COMPARING PAPER AND ONLINE DICTIONARIES
The experience of the Italian *Nuovo De Mauro*

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Abstract – The article describes the new elements related to the use and editing of digital dictionaries compared to traditional printed editions. The framework assumed is the more general evolution of the "text" product in computer-mediated communication and on the Internet, which causes specificities even with respect to the computerized versions of paper dictionaries on CD-Rom or USB support. The analysis is articulated by considering, first in a distinct way, the point of view of the user and that of the editorial staff, with particular reference to the experience of the Italian Nuovo De Mauro, and then intertwine the considerations carried out in an organic interpretation of the current evolutions and those desirable for the near future. Trends toward a hypertextual, multimedia and collaborative lexicography are shown, by browsing the main online dictionaries in Italian and other European languages; in the discussion, it is argued that these represent a new media, where innovative paths for accessing the complexity of the lexicon are possible, while guaranteeing the technicality of lexicographic content.

Keywords: dictionary; lexicon; hypertext; new media.

1. Premise

This article aims to analyze the new elements related to the use and editing of digital dictionaries compared to traditional printed editions. The framework assumed is the more general evolution of the "text" product in computer-mediated communication and on the Internet, which determines specificities even with respect to the computerized versions of paper dictionaries on CD-Rom or USB support.

In the background, I would like to discuss the main methodological issues related to the possibility of a new lexicography, sometimes referred to as "multimodal", in its potential and in the probable degenerations that integrations with other tools could imply. Our compass is made up of the experience of the monolingual Italian Nuovo De Mauro dictionary, a computerized edition of the volume published by Paravia: since 2014, the year of publication on the Internazionale's website, the editorial staff has experimented a new relationship with the lexicographical content and with the readers, which does not concern only the physical means of transmission or the speed of updating the entries, but which seems to reconfigure the product itself that is offered for consultation.

I will articulate the analysis by considering, first in a distinct way, the point of view of the user and that of the editorial staff of the dictionary, and then interweaving the considerations carried out in an organic interpretation of the evolutions in act and those desirable for the near future.

Lingue e Linguaggi

2. The point of view of the users

2.1. How is the online consultation of monolingual dictionaries?

The consultation of an online dictionary must be inscribed in the more general processes that affect the Internet, and even more precisely the use of hypertexts.

A hypertext is "a way of connecting pieces of text so that you can go quickly and directly from one to another"[1]. Reading on the screen typically takes on specific characters, identified in the literature in the speed and in the search for single elements of interest, predominant in *skimming* and *scanning,* which lead to structure the contents, giving the possibility to select and interrogate them with progressive levels of detail according to the needs. The change in this direction had already begun with the electronic versions of paper dictionaries: through the CD ROM or USB supports proposed together with the editions of printed lexicographic works, already between the end of the Nineties and the beginning of the 2000s, the user can navigate within the entries more dynamically, for example, by moving between one item and another by simply clicking on a lexeme contained within a definition, opening the grammar tables in a new window, carrying out advanced searches to identify groups of lemmas with homogeneous characteristics according to different parameters[2].

This trend is further enhanced by the dictionaries accessible on the Internet. In the Italian vocabulary Treccani[3], for example, by entering the search key *prova* (*test* in English), the user gets as a result a series of lemmas where the concept of *prova* significantly contributes to form the definition (eg *pistola fumante* o *esperimento*) or the verb *provare*. The user can also choose, in the top menu, the repository within which to view the results, among those available, such as "Enciclopedia", "Sinonimi", "Atlante". The Garzanti Italian dictionary[4], answering the same search key, also proposes the correlates as *audizione, cimento*, while in the Sabatini-Coletti dictionary[5] the lemmas which, in alphabetical order, are preceding and following *prova* are displayed alongside, for possible scrolling. The same happens in dictionaries of other languages in which multiple items are suggested that may arouse the user's interest, as in the *Vous cherchez peut-être* and *autres résultats* boxes of the French Larousse[6]. Therefore, it is in the initial moment of the search for the lemma that its relationships with other possible entries, of a different nature, are reported.

Once the item of interest has been selected, the medium makes the content consultation partially interactive. Some monolingual dictionaries, such as the online Spanish of the Real Academia Española[7], give the possibility to open the legend of some information of a more technical nature, such as grammar qualifications. It is sufficient to click on the abbreviation to open a pop-up window that provides a brief explanation. Most of the

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[1] https://www.collinsdictionary.com/it/dizionario/inglese/hypertext (17.02.2023).
[2] For example, these features are available in De Mauro 1999.
[3] https://www.treccani.it/vocabolario/ (17.02.2023). In this paragraph I study usage dictionaries available online for free. Among these, the Garzanti dictionary offers a basic version of the entry to all the Internet users, while additional contents such as synonyms or multiwords expressions are available for registered users only: http://www.garzantilinguistica.it/ (17.02.2023). For a preliminary discussion of some topics related to monolingual and online dictionaries cfr. Dziemianko 2010, 2020 and Kosem et al. 2019.
[4] https://www.garzantilinguistica.it/
[5] https://dizionari.corriere.it/dizionario_italiano/ (17.02.2023). Also the Hoepli dictionary offers, at the end of the entry, a list of previous and following lemmas, in alphabetical order, on which the user can click: https://dizionari.repubblica.it/italiano.html (17.02.2023).
[6] https://www.larousse.fr/dictionnaires/francais (17.02.2023).
[7] https://dle.rae.es/ (17.02.2023).

lexicographical repertoires available for free on the Web mainly exploit the possibility of moving between different entries, through references to synonyms, antonyms, or related entries, and within the entry, dividing the content into distinct sections and allowing the reader to jump from one to the other in non-sequential order. The already mentioned Larousse French dictionary distinguishes four sections of the single entry: *Définitions*, *Expressions*, *Difficultés* and *Citations*[8]; the German DWDS offers, moving from top to bottom on the screen, a first synthetic view of the meanings (*Bedeutungsübersicht*) with only the main definition, an analytical description of the meanings themselves, composed of definitions and examples (*Bedeutungen*), the etymology (with link to the etymological dictionary), a reference to the main synonyms (with link to the Thesaurus resource where it is possible to carry out new searches), an overview of typical cotestes (*Typische Verbindungen*) and further examples (*Verwendungsbeispiele*). These last sections of the entry interface with the dictionary database and with programs that allow to deepen the semantic-syntactic profiles of the lemma (*DWDS Wortprofil*) and to automatically extract syntagms and sentences from the reference corpora (*DWDS-Beispielextraktor*)[9].

As can be seen from this concise overview, in online dictionaries there is also an element of novelty with respect to their counterparts on archival support: the lexicographic contents necessarily reconfigure themselves as a point of the widest space of the Internet in which they are immersed, determining a potential integration with other software, programs, and platforms that evoke the idea of a "digitally augmented" and increasingly multimedia consultation.

The English Collins dictionary, among others, offers audio recordings of the pronunciation of words and phrases, which make the information, not always present in lexicographic sources, of phonetic and / or phonological transcriptions more easily accessible[10]. Furthermore, there are many possible links to linguistic resources of various types. The Italian project of the *Stazione di Ricerca Lessicografica* (English "Lexicographic Research Station"), for example, offers a tool for an overall consultation of different national lexicographic repositories, with particular emphasis assigned to dictionaries born in the post-unitary period, in order to document above all the representation of the lexicon in the modern and contemporary age[11]. The tool allows the user to carry out searches on multiple sources: by typing the *test* key, for example, the results on the main works come out, including the *Vocabolario degli Accademici della Crusca* (5th impression), the *Tommaseo Bellini, the GDLI*, the Italian usage dictionaries already mentioned above, and the *Nuovo De Mauro* himself. For each of these, the user can choose to see the description of the headword while remaining on the same page or can instead pass through the dictionary page, thus offering flexible navigation. It is also possible to browse databases and searchable corpora, such as those of political (*Parola di leader*) or journalistic language (online archives of some national newspapers).

Other associations are possible with cartographic repertoires: the *VerbaAlpina* project, focused on diatopic analysis, has developed a multilingual research environment to record, through georeferenced interactive cartography, the distribution of lexical units on the territory; it has collaborated with various lexicographic repositories to offer the user the

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[8] As it can be verified under the entry *preuve* (https://www.larousse.fr/dictionnaires/francais/preuve/63855) (22.02.2023).

[9] https://www.dwds.de/d/woerterbuecher (17.02.2023).

[10] Cfr. under the entry *test* https://www.collinsdictionary.com/it/dizionario/inglese/test (17.02.2023): the audio recordings are available not only for the lemma's title, but also for the forms that are mentioned after the title and for all the examples at the end of the definitions.

[11] http://www.stazionelessicografica.it/ (17.02.2023): the project is VoDIM (*Vocabolario Dinamico dell'Italiano*).

possibility, with a simple link, to access the most complete description of the examined headwords[12]. In perspective, we can imagine that the multiple possibilities of integration will be developed, even by leaving the specific lexicological sphere, with websites and platforms focused on cultural heritage, such as digital museums, which have had an important growth during the Covid-19 pandemic: the definitions of the technical-specialist terminology of art, archeology, music, professions, can be connected to the virtual places in which these themes are treated with dissemination purposes, offering the possibility for the user to dynamically access the lexical data in the context of a wider cultural fruition. This is the ambition of a Bulgarian project that has integrated the database of national places classified as UNESCO heritage with a digital dictionary aimed at girls and boys aged between 9 and 11[13].

Monolingual and bilingual online dictionaries are the subject of increasing attention in the field of educational linguistics; when freely available, they are suggested as work supports in virtual learning environments[14], valuing the Internet as a space for critical exploration of different and interrelated contents.

So far, we have exemplified processes that involve the degree of structuring and intertextuality with which the lexicographic content is offered. Some have instead hypothesized a more systematic revision, in light of the peculiarities of the digital medium, hoping for the inclusion of images, photos, infographics, audio, and video as aids to the description of the meanings and the relationships between them[15]. It is argued that the representation of meaning can benefit from the (audio)visual and iconic elements that the Internet allows to associate with the metalinguistic representation, that is, carried out by means of words and verbal language, typical of traditional lexicography; the greater availability of space compared to paper dictionaries would be a further element to support the thesis, even if views from tablet or mobile phone could be penalized[16]. The English *Visual Dictionary online* offers about twenty thousand entries accompanied by six thousand color images related to various fields, among which, at the top of the list, "Astronomy" and "Earth"[17]: by opening the "Plants" section, for example, you will find entries like *plant cells*, *lichen* with relative illustrations[18]. The home page of the site claims the adopted perspective, emphasizing interactivity, the completeness of the content offered, and greater accessibility for different audiences: teachers, parents, linguistic mediation professionals, and L2 learners of all levels. The Spanish edition *Diccionario Visual* was recently published in July 2021, following the same structure by thematic areas[19]. The *Visuwords* interface, on the other hand, which draws from the *Word-Net* database for English, offers a representation of the semantic relationships between lexemes through "network" graphics, of which the words are the nodes, connected with shapes of different colors that explain the type of relationship (synonymic, hyper/hyponymic, holo/meronymic, etc.)[20]. Also, in the Treccani's Thesaurus (2018), under the entry *prova* (English *test*), it is possible to open a map with meaning relationships (in turn divided into "people", "actions", "qualities or relationships", "places"),

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[12] https://www.verba-alpina.gwi.uni-muenchen.de/ (17.02.2023).

[13] Kovacheva 2015.

[14] See, among others, the virtual environment "Esplora (con) i dizionari digitali" described by Marello and Marchisio 2018.

[15] Lew 2011.

[16] Cfr. Nesi 1998.

[17] http://www.visualdictionaryonline.com/index.php (22.02.2023).

[18] By inserting the search key *prova* (in its different translations in English), there is no result.

[19] http://www.ikonet.com/es/diccionariovisual/ (22.02.2023).

[20] https://visuwords.com/ (22.02.2023): for example, the hyperonymic relationship is marked with a green link, while that of antonymy by a red rhombus.

and linguistic-lexical relationships (in turn divided into "synonyms" and "less broad meaning"), as shown in Figure 1[21].

Figure 1
Map of the relationships of the entry *prova* inside the Treccani's Thesaurus (2018).

Thus, online dictionaries relaunch the question of the status of explanatory definitions and the linguistic meaning that is their object, which has led some to speak of a "holistic definition" in which different semiotic modalities to access the lexicon coexist, in synergy with each other[22]. This possibility has some criticalities: it could be not rigorous and simplistic to make the definitions coincide with the visualization of the objectual referent, even if only for limited groups of terms or meanings (mostly of a concrete type and within technical-specialistic terminologies). Current trends increase the attractiveness of this option, which, however, must be carefully considered to avoid risk of compromising the quality of lexicographic information[23].

2.2. The editorial choices of the Nuovo De Mauro dictionary

In line with the trends described above, the editorial staff of the *Nuovo De Mauro* dictionary (https://dizionario.internazionale.it/) works to favor a more dynamic and interactive consultation.

By inserting the search key *prova* (*test* in English), the system returns 41 possible simple and multiword entries (among the latter, at the top of the list, *affidamento in prova al servizio sociale* e *banco di prova*). If the user wants to search for a particular multiword expression, he or she can open it either by typing any of the individual components (in the examples mentioned above, also *affidamento*, *servizio* o *banco*), or by typing it as a whole (in this case he or she will consult it as an autonomous entry).

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[21] https://www.treccani.it/vocabolario/ricerca/prova/ (22.02.2023).
[22] Liu 2015.
[23] We can recall the complex relationship between lexical meaning and extra-linguistic reality as described by Saussure 1916, 2002, mediated by the arbitrary form of the sign.

Once an item has been selected, the user can scroll, from top to bottom - as in the paper version - the basic lexicographic information (the syllabic division and the phonetic transcription for loanwords, the grammar mark, the date of first attestation and the etymology) and the description of the meanings, numbered in progressive order and labeled with a use rate. For this information, the tooltip functionality[24] has been activated, in order to clarify abbreviations such as FO (fundamental), AD (high availability), or TS (technical-specialistic) which indicate the spread in contemporary Italian. As shown in Figure 2, by clicking on the abbreviation in question, a small box is opened that provides a brief explanation, returning with a link to the dedicated page for further information.
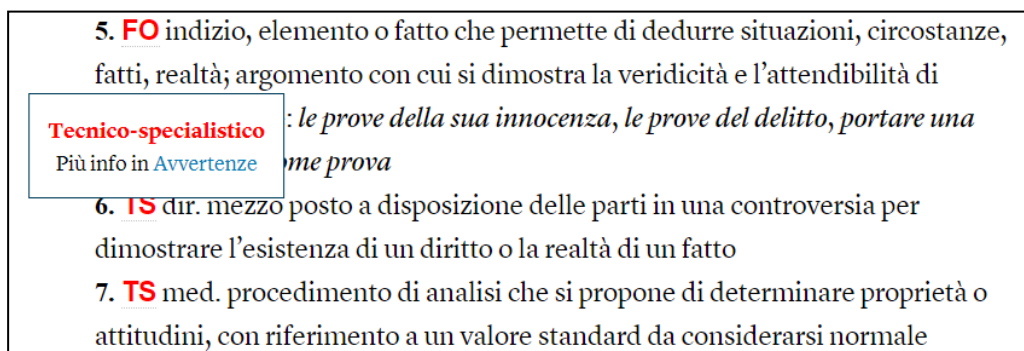
> **5. FO** indizio, elemento o fatto che permette di dedurre situazioni, circostanze, fatti, realtà; argomento con cui si dimostra la veridicità e l'attendibilità di
>
> **Tecnico-specialistico**
> Più info in Avvertenze : *le prove della sua innocenza, le prove del delitto, portare una* *me prova*
>
> **6. TS** dir. mezzo posto a disposizione delle parti in una controversia per dimostrare l'esistenza di un diritto o la realtà di un fatto
>
> **7. TS** med. procedimento di analisi che si propone di determinare proprietà o attitudini, con riferimento a un valore standard da considerarsi normale

Figure 2
Tooltip functionality for usage marks.

The link is in the section entitled *Instructions for consultation,* which describes the criteria for processing the work, from the lemmatization to the structure of the items, from the parts into which each entry is divided up to the symbols used in the phonemic transcriptions.

At the end of the list of meanings, there are, in a separate space, the multiword expressions associated with the lemma, which are in turn equipped with basic lexicographic information and the definition. Whenever a definition contains a reference to another lemma, it can be clicked for immediate consultation, like in Figure 3:

> **prova della paraffina**
> loc.s.f.
> **TS** dir.
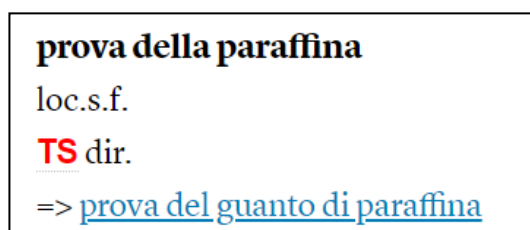> => prova del guanto di paraffina

Figure 3
Link to the entries after the arrow.

Above the title of the lemma, on the left and on the right, the previous entry of *prova* (*proustite*) and the next one (*prova-*) are displayed, for a possible scrolling in alphabetical order.

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[24] The tooltip is a small help window that appears on the computer monitor or mobile terminal: passing with the mouse (or finger, in the case of a touchscreen) over a text or icon, a small question mark appears suggesting the possibility to open a legend.

In the short term, interventions are being studied to expand acronyms and abbreviations and to increase the readability of the internal components of meanings. Further possible implementations in this direction may concern:

- IT devices to allow for a "telescope" consultation of the entry in its articulation, from a first overview of the meanings to the opening of the details of those of the user's interest;

- IT measures to increase, through links and internal references, the accessibility of the information contained in the Instructions for consultation.

In the medium term, the possibility of adding synonyms, antonyms, hyperonyms, hyponyms, meronyms, and holonyms is being verified. All feasible solutions must be based on the twofold need to improve and make the consultation experience customizable, and, on the other hand, to safeguard the specifics of the lexicographic content, with respect to which the role of the editorial staff is fundamental.

3. The point of view of the editorial staff

3.1. The dialogue with the users

In the period immediately following its publication, the Nuovo De Mauro dictionary was the simple transposition on the Web of an already existing product also in electronic form, on CD ROM support.
However, the Introduction explains the purposes of the new version.

> Il dizionario che si offre alla libera consultazione verrà progressivamente migliorato introducendovi correzioni e completamenti. A questo provvederà la redazione ma lo farà il più possibile raccogliendo osservazioni, suggerimenti, proposte delle persone che consultano il dizionario. La collaborazione di lettrici e lettori sarà preziosa per rifinire e perfezionare le singole voci e l'intera opera. Scriveteci dunque a dizionario@internazionale.it. Cercheremo di rispondere a ciascuno, ma soprattutto terremo conto dei vostri apporti. Di tempo in tempo saremo noi a prendere l'iniziativa di interpellare lettrici e lettori per accertare il loro orientamento su aspetti e punti critici degli usi effettivi della nostra lingua. Grazie fin d'ora di ogni vostra collaborazione[25]

In this declaration of intent, there is the enhancement of another typical aspect of the Internet: the greater circularity of the relationship between editorial staff and users. The possibility of gathering public feedback is an element that characterizes many recently appeared media, compared to their predecessors in the more traditional medium: newspapers, in their online versions, allow the readers to share news and leave comments; during talk shows and live television news, through social network channels, the reactions of the audience at home are accounted for in real time and are further discussed; other examples could be mentioned to show greater dialogue between those who produce and

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[25] *The dictionary that is offered for free consultation will be progressively improved by introducing corrections and additions. This will be done by the editorial staff but will do it as much as possible by collecting observations, suggestions, proposals from the people who consult the dictionary. The collaboration of readers will be invaluable in refining and perfecting the entries and the entire work. So, write to us at Dizionario@internazionale.it. We will try to respond to each one, but above all we will take into account your contributions. From time to time we will take the initiative to consult readers to ascertain their orientation on aspects and critical points of the actual uses of our language. Thanks in advance for all your cooperation* (https://dizionario.internazionale.it/avvertenze/1) (17.02.2023), author's translation.

those who receive the message, in a 'multihanded' construction of the message itself which contributes to modifying its nature.

The relationship with readers, assumed as a qualifying character of the *Nuovo De Mauro* dictionary, is therefore part of a more general trend[26] and redefines the work of the editorial staff within two main directions:

a) Take charge - with methodological and descriptive rigor - of the contribution of the linguistic community, called to actively contribute to metalinguistic reflection and to the representation of the properties of lexemes, witnessing and documenting one's own feelings with respect to meanings, relationships between terms, uses, grammatical rules, and neologisms;

b) Bring the linguistic community closer to the technicality of lexicography, so that the community itself can more consciously exercise the role referred to in point a) and, ultimately, the collaborative vocation of the dictionary can be fully followed up.

Reading the users' emails and answering to them is an important component of the "backstage" of the work, which is discussed below, exemplifying some more frequent cases.

> Buongiorno, vorrei sapere cosa significa, nel vostro dizionario, la dicitura "AU" che precede qualche definizione[27].

Usage marks are the subject of interest to many and many users: in the answers, elements of lexical statistics are provided, and the salient characteristics of the mark under examination are explained (in the case mentioned above, the high-usage mark). Also, to meet these requests, it was decided to insert the aforementioned tooltips.

Sometimes, those who consult the dictionary are not fully satisfied with the indicated meaning description, as in the case of the letter relating to *fuffigno*, which resulted in a verification of the sources and an integration of the definition:

> In senso figurativo, perlomeno qui nella zona di Pesaro, è utilizzato anche per indicare un sotterfugio, una truffa, una macchinazione per avere benefici non dovuti[28].

Sometimes, it is the connotative meaning or the derogatory value that arouses a request for clarification, as in the case of *ciarlatano*:

> Buongiorno,
> In ambito burocratico, la parola "ciarlatano" non viene più usata per riferirsi a prestigiatori e giocolieri da molto tempo, stante l'accezione ingiustamente dispregiativa che ha sempre avuto.

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[26] Despite this, many online dictionaries do not seem to have channels for a systematic dialogue with the public; it is therefore to be considered occasional, i.e. it is expressed above all in editorial notes that are published from time to time to clarify individual aspects that are particularly debated, as happened recently in the Oxford Dictionary in response to the petition signed by many women on sexism in the definition of *woman* and other related terms: cfr. https://www.change.org/p/change-oxford-dictionary-s-sexist-definition-of-woman/u/25841171 (17.02.2023).

[27] *Hello, I would like to know what the mark "AU" that precedes some definition means in your dictionary* (author's translation).

[28] *In a figurative sense, at least here in the Pesaro area, it is also used to indicate a subterfuge, a scam, a plot to get undue benefits* (author's translation).

> A mio avviso dovreste cambiare la sigla in OB (obsoleto), trattandosi di un retaggio del passato, offensivo per tante professionalità[29].

The reader feels uneasy in seeing the juxtaposition between the lemma and the categories of magicians and jugglers, and asks that it be reported as anachronistic, through a modification of the usage mark BU (erroneously interpreted as bureaucratic language): it follows a clarification regarding the mark itself (low usage), the historical origin of the meaning, and the current attestation in the sources.

In this way, specialists and the public meet each other: the former explains the criteria that inspire the elaboration and revision of the entries, which is also useful for standardizing and perfecting the criteria themselves; the second is projected within the dictionary's categories, oriented in this direction by the structure of the voice and the answers to the letters. It is significant that some requests proposed to the editorial staff are the result of identifying with the technicality of lexicography.

> Mi pare che sotto la voce 'sinistro', il rinvio dovrebbe essere > levogiro, e non 'destrogiro', ché non è indicato che sia l'antonimo[30].

Or they are the effect of a competent consultation of sources for backdating, as in this letter relating to *²agone*:

> Si legge, invece, a pag. 32 di "Alceo, favola pescatoria di Antonio Ongaro", Appresso Francesco Ziletti, 1582: "Tu sai ch'io non potevo a gran fatica / Rubbar al mar i timidetti agoni, / Quando nel mar d'Amor rubbato io fui". Si veda: https://books.google.it/books?id=HyU8AAAAcAAJ Penso perciò che il lemma vada quanto meno retrodatato al 1582[31].

Frequently, the answers must deal with lexicological considerations, while at the same time trying to make them understandable: this was the case, among others, of the response to a reader who asked for clarification on the difference between *giovinotto* and *giovanotto*, where a reference to the concept of variant has been made.

There are also rare cases in which one is forced to answer negatively, especially when it comes to linguistic questions of a more general nature, not strictly related to lexicographical work, which would require an analysis that goes beyond the editorial tasks.

The resulting reader profiles are very heterogeneous and show different degrees of familiarity with the object "dictionary"; users are apparently animated by the most diverse needs, including those of study and research.

A separate discussion must be made for initiatives such as the Italian Wikizionario dictionary[32]: in these cases the dynamics of circularity are taken to the maximum, the editorial team coincides with the public, and every Internet user can take an active part in inserting or integrating the entries. However, this practice raises the question of the quality of lexicographic content, which I will return to later in Section 4.

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[29] *Good morning, in the bureaucratic field the word "ciarlatano" is no longer used to refer to conjurers and jugglers for a long time, given the unfairly derogatory meaning it has always had. In my opinion you should change the mark to OB (obsolete), as it is a legacy of the past, offensive for many professionals* (author's translation).

[30] *It seems to me that under the entry 'sinistro', the reference should be to >levogiro, and not 'destrogiro', since it is not indicated that it is the antonym* (author's translation).

[31] *Instead, we read on p. 32 of "Alceo, favola pescatoria di Antonio Ongaro", Appresso Francesco Ziletti, 1582: "Tu sai ch'io non potevo a gran fatica / Rubbar al mar i timidetti agoni, / Quando nel mar d'Amor rubbato io fui". Please see: https://books.google.it/books?id=HyU8AAAAcAAJ. I therefore think that the lemma should be backdated at least to 1582* (author's translation).

[32] https://it.wiktionary.org/wiki/Pagina_principale (17.02.2023).

3.2. Continuous update and adherence to uses

For a usage dictionary that aims to describe, as exhaustively as possible, the synchronic state of a language, that is, of an intrinsically dynamic body, the ability to promptly update the entries is important. Lexicographic works in paper format perform this function with the appendices; those in electronic format, and even more specifically those on-line, can be modified by offering readers the revised content on a more frequent basis.

Since its inauguration, the systematic work of the editorial staff of the *Nuovo De Mauro* dictionary has mainly affected these areas.

- Updating the usage marks of the Italian New Basic Vocabulary[33];
- Backdating the lemmas, i.e., correcting the date of first occurrence on the basis of the new sources available also in digital format[34];
- Rephrasing the definitions;
- Revision of the groups of lemmas semantically related to the qualification of girls and women, ethnic minorities, and LGBTQI persons, thanks to the possibility of online dictionaries to timely adhere to the changes in attitudes of the linguistic communities;
- Insert new meanings, new lemmas, or multiword expressions that belong to fields that recently gained a particular relevance, such as that of the Covid-19 epidemic or new media.

The latter activity also takes advantage of the tracking of user searches for which the system has not found any corresponding entry, which are the indicator of an unanswered question: a further tool for dialogue, albeit indirect, with the public, which can become a valuable source for continuous updating.

4. Toward a hypertextual, multimedia, and collaborative lexicography

The first question we would like to answer, in the context of our concluding remarks, is whether the online monolingual dictionary should be understood as a new medium compared to its counterparts in print and electronic version on archival support[35]. The answer is affirmative: as we have seen in the previous paragraphs, the consultation and production of these textualities are oriented by specific conventions and organizational forms, in turn conditioned by the hypertextual space of the Internet. In this same space, where the great availability of information and content favors a different linguistic-cognitive approach to texts, the trends that we have described above are to be framed. We can summarize them as follows:

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[33] https://www.internazionale.it/opinione/tullio-de-mauro/2016/12/23/il-nuovo-vocabolario-di-base-della-lingua-italiana (17.02.2023).

[34] Among which: De Mauro 1999, TLIO and other corpora by the *CNR-Opera del Vocabolario Italiano* (http://tlioweb.ovi.cnr.it/(S(5tdx13yeem021hfgqmbhtgmd))/CatForm01.aspx) (17.02.2023), the Tommaseo online dictionary (https://www.tommaseobellini.it/#/), the Battaglia online dictionary (https://www.gdli.it/), the multilingual corpus SketchEngine, Google Books. Any more specific sources, such as dialectal dictionaries or the Online etymology dictionary, are used for single cases.

[35] We refer in particular to the definition of *media* as a form of communication characterized by a set of rules, conventions and organizational structures - culturally, socially and historically determined - that people follow when they interact semiotically using technologies: cfr. Cosenza 2014.

a. <u>modularity</u> - the lexicographic content is made usable in a way that is not necessarily sequential, according to increasing levels of depth, so that it can satisfy both a targeted reading (i.e., aimed at a specific information of interest) and an overall reading. This aspect also characterizes initiatives that propose a "telescope" structure of the polysemic entry, in which the semantic value in its articulation is first presented with an overview of the meanings and then provides the details of each.

b. <u>Integration with other contents, resources, virtual environments</u> is a strategy adopted by many initiatives, which can be distinguished according to the object and methods of association:

   i.   initiatives that establish permanent links from informative or training websites or platforms, in order to multiply the access paths to lexicographical content (for example, allowing you to open a lemma not only from the dictionary search page, but also from other virtual places inside which a reference of this type is relevant and useful);

   ii. Initiatives that establish permanent links from the dictionary page to other lexicographic works of the same publisher or editorial group;

   iii. Initiatives that establish permanent links from the dictionary page to other linguistic resources (corpora, tools for querying textual data);

   iv. Integrated consultation systems, in which there is a search engine that simultaneously queries several dictionaries, databases, and corpora and returns an overview of the results on each resource.

c. <u>Circularity in the relationship between editorial staff and the public</u>[36] which in turn can be interpreted in varying degrees:

   i.   occasional interaction between editorial staff and readers through sporadic interventions on single topics;

   ii. systematic interaction between editorial staff and readers, through dedicated channels;

   iii. potential coincidence between editorial staff and readers (having the possibility to insert new entries or update existing ones).

d. <u>Integration with iconic audiovisual semiotics</u>, alongside verbal language, in the definitions of the meanings and in the representation of the relationships between them, which allude to an overall restructuring of the lexicographic content already implemented by some dictionaries or only prefigured for actual multimedia dictionaries.

The trends that have consolidated in the twenty years during which the Internet has become a place inhabited daily by billions of people, in which we are immersed, are contradictory and can hardly be interpreted only positively or negatively: they multiply the possibilities of access to information, channels, and forms of communication, but at the same time they can also lead to an impoverishment and a loss of depth of knowledge. In these contradictions, the media of the online dictionary is by its nature exposed to a series of pressures: in taking lexemes as an object and tool of description, it could be crushed by the

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[36] On this specific aspect, see also the contribution by Licia Corbolante *"Se lo dice il dizionario…" L'utente tra i dizionari dell'uso e le nuove risorse digitali* (2019) https://www.treccani.it/magazine/lingua_italiana/articoli/scritto_e_parlato/Corbolante.html (17.02.2023).

"escape from words" that characterizes so much of online use[37] or it could, vice versa, act as a gateway to them, possibly enhanced by new technologies. On this ridge, between the changing demand and consultation attitudes and the quality of the offer, theoretical and methodological challenges arise, which we discuss below.

4.1. Access paths to the complexity of the lexicon

A monolingual usage dictionary aims to represent the diachronic and synchronic profile of a lexical entry in its complexity, made up of different components: a date of first occurrence and an etymology, a phonic and graphic form, a morphological structure, one or multiple syntactic patterns, a semantic identity (which in turn can be articulated into meanings and denotative and connotative values), relationships with other words, most frequent usages[38]. The typical organization of the paper media presents such contents sequentially, with linear series of elements such as homonyms and homographs, the different meanings of polysemic words, the lists of synonyms or antonyms in alphabetical order; today, the hypertextual nature of the online dictionary opens up a new challenge, in which the representation of complexity can proceed together with a modular access to it.

The available evidence suggests that the user of a dictionary prefers to gradually approach the multidimensional character of the lexicon. I refer, among others, to the studies that underline the general appreciation of readers for the use of illustrations within the definitions[39]: as already pointed out, the hypothesis is open to criticism because it could feed a vision of the lexicon as a nomenclature (a set of labels attached to extralinguistic entities), while specialized studies underline how words are characterized by semiotic arbitrariness and by the phenomena of polysemy, vagueness, semantic indeterminacy, and ambiguity as intrinsic elements of historical-natural languages[40]. These fenomena are found to a lesser extent in specialized terminologies: it is no coincidence that more detailed proposals in the direction of multimedia definitions refer precisely to these groups of lemmas in some disciplinary fields[41].

If the lexicon is undoubtedly multidimensional, it also seems to clearly arise a demand for simplification by those who approach it in a non-academic way, in particular on the Internet: we can hypothesize that a greater expectation of iconic semiotics is also linked to the characteristics of the fruition on screen[42]. Specifically, in the consultation of a lexicographical entry, it was also found that the ability to navigate within the various meanings can better meet the need to focus only on one (mainly coinciding with the first) or some of them[43]. Also in this case, we must question the perception of language and the attitudes of metalinguistic representation of users: it could be pertinent to speak of complexity reduction processes, in fact strongly practiced in the early stages of first and second language acquisition, but potentially harmful in the later stages[44].

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[37] Cfr. Carrada 2014. The evolutions dealt with in this paper, including the "escape from words" just mentioned, are connected with wider processes.

[38] Cfr. Ferreri 2005.

[39] Cfr. Nesi 1998 and Stein 1991.

[40] Cfr. De Mauro 1982.

[41] Cfr., among others, the proposal by Talib 2009.

[42] See what has been described above in par. 2.1.

[43] Cfr. Lew 2010 and Nesi & Tan 2011.

[44] Cfr. Ferreri 2005; Casadei & Basile 2019. Processes of reduction of lexical complexity, observed in subjects with Autism Spectrum Disorders or in L2 learners, are in place, for example, in wanting to consider monosemic a polysemic word having several meanings.

The trends that we have enucleated above at points a-d can be transformed into editorial choices in different ways: they can contribute to the representation of lexical complexity, or they can risk disregarding it. Without wishing to fully address the complex issue of the statute of linguistic meaning and definitions, strongly debated even beyond the changes stimulated by new technologies, we want to place it in the terms in which it can be formulated for the online dictionary and for specific consultation and production methods associated with it. The question then becomes whether, and possibly how, the Internet can favor innovative paths of access to the multidimensionality of the lexicon, thanks to the possibility of navigating between interrelated contents by modifying the "zoom" with which one dwells on each one, sometimes increasing it to learn more, other times decreasing it to turn the gaze on the other connected elements.

Most of the initiatives described in section 1.1 indirectly testify to what has just been described: readers are offered the opportunity to dwell on the history of a word, on its pronunciation (through audio files), on only one of its meanings and on the related most frequent contexts (through research on corpora and databases), as if to gradually accompany them in the exploration of a very complex content. Thanks to software functionalities for the "on-demand" opening of increasingly detailed information or for the immediate display of associative relationships (see above in Figure 1), the comprehension of the multidimensionality of the lexicon is not diminished, but, on the contrary, it could be favored.

In this context, even the use of iconic semiotics, to point out local, detailed aspects of the linguistic meaning (for example, in holo/meronymic relationships), cannot be excluded a priori. Fundamental, for the individual editorial choices, is the purpose for which they are used, or if their contribution is configured as a strategy of modular access to the complexity of the lexicon, or as an element of "escape" from it, in the context of a coherent and consequent organization of the dictionary entry and its video presentation. The results of the analysis can be very different depending on the type of dictionary and the population to which it is addressed, the groups of terms or meanings on which you intend to intervene[45].

4.2. For a renewed technicality of lexicographic content

Another parameter which we discussed in the paper is that of the technicality of the lexicographic content. The huge availability of raw linguistic data and free search engines and the possibility of integrating dictionaries with corpora and electronic resources, on which the user can autonomously carry out simple or advanced searches, risk losing the perception of the scientific nature of the editorial work that stands behind a usage dictionary. Starting from the choice of sources and the construction of the reference sample, up to the selection of the entries and the meanings to be included; from the elaboration of the definitions, with the relative examples, to the identification of the marks with which to describe them; from the evaluation of a syntagmatic solidarity as collocation or multiword expression up to the consequent choices of lemmatization; in a lexicographic work all this is, or should be, guided by explicit, replicable, and uniformly applied criteria to the entire lemmary. Placing the end user directly in contact with the varied and heterogeneous universe of certified uses[46], without the reading being filtered by adequate descriptive categories, it is a service that can be more or less useful (depending on the conditions), but which is in any case different from the service that aspires to provide a dictionary. In this sense, the

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[45] Cfr. Lew 2011.

[46] Mostly in written form, since the corpora that are made available online are almost always limited to this channel.

links between lexicographic works and other resources should be supported by an explicit indication of their different status, in order to avoid confusion: the distinction is appropriately noted in some of the initiatives under consideration, such as that of *Stazione di consultazione lessicografica*, but it is not in others.

Attributing to the individual internet user the role of drafting entries and definitions is an operation that, as it is even obvious to note, can compromise the reliability of the result. In affirming this, we do not want to underestimate the potential that linguistic communicative skills of speakers can have in broadening the empirical basis of the linguistic data with which a usage dictionary is compared, but to argue how much these same skills must be supported from a specialized approach to the representation of meaning and lexical properties[47]. We repeat here, *mutatis mutandis*, what has already been said in the previous paragraph: the trends summarized in points a-d can be transformed into editorial practices safeguarding the technicality of the dictionary content or debasing it and risking its quality. The need, however, does not necessarily have to be contrasted with the possibility of a collaborative lexicography: in fact, this applies also in the cases described under point c-ii, as we have tried to show by documenting the experience of the Nuovo De Mauro dictionary.

To conclude, it seems to us that hypertextual organization, multimedia, and collaboration with users can be allies of a renewed lexicography, firmly anchored to the consideration of the object, the lexicon, and methodological rigor. In compliance with these conditions, the potential offered by the Internet is multiple and deserves to be further investigated, starting from the point of view of the users and the public.

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[47] Moreover, a systematic comparison between the Wikidictionaries and some Italian dictionaries showed that the latter have nothing to envy to the former even in terms of the representativity of the empirical linguistic data: cfr. Chiari 2012.

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