Firstly, language learners and teachers at different levels of education may find such a dictionary a valuable teaching resource when working within language awareness methodologies. But it can also be useful for language revitalisation practitioners and language policy makers working with members of local communities on language empowerment. Certainly, *DiCoRom* can also benefit researchers and developers in computational linguistics who are interested in including lesser-used Romance languages in the tools they develop. And finally, *DiCoRom* could be used by researchers and students of linguistics looking for a comprehensive and systematic picture of lexical diversity and similarity within and between Romance languages.

4. Reusing *PortLex*: from a valency dictionary to a romance dictionary

At first sight, *PortLex* and *DiCoRom* might seem to be two very different lexicographical projects. The first is a sophisticated valency dictionary focusing on the noun phrase, and the second aims to be a dictionary of the Romance languages with a strong social and pedagogical orientation. There are, however, a number of essential features common to both projects that motivate the use of *PortLex* as a starting point for the design of *DiCoRom*. Most of these features relate to the database structure rather than the query interface. However, designing a multilingual, contrastive query interface for *PortLex* provided valuable lessons for *DiCoRom*.

PortLex is many things at once, but essentially, it is a valency multilingual dictionary of the noun phrase. This online tool functions not only as a reference dictionary, but also as an annotated database and a community of users and editors. It is free and accessible to users worldwide and was developed at the University of Santiago de Compostela. *PortLex* could also be defined as a semi-collaborative dictionary, since users can add content to it under the supervision of the editing team, which in turn works collaboratively through an interface that allows a smooth organisation of the workflow. As a valency dictionary, it provides detailed information on the nominal phrase, so that arguments and semantic roles constitute essential working variables in the linguistic analysis. As a multilingual dictionary, *PortLex* covers six languages and contains a specific module for each language. Each module is linked to a mother dictionary, with Spanish as the pivot language. Since it allows the simultaneous retrieval of data from several languages, *PortLex* can be defined not only as a multilingual dictionary, but also as a cross-lingual dictionary (Domínguez, Mirazo & Valcárcel, in preparation; Domínguez & Valcárcel, 2020).

4.1 *Interlingua as a pivot language*

Among the many advantages offered by the modular design of the *PortLex* database, two are particularly relevant to *DiCoRom*: the possibility of reusing or extending the database by adding new modules or languages, and the ability to link data across languages through a pivot language. *PortLex* uses Spanish as the pivot language. This means that entering data in Spanish modules (lemmas, meanings) will open corresponding modules in other languages, allowing data to be linked across languages. In the case of *DiCoRom*, Interlingua will be the pivot language and metalanguage of choice. This constructed language offers a number of advantages for this function that it is worth exploring (Mulaik, 2015; Stenström & Yeager, 2009): there is an important lexicographic production for Interlingua (Harmsen, 2020), the language is not linked to a specific country or culture, and it is generally highly intelligible to Romance speakers, which makes it particularly accessible to potential users of *DiCoRom* with limited or no knowledge of English (school population, elderly speakers of minority languages, etc.).

4.2 *A modular database structure*

Within the *PortLex* database, modules can be categorised as standard or class. Standard modules have the same fields for all languages, such as definition and synonym modules. Class modules, on the other hand, have language-specific options for fields related to argument realisations and combinations within the noun phrase. In *DiCoRom*, this organisation would be maintained, but since it is not a valency dictionary, the function of the modules would be very different. There would be a standard module in which the data from the mother dictionary would be entered in Interlingua: lemma, meaning, type of word and possible inflected forms. This module would also include two data elements that are missing in *PortLex* and that are necessary for linking *DiCoRom* to other lexical databases and learning resources: the corresponding synset in Wordnet, with a link to another resource (e. g., Galnet), and a semantic classification of the lexeme[5].

The class modules for each Romance language will essentially be five: the equivalence module, the variation module, the example module, the morphology module, and the additional information module. The equivalence module would collect, in addition to the equivalent of the lexeme in the mother dictionary of a Romance language, data on its phonetics, part of speech, etymology and, in the case of nouns, its grammatical gender. As for the variation module, this is essential in a multilingual dictionary of Romance languages with wide coverage, since many of these languages show a high degree of variability, not only at the dialectal level, but also in standard norms. This module would therefore compile variants related to the data in the equivalence module: graphic and phonetic variants.

Another important module in the *DiCoRom* database would be the one dedicated to examples. Since it is intended as a tool for language learning at a basic level, the dictionary will always provide controlled or pedagogical examples adapted to the beginner's level. To strengthen the contrastive character of the dictionary, it is important that translations of the same examples are

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[5] Concerning semantic information, it is essential for this project to deal with a classification that is understandable to a wide typology of users. The one used in *PortLex* seems too simple and the ontologies used in WordNet too complex. Both options are not suitable for the pedagogical and social character that *DiCoRom* should have. For this reason, semantic classifications such as the *Topics* of the *Oxford Learner's Dictionary*, organised according to the learning levels of the CEFR, seem much more appropriate for the project (Yamada, 2022).

proposed in all languages[6]. Following the protocol used in *PortLex*, to introduce an example in the Interlingua module would open the corresponding modules in the other languages to introduce the translations. As for morphological information, this deserves a separate module, since in Romance languages most types of words (nouns, determiners, pronouns, adjectives, verbs) have inflected forms. Their inclusion in the database would undoubtedly be useful for the use of *DiCoRom* as a learning dictionary, but the abundance of inflected forms, especially for verbs, and the high degree of variability in many Romance languages require careful consideration of the design of this module.

Finally, there would be an additional information module, similar to the one existing *PortLex*. On the one hand, it would include information on phrasemes (idioms, collocations, clichés) related to each language equivalent. On the other, paremiological units would also be introduced in this module. This information is particularly relevant for speaker communities, as it is one of the most visible links between language and culture. However, unlike *PortLex*, this module would not consist of an editable text box into which all information would be typed. Instead, it would be entered into specific fields for each type of unit (phraseme or proverb). Furthermore, in order to avoid the codes used in *PortLex* editing, this module should allow editors to visualise and organise the information entered using the cursor.

4.3 *A collaborative workflow*

Another feature of the *PortLex* database that will be central to the development of *DiCoRom* is undoubtedly the collaborative workflow in the editing process. The *PortLex* dictionary is defined by its collaborative nature, with teams of specialists in five languages working together to gather, select and structure information for each entry. For the development of *DiCoRom*, a similar working context would be encountered, but with a larger number of languages and people involved, and it is therefore of particular interest to learn from the experience of *PortLex*. Within this project, the editing process involves several people with different roles, including editing, reviewing and administration. Editors enter information into the database but require temporary

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[6] This module would work in a very similar way to resources such as Tatoeba (https://tatoeba. org/) or other parallel corpora.

authorisation from reviewers to modify or delete data. No entry is available to dictionary users until it has been reviewed and validated. Administrators manage user profiles, assign roles, and enter lemmas for editors to work on. The editing process begins when an administrator enters a new lemma into the mother dictionary, and editors and reviewers are then assigned to enter the information into each module of the database. Users can access entries as the information is validated and added, although this process can take several weeks.

DiCoRom would follow this organisation since its development must involve specialists or even informants from different languages. However, the pedagogical nature of the project will lead to the coverage of the lemmas by CEFR levels, with priority being given to the first levels (A1, A2). On the other hand, the contrastive nature of *DiCoRom* makes it advisable to prioritise the input of information for the equivalence, variation and example modules, as the information contained in the other modules (morphology and additional information) is more difficult to align in a cross-lingual layout. Finally, it would be advisable to start with the most widely spoken Romance languages[7], as these tend to have more data available, making it possible to quickly provide information for the multilingual contrastive layout.

4.4 *The cross-lingual grid layout*

One of the major achievements of *PortLex* is the design of a query interface that allows the user to display data in different views. Simple wordform searches provide a generic display of results, showing a set of core data per lexeme. Clicking on each of these provides a detailed visualisation of the data for a single lexeme in a particular language. Finally, a contrastive display of this detailed data can be generated, aligned with the corresponding data in another language. *DiCoRom* would also allow for these types of data visualisation, but with the emphasis on contrast between multiple languages, and with particular attention to pre-attentive elements in order to facilitate queries.

Unlike *PortLex*, a simple search for a word in one language would initially result in a contrastive display of its equivalents in many different languages.

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[7] The inclusion of English and German as working languages should also be considered. The former is the language of international communication and can help non-Romance speakers to better decode *DiCoRom* information. As for German, it should not be forgotten that a very relevant part of the Romance linguistics literature is written in this language.

The large number of languages that *DiCoRom* must cover makes a vertical contrastive display impractical, so a grid layout will be adopted. Starting with a default six-cell contrastive layout for English and the most common Romance languages, the user should be able to easily select how many cells and which languages to display in the contrastive grid before or after starting a query.

For each language, in addition to the lemma, the grammatical gender, the reference pronunciation, the etymology and an example of use would be provided. On top of the contrastive grid, the basic information about the lexeme in the search language would be displayed, accompanied by the semantic information from the mother dictionary (definition, Wordnet synset and semantic class). As in *PortLex*, clicking on each cell would give access to the detailed visualisation of the data in a given language (inflected forms, phrasemes and proverbs), which could then be contrasted with that of another language.

As with *PortLex*, the interface will offer several query types besides simple search. Retrieving word lists through filtering according to CEFR level, semantic field and language would be of particular interest for using *DiCoRom* as a learning tool. In the visualisation of these vocabulary lists, the data would be arranged in columns and the cells would provide the same information as in the contrastive grid. For each lexeme in these lists, the user should be able to expand the information in contrastive or detailed mode.

5. Conclusions

This paper has shown how the structure of a valency dictionary such as *PortLex* can serve as a basis for a lexicographic project with a very different set of objectives. This is made possible by the fact that both resources are multilingual, cross-lingual, and collaboratively compiled by different teams of specialists. However, while the database structure of *PortLex* can be reused for *DiCoRom*, the user interface needs to be thoroughly rethought due to the significant differences between the two resources, as *DiCoRom* has a much stronger pedagogical and social orientation. These differences affect not only the design of the interface, but also the organisation of the data by language level or semantic class, and the use of controlled and accessible examples for beginners.

It should also be noted that the *DiCoRom* database would be developed at least ten years after the *PortLex* database. Recent advances in automatic con-

tent generation now allow for several additional developments for the *DiCoR-om* database, such as automatic generation of language maps or vocabulary learning activities. However, there are still many decisions to be made. These include deciding which languages to cover, given the continuing difficulties in distinguishing between languages and dialects; how to deal with polycentric and poly-elaborated languages (Muljačić, 1986); and how to manage a wide range of data sources for a broad typology of data sources for a large number of languages with different social status.

Another important issue will be to determine which profiles should be included in the working teams. In the case of many lesser-used languages, academic specialists are scarce, and it may be necessary to consider involving amateur specialists and local cultural associations. In any case, it will also be necessary to establish stages of work in order to avoid scattering and blockages in the dictionary compilation process, thus concentrating on work at the beginner levels (A1 and A2 of the CEFR) for those languages where qualified specialists and quality data sources are available. However, these and many other difficulties that will surely arise during the production of the dictionary should not undermine the motivation of those involved in the project: to develop an accessible learning artefact to promote language awareness, to work on the multilingual and multicultural skills of people of all ages and social backgrounds, and to bring well-being to historically discriminated and stigmatised linguistic communities.

References

Armand, Françoise; Sirois, François, & Ababou, Samira, 2007. Entrer dans l'écrit et éveiller à la diversité linguistique au préscolaire (en milieu pluriethnique et défavorisé). In Lucchini, Silvia & Maravelaki, Aphrodite (ed.) *Langue scolaire, diversité linguistique et interculturalité.* Bruxelles: Editions Modulaires Européennes, 13-25.

Barbato, Marcello & Varvaro, Alberto. 2004. Dialect Dictionaries. *International Journal of Lexicography* 17(4): 429-439.

Bork, Hans Dieter. 2001. Geschichte der vergleichenden Wörterbücher in der Romania / Histoire des dictionnaires comparés des langues romanes. In Holtus, Günter; Metzeltin, Michael, & Schmitt, Christian (ed.) *Lexikon der Romanistischen Linguistik. Band I/1 Geschichte des Faches Romanistik. Methodologie (Das Sprachsystem).* Berlin / Boston: Max Niemeyer Verlag, 552-562. doi: http://dx.doi.org/10.1515/9783110938388-023

Boerger, Brenda. 2017. Rapid Word Collection, dictionary production, and community well-being. E-poster presented at the *5th International Conference on Language Documentation & Conservation*. Mānoa: 2-5 March 2017. http://hdl.handle.net/10125/41988.

Buchi, Éva & Schweickard, Wolfgang (eds.). 2015. *Dictionnaire Étymologique Roman (DÉRom): Genèse, méthodes et résultats*. Berlin / München / Boston: De Gruyter. doi: http://dx.doi.org/10.1515/9783110313482.

Buchi, Éva. 2016. Etymological dictionaries. In Durkin, Philip (ed.) *The Oxford Handbook of Lexicography*. Oxford: Oxford University Press, 338-349.

Candelier, Michel 2003. *L'éveil aux langues à l'école primaire. Evlang : bilan d'une innovation européenne*. Bruxelles: De Boeck.

Córdoba, Félix; González, Ernesto, & Sánchez, María Dolores (ed.). 2014. *Lexicografía de las lenguas románicas: Perspectiva histórica*. Volumen I. Berlín / Boston: De Gruyter. doi: http://dx.doi.org/10.1515/9783110310313

Domínguez, María José; Gómez, Xavier, & Valcárcel, Carlos (ed.). 2015. *Lexicografía de las lenguas románicas: Aproximaciones a la lexicografía moderna y contrastiva*. Volumen II. Berlín / München / Boston: De Gruyter. doi: http://dx.doi.org/10.1515/9783110310337

Domínguez, María José & Valcárcel, Carlos. 2020. PORTLEX as a multilingual and cross-lingual online dictionary. In Domínguez, María José; Mirazo, Mónica, & Valcárcel, Carlos (ed.) *Studies on multilingual lexicography*. Berlin: De Gruyter, 135-158.

Domínguez Vázquez, María José; Mirazo Balsa, Mónica, & Valcárcel Riveiro, Carlos. In preparation. *La valencia del sustantivo y su tratamiento lexicográfico multilingüe*. Granada: Editorial Comares.

Dompmartin, Chantal. 2011. Éveil aux langues et aux cultures à l'école : une démarche intégrée avec un triple objectif cognitif, affectif et social. *L'Autre* 12(2): 162-168.

Flonta, Teodor. 2001. *A Dictionary of English and Romance Languages: Equivalent Proverbs*. Hobart: De Proverbio.

Fuertes-Olivera, Pedro A. 2009. The Function Theory of Lexicography and Electronic. Dictionaries: WIKTIONARY as a Prototype of Collective Free. Multiple-Language Internet Lexicography. In Bergenholz, Hennig; Nielsen, Sandro, & Tarp Sven (eds.) *Lexicography at a Crossroads. Dictionaries and Encyclopedias Today, Lexicographical Tools Tomorrow*. Bruxelles: Peter Lang, 99-134.

Garrett, Andrew. 2018. Online dictionaries for language revitalization. In Hinton, Leanne; Huss, Leena, & Roche Gerald (ed.) *The Routledge Handbook of Language Revitalization*. New York / London: Routledge, 197-206.

Giunchiglia, Fausto; Bella, Gábor; Nair, Nandu Chandran; Chi, Yang, & Xu, Hao. 2023. Representing interlingual meaning in lexical databases. *Artificial Intelligence Review*, 1-17. doi: http://dx.doi.org/10.1007/s10462-023-10427-1

Gómez, Xavier & Solla, Miguel Anxo. 2020. Construction of a WordNet-based multilingual lexical ontology for Galician. In Domínguez, María José; Mirazo, Mónica, & Valcárcel, Carlos (ed.) *Studies on multilingual lexicography*. Berlin: De Gruyter, 179-196. doi: http://dx.doi.org/10.1515/9783110607659-010

Harmsen, Ruud. 2020. *Compulsar tredece dictionarios de interlingua*. https://rudhar. com/cgi-bin/cgi-grep.cgi [Retrieved 07/14/2023].

Heuberger, Reinhart. 2015. Learners' Dictionaries: History and Development, Current Issues. In Durkin, Philip (ed.) *The Oxford Handbook of Lexicography*. Oxford: Oxford University Press, 25-43.

Imre, Attila. 2015. The future of dictionaries and term bases. *Bulletin of the Transilvania University of Braşov, Series IV: Philology & Cultural Studies* 2: 15-24.

Kristiansen, Tore. 2019. Language standardization. In Darquennes, Jeroen; Salmons, Joe, & Vandenbussche, Wim (ed.) *Language Contact. An International Handbook*. Volume 1. Berlin / Boston: De Gruyter Mouton, 384-397. doi: http://dx. doi.org/10.1515/9783110435351-032

Kroskrity, Paul V. 2015. Designing a Dictionary for an Endangered Language Community: Lexicographical Deliberations, Language Ideological Clarifications. *Language Documentation and Preservation* 9: 140-157. https://scholarspace. manoa.hawaii.edu/server/api/core/bitstreams/c3d6eb98-32da-4abf-b8c5-223141be9d22/content

McLelland, Nicola. 2021. Grammars, Dictionaries and Other Metalinguistic Texts in the Context of Language Standardization. In Ayres-Bennett, Wendy & Bellamy, John (ed.) *The Cambridge Handbook of Language Standardization*. Cambridge: Cambridge University Press, 263-293. doi: http://dx.doi. org/10.1017/9781108559249.010

Meyer, Christian M. & Gurevych, Iryna. 2012. Wiktionary: a new rival for expert-build lexicons? Exploring the possibilities of collaborative lexicography. In Granger, Sylviane & Paquot, Magali (ed.) *Electronic Lexicography*. Oxford: Oxford University Press, 259-595.

Mühlschlegel, Ulrike. 2001. Geschichte der Wörterbücher in der Romania / Histoire des dictionnaires dans les pays de langue romane. In Holtus, Günter; Metzeltin, Michael & Schmitt, Christian (ed.) *Lexikon der Romanistischen Linguistik. Band I/1 Geschichte des Faches Romanistik. Methodologie (Das Sprachsystem)*. Berlin / Boston: Max Niemeyer Verlag, 544-552. doi: http://dx.doi. org/10.1515/9783110938388-022

Mulaik, Stanley A. 2015. *Interlingua. Grammar and Method.* Scotts Valley: Create Space.

Muljačić, Žarko. 1986. L'enseignement de Heinz Kloss (modifications, implications, perspectives). *Langages* 84: 53-63.

Noguerol, Arthur. 2006. El programa EVLANG en sociedades multilingües, el caso de Cataluña. In Muñoz, Héctor (ed.) *Lenguas y educación en fenómenos multiculturales*. México: Universidad Autónoma Metropolitana-Iztapalapa, 373-398.

Nussbaumer, Cole. 2015. *Storytelling with Data: A Data Visualization Guide for Business Professionals*. Hoboken: Wiley.

Postlep, Sebastian. 2020. "Minor" Ibero-Romance Languages. In Lebsanft, Franz & Tacke, Felix (ed.) *Manual of Standardization in the Romance Languages*. Berlin / Boston: De Gruyter, 809-830. doi: http://dx.doi.org/10.1515/9783110458084-035

Prinsloo, Daniel J. 2012. Electronic lexicography for lesser-resourced languages: The South African context. In Granger, Sylviane & Paquot, Magali (ed.) *Electronic Lexicography*. Oxford: Oxford University Press, 119-144.

Reutner, Ursula. 2020. "Minor" Gallo-Romance Languages. In Lebsanft, Franz & Tacke, Felix (ed.) *Manual of Standardization in the Romance Languages*. Berlin / Boston: De Gruyter, 773-808. http://dx.doi.org/10.1515/9783110458084-034

Stenström, Ingvar & Yeager, Leland B. 2009. *Interlinguistica e Interlingua*. Linköping: Societate Svedese pro Interlingua.

Swiggers, Pierre. 2014. La linguistique romane, de Friedrich Diez à l'aube du XXe siècle. In Klump, André; Kramer, Johannes, & Willems, Aline (ed.) *Manuel des langues romanes*. Berlin / Boston: De Gruyter, 43-64. doi: http://dx.doi.org/10.1515/9783110302585.43

Upton, Clive. 2016. Regional and Dialect Dictionaries. In: Durkin, Philip (ed.) *The Oxford Handbook of Lexicography*. Oxford: Oxford University Press: 381-392.

Ware, Colin. 2004. *Information Visualization: Perception for Design*. San Francisco: Morgan Kaufman.

Yamada, Shigeru. 2013. Monolingual Learners' Dictionaries - Where Now? In Jackson, Howard (ed.) *The Bloomsbury companion to lexicography*. New York: Bloomsbury Academic, 188-212.

Yamada, Shigeru. 2022. Oxford Advanced Learner's Dictionary – Now and then. *Oxford University Press English Language Teaching Global Blog*. https://oupeltglobalblog.com/2022/09/13/oxford-advanced-learners-dictionary-now-and-then/

Ziaian, Mark. 2021. *Multilingual Dictionary and Phrasebook of 12 Western European Languages: Over 1500 Words and Phrases in English, German, Dutch, Swedish, Danish, Norwegian, French, Italian, Spanish, Portuguese, Finnish and Greek*. Amazon Digital Services.