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Hermogenes:

I should like to know about Hermes.

Socrates:

I should imagine that the name Hermes has to do with speech, and signifies that he is the interpreter, or messenger, or thief, or liar, or bargainer; all that sort of thing has a great deal to do with language.

(Platon, Kratylos)

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Valeria Caruso*

A Guide (not only) for Economics Dictionaries

Abstract

The recent report by Besomi (2013) shows the huge number of Economics dictionaries available online, but also describes some of their shortcomings; on the contrary Fuenfies-Olivera (2012) points out the potential of these resources in a learning context. However, in order to offer a quick reference guide to Economics dictionaries for web surfers, an evaluation system (Caruso 2011) has been designed to assess dictionary usability with respect to three kinds of prospective users (laymen, semi-experts, and experts), both in cognitive and communicative tasks, and with special reference to two types of situations in which the dictionaries might be consulted, namely translation and learning. This project, however, is not devoted to testing data quality, therefore it doesn't necessarily give any guarantees to web surfers regarding the contents provided by unrestricted dictionaries found on the Internet.

The analysis of Economics dictionaries carried out using this tool, offers a quantitative survey of the overall lexicographical features they display, proving that, even if these resources are on average not particularly suited for communicative tasks, some of them include specific kinds of data that are considered crucial for supporting users in text production (Alonso et al. 2011).

1. An introduction with some operative instructions

This paper illustrates a lexicographical tool designed to help Internet surfers who are trying to orient themselves in the 'dense forest' of free specialized web dictionaries. In this discussion, Economics resources will offer the necessary examples to show how the tool works and can be used to find the best dictionaries available for different search parameters. Searches are managed by the relational database of the system, which collects evaluation forms allowing users to be informed about the suitability of each dictionary for different kinds of tasks. The degree to which one dictionary might assist with a specific task is expressed by a percentage score, while the data and the information contained in the dictionaries are not verified or judged by the system. In reality the tool, which is accessible free of charge at the *Web Linguistic Resources (WLR)* site, does not provide any quality certification, it only suggests resources that might be useful in order to accomplish general communication tasks or to fulfil information voids.

This system aims to offer a synthetic guide, based on strictly lexicographical parameters, pointing Internet surfers toward one resource or another, depending on the task which is to be fulfilled. Generally speaking, however, the low scores assigned by the tool to the inventoried resources (Caruso 2011) prove that the specialized dictionaries which are available for free on the Web offer limited support with regards to the lexicographical functions which were taken into consideration. On the other hand, however, these dictionaries should not be completely disregarded, since they offer at the very least an initial, unrestricted source of information for subject-field novices and, as such, they should be considered more like fragments of free knowledge which can be wired together by an organizational system, displaying the overall kind of support they offer. Under this aspect, the current project is in line with some of the latest theoretical assumptions in lexicography: "[n]eeds-adapted access to data and information is the true research agenda [...]" (Leroyer 2011: 125). 'Accessology' is therefore recognized as one of the major challenges for the field of

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reference works, since it aims at creating “situation[s] where the required data is accessible and can be found in the quickest possible time” (Bergenholtz/Gows 2010: 104). The database of the *WLR* site tries to fulfil this aim, offering a set of organizing parameters in order to make Web users’ searches at least faster, since their efficiency and effectiveness cannot be guaranteed only by testing the kind of data included, as the current system does. Borrowing these key concepts from Information Sciences, Heid (2011) explains:

Effectiveness can be translated [...] as the property of a given software to provide the right data and the right amount of data to the user. Efficiency may be paraphrased [...] as the time to task completion typical of the use of a given piece of software. The quicker the user gets access to the data needed the more efficient is the software. (Heid 2011: 289)

‘Efficiency’ is thus dependent on a correct task completion, something which requires adequate data presentation but, more importantly, correct data. Therefore, while the current assessment system can be time-saving, preventing users from referring to very poor resources, it does not assure efficient, or successful, searches. In order to do that, the evaluation procedure should be improved with parameters that specifically address the quality of the information provided, for example those suggested by Tarp (forthcoming). At present, instead, the rating system offered by the *WLR* site assesses exclusively the lexicographical design of dictionaries on the basis of the kind of data they contain. This will become more clear as we illustrate how the tool works.

The screenshot in figure 1 displays a search for a dictionary of Economics providing assistance in acquiring new knowledge, one of the dictionary functions that users can choose from the “Rating profile” menu on the upper right corner of the page, while results are displayed in the centre, where each dictionary is listed with its score. Other search options include the language of the dictionary (called “Main language”), the possible translation languages, or the languages that are involved within the lemma list, which can be set using the menus beside the “Rating profile”. With this option users can search for law dictionaries containing entry words in Latin, or German cooking resources listing also French terms. Moreover, under the heading of “Site descriptors” on the left of the page, users can also choose among the 57 dictionary features that have been used for the evaluation process described below.

The screenshot shows the 'WEB LINGUISTIC RESOURCES - SEARCH THE DATABASE' interface. On the left, there are 'Site descriptors' and a 'Sector' menu with 'Dictionary' selected. The main search area has four dropdown menus: 'Main language' (Arabic, Chinese, Dutch, English), 'Translation language' (Arabic, Chinese, Czech, Danish), 'Languages involved' (Akkadian, Arabic, Catalan, Chinese), and 'Rating profile' (General rating, Translation, Communication, Knowledge). Below these is a search instruction: 'Please select descriptors, languages, rating profile (CTRL for multiple selection) and then Search! (use AND operator)'. The search results show '90 results found' in a table with columns for 'Site', 'Profile', and 'Rating (%)'. The table lists various economics-related websites and their corresponding profiles and ratings.

Site	Profile	Rating (%)
riskglossary.com	Knowledge	76
Online Dictionary & Glossary in Economic Geography	Knowledge	66
Online Glossary of Research Economics	Knowledge	62
Deardorff's Glossary of International Economics	Knowledge	59
Rethinking Economics: 41 Key Concepts - Economics Web Institute	Knowledge	59
Glossary of game theory terms	Knowledge	59
The Concise Encyclopedia Of Economics	Knowledge	59
Encyclopedia Of Law & Economics	Knowledge	55
Glossary of Economics Terms - About.com	Knowledge	55
Dictionary - Investopedia	Knowledge	52
Hypertext Glossary of Business Cycle Indicators	Knowledge	52
SEB Glossary (Sonderforschungsbereich 504)	Knowledge	52
Investor Guide - Glossary	Knowledge	48
Business Glossary - allBusiness	Knowledge	48
Virtual Economy Glossary - biz/ed	Knowledge	48
Cyclopedia of Political Science, Political Economy, and the Political History of the United States	Knowledge	45

Figure 1. Using the *Web Linguistic Resources* dictionary database. The figure shows a search for Economics dictionaries suited for acquiring new knowledge

In section 3, the features analysed by the rating system for 90 different Economics dictionaries will be used to sketch a picture of what is currently available for this specialized field without any subscription fee to Internet surfers; while in section 2 a description of the current rating system

is provided, however some key aspects concerning the challenging issue of dictionary evaluation are worth a mention here as well.

Though the current system assesses exclusively the potential suitability of one dictionary for a specific function, and thus its usability for accomplishing a specific task, at least two other rating parameters are pointed out by Tarp (forthcoming). Indirectly these proposals highlight the fact that assessments are neither absolute nor definitive, since they only serve the aim of testing the suitability of one thing for a specific parameter taken into consideration. These remarks are quite obvious, but they serve to offer an initial insight into the issue that will be at the centre of this discussion, namely how can dictionaries be evaluated and which parameters should be used to assess them? Obviously the topic is complex, and proves to be particularly challenging also because of the shift of perspective that a rating system implies, since dictionary surveys and experimental studies are replaced within these pages by a pre-set grid of features which allow us to configure different evaluation profiles within the same assessment procedure. The approach is thus purely ‘proscriptive’, since “users get explicit recommendations” (Andersen/Nielsen 2009: 362) about which resources should be accessed in order to satisfy their needs, and the way in which these resources are chosen is based on a “deductive method”, as Bergenholtz/Gouws (2010: 66) affirm, “in order to determine possible information needs within a restricted area of activity”. Unfortunately, however, the task of assessing specialized web dictionaries differs a lot from that of editing a single resource, particularly because the evaluation methodology must apply to many dictionaries, not to a single one. Moreover, in this project, the dictionaries that have been rated belong to different fields, and display many varied features, many of which also reveal the lexicographical inexperience of the compilers. Therefore, the assessment procedure does not allow us to distinguish between restricted specialized fields at the moment, as advocated by Bergenholtz/Gouws (2010), it only offers a broad evaluation system applying to all areas. The resulting assessments provide orientative evaluations conveying the likelihood with which one resource can assist with a specific task, and the different evaluation ‘profiles’ are outlined on the basis of the features that are assumed to be more relevant (Bothma/Tarp 2012) for different consultation purposes. For example, the presence of cross-references gets high scores for the laymen profile, which portrays users having no previous knowledge of one subject field and, as such, it is to be expected that they might benefit from additional definitions in order to become fully acquainted with a specific topic. These observations also apply to the general need for acquiring new knowledge (‘Knowledge’ in the database), while they are less relevant for the semi-experts’ profile, and completely irrelevant for the experts.

Generally speaking, however, fixing the evaluation grid has proved to be neither a trivial, nor a definitive enterprise, and the score assignment illustrated within these pages is slightly different from the one used before (Caruso 2011), while the whole evaluation system has been radically restructured with respect to its very first version (Caruso/Pellegrino 2012, presented at a conference held in 2009). The radical shift of perspective, the innovativeness of the topic and the ongoing nature of the assessment procedure presented within these pages mean that the whole project should be considered more for the questions it raises, rather than for the solutions it provides, which must be regarded neither as ideal nor as definitive. These solutions represent only the current stage of reflection upon some problems which hopefully lexicographers will overcome in the future, if dictionaries designed for support in specific consultation situations become the norm. Nevertheless, it must be underlined that the rating system outlined here doesn’t provide the existing dictionaries with any additional customization to improve their usability, it only offers a searching device which reduces information overload while surfing the web in search for a specialized dictionary.

2. Assessing lexicographical parameters only

Among his suggestions for future improvements of Economics lexicography, Tarp (forthcoming) also lists quality certifications attesting that Web dictionaries satisfy “a certain minimum standard

in terms of subject-field coverage, data quality and usability". Thus three parameters are considered to be essential, the first and the second ("subject-field coverage" and "data quality") pertain to specific knowledge that only subject-field experts can cover exhaustively, while the third ("usability") is mainly related to the overall lexicographical design of the tool. In effect, according to the *lexicographical function theory* (Tarp 2008), dictionaries should allow users to make efficient searches in different lexicographically relevant situations: from writing to spell checking, or learning how to do something, depending on the intended aim of the tool. Usability therefore largely depends on the satisfaction of users' needs, which can be achieved if the actual consultation situations are adequately considered and specifically supported by the lexicographical tool. Instead of the traditional dictionaries, which address different kinds of consultation situations at the same time, the new tools developed within the tenets of *function theory*, called 'monofunctional' dictionaries, are tailored to fulfil one function at a time. Therefore, using the same database, different access routes allow users to consult different dictionaries, depending on the task which is to be accomplished.

For the purpose of the current project, the general assumptions of *lexicographical function theory* are considered valuable also for the task of evaluating dictionaries, and not only for compiling them. Therefore, dictionary usability can be assessed by considering the prospective users and the situations in which the resource is employed. For the aim of this study, and in order to offer an easy tool for web surfers, the inventory of possible consultation situations has been limited to the cognitive situation (called *Knowledge* in the menu headings of the database), in which users need to increase or acquire new knowledge, and the communicative situation (called *Communication* in the database), in which users are faced with communication problems. In addition to these, the system rates two other more specific situations in which a dictionary might be consulted, since they are expected to be the most typical for websurfers: contexts in which someone needs to translate ("Translation" in the database) or learn something ("Learning"). Therefore it is possible to search for the dictionaries best suited for 'general' or more 'specific' consultation situations, but also for three different kinds of users: *laymen*, *semi-experts* and *experts* (Bergenholtz /Kaufmann 1997). Both the situations and the kinds of users considered so far represent the *lexicographical parameters* assessed by the rating system of the *WLR* site database.

2.1. The evaluation form

The database of the *WLR* site collects dictionary links and manages evaluation forms (figure 2) which allow us to rate the inventoried resources. Assessments are made on the basis of 57 different features, each of them corresponding to one field in the form, which were partly set in advance, and partly added or modified during the analysis of the Internet dictionaries.

The screenshot shows a web browser window titled 'Database Risorse Linguistiche Web'. The main content area is titled 'Web Linguistic Resources (WLR) database'. The form displays the following information:

- Name:** Dictionary of Management Jargon
- Type:** Amateur
- Actual Score:** (empty field)
- URL:** <http://dictionaryofmanagementjargon.yolasite.com/>
- Author:** William Wiekler
- Web Master:** William Wiekler
- Place:** Unknown
- Accessed:** 05/09/2011
- Kind of resource:** Dictionary
- Main language:** English
- Descriptors:**
 - Sector: Economy
 - Kind of site: Commercial
 - User feedback: Not allowed
 - Guide: Yes
 - Kind of dictionary: Monolingual
 - General organisation: Words
 - Bidirectionality: No
 - Access structure: Browse
 - Entries number: over 100
 - Word list: Single & multi word terms
 - Lexicon: Technical and non-technical
 - Cross-references: Yes
 - Word class: No
 - Morphological indications: No
 - Etymology: No
- Lexicographical functions:**
 - Layman: 48%
 - Communication: 40%
 - General rating: 28%
 - Semi-expert: 17%
 - Knowledge: 17%
 - Translation: 14%
 - Learning: 13%
- Languages involved:** English
- Translation language:** (empty dropdown)

At the bottom, there is a search bar with the text 'Record: 1 di 3' and a 'Filtrato' button.

Figure 2. The evaluation form managed by the *Web Linguistic Resources* database

The features considered so far address all the component parts of web dictionaries. For example, the host site may be an important validation criteria providing an indirect clue to the overall quality of one dictionary. In particular, if the resource is released by a credited Institution (university, ministry, journal etc.), users should feel more confident when consulting the dictionaries therein provided. On the contrary, the fields addressing the general organization of the dictionary comprise the dictionary type, whether a simple word list, a multilingual dictionary – provided or not with bidirectionality – or a plurilingual dictionary, a new dictionary added to the list which is typical of the Internet, namely the dictionary within localized sites (Caruso 2011).

Moreover, Internet dictionaries may also offer special access facilities to users, such as “Advanced search engines”. For example, the multiple responses offered by the *BusinessDictionary* search engine display not only the headwords in the dictionary, but also single words in the texts of specialised sites. In other cases, the search engine scans the classifying ontology of the dictionary. For example, on the website of the *Büro für angewandte Mineralogie*, whilst looking for “Elemente”, the subsequent list which appears also includes the names of the chemical elements contained in the resource (from “Antimony” to “Sulfur”).

The mediostucture, or the cross-linking system within a dictionary, is also very important, since it is a key component of electronic vocabularies. Accordingly, the evaluation form registers both “Cross references” and “Related terms”, only the former having direct hyperlinks to other entries, while “Hypernyms” and “Hyponyms” signal semantic hierarchies that may also function as internal references.

Going on to look at the entries, the evaluation form takes note of the strictly linguistic components, such as the indication of word class, morphological information, or syntactic patterns. But it also accounts for extra-linguistic aspects, such as examples, videos and pictures, cultural notes, but also the presence, or absence, of definitions. There are actually 18 resources inventoried in the database giving no explanations of the terms they contain, such as the well known *DiCoInfo*, or the terminological multilingual wordlist provided by the *International Monetary Fund* (figure 3).

English	Arabic	Chinese	French	Portugues	IMF Terminology	
100 percent reserve banking narrow banking	مخزونة الاحتياطيات التحتية المخزونة الضيقة	百分之百准备金要求的 银行制度 狭义银行业	système bancaire avec 100 % de réserves			
16th Conference of the Parties to the United Nations Framework Convention on Climate Change COP 16	المؤتمر السادس عشر للتغيرات في الغلاف الأرضي المتحددة الإطارية بشأن تغير المناخ	《联合国气候变化框架 公约》第16次缔约方大 会	16ème conférence des parties à la Convention-Cadre des Nations Unies sur les changements climatiques	16ª Confe	сторон Рамочной конвенции Организации Объединенных Наций об изменении климата	Partes de la Convención Marco de las Naciones Unidas sobre el Cambio Climático
1977 Decision on Surveillance over Exchange Rate Policies 1977 Surveillance Decision	قرار عام ١٩٧٧ بالرقابة قرار عام ١٩٧٧ بالرقابة على سياسات السرف	1977 年监督决议	décision de 1977 relative à la surveillance des politiques de change	Decisão de 1977 sobre a Supervisão das Políticas Cambiais Decisão de 1977 sobre Supervisão	Решение о надзоре 1977 года Решение о надзоре за курсовой политикой 1977 года	Decisión de 1977 sobre la supervisión de las políticas de tipo de cambio Decisión de 1977 sobre Supervisión

Figure 3. The multilingual wordlist provided by the *International Monetary Fund*

The form also accounts for user-friendly features that make many of these resources particularly appealing for laymen, such as non-technical definitions, pronunciation notations, or audio files.

Lastly, the dictionary features are the basis of the pre-set grid (figure 4) which allows us to assess the different profiles (*Layman, Semi-Expert, Expert, Knowledge, Communication, Translation, Learning*) of the lexicographical parameters taken into consideration, i. e. *Users, General Situations, and Specific Situations* in which the dictionary may be consulted. The complete list of the dictionary features considered so far is provided in the appendix to this paper, where they are displayed together with the corresponding scores. Figure 4, however, provides an overview of the assessment grid, listing only the headings of the general component parts considered (i.e. *General Organization and Host Site, Mediostructure, Microstructure*), without any specifics about the single features inventoried for each of them (which are listed in the Appendix).

Lexicographical parameters →	Users									General situations						Specific situations			
	Layman			Semi-expert			Expert			Knowledge			Communication			Translation		Learning	
Feature Frequency →	Yes	No	S.	Yes	No	S.	Yes	No	S.	Yes	No	S.	Yes	No	S.	Yes	No	S.	
Dictionary features ↓																			
General Organization and Host Site																			
Mediostructure																			
Microstructure																			
Linguistic fields																			
Non linguistic fields																			
Maximum rating	24			24			24			30			30			25		25	

Figure 4. Outline of the evaluation grid used by the *Web Linguistic Resources* database

2.2. The evaluation system

Not only the particular parameters taken into consideration, but also the evaluation system which is used, plays a crucial role in pointing users towards the most useful unrestricted online dictionaries. Moreover, the assessment procedure of this project is greatly influenced by the rating format that has been chosen. As a matter of fact, percentage evaluations have the advantage of being self-explanatory, since they show the degree to which a specific function is fulfilled. On the other hand, however, they oblige us to pay special attention to the maximum scores allowed for the different profiles, since they must reach similar values in order to avoid a situation wherein the ful-

filment of some profile, which has the lowest maximum grades, is found more easily. These basic methodological assumptions allow general guidelines for score assignment, such as:

1. profiles belonging to the same lexicographic parameter should reach the same maximum score;
2. complementary (or contradictory) profiles do not share the same features;
3. similar profiles may share the same features.

In addition to these guiding principles, more specific decisions have to be taken in order to fix the evaluation grid, selecting the most relevant dictionary features for each profile considered. Therefore, a specific evaluation scale has been established, which discriminates between the relevant and contradictory features for each rating profile in the following way:

- 2 points are given to the most relevant features
- 1 point to relevant features
- -1 to contradictory features
- -2 to the most contradictory features.

As Bothma/Tarp (2012) have correctly pointed out, relevance is actually the decisive operative criteria to establish, among different variables available, what must be taken into account with respect to a specific parameter considered. However, for the project in question, the aforementioned limitations, which are imposed by the percentage assessments, prevent the listing of the relevant features for a specific lexicographical function from being carried out with a purely deductive procedure. Instead of the unrestricted open lists, which are the practical application of the deductive method endorsed by the *lexicographical function theory* (Tarp 2008, Nielsen 2009), the rating system used here obliges us to distribute grades comparatively, since the maximum score of different profiles must be identical. Namely, following the first of these guiding principles, users' profiles are allowed 24 points maximum each, general consultation situations 30 points and specific consultation situations 25. On the contrary, as is predicted by the second guideline, the contradictory profiles of *laymen* and *experts* mean that scores are assigned very differently between each other, in order to obtain clear indications about which resources may be useful for the former and the latter. On this basis, technical definitions are necessary in vocabularies for experts (2 points), whilst they should not be used in those for laymen (-2). Similarly, example phrases are extremely useful for laypeople, and quotations for experts. *General situations*, such as *Knowledge* and *Communication*, and the more specific consultation situations that are derived from them, such as *Learning* and *Translation*, have instead many features in common, as predicted by the third guideline. For example, the *Translation* profile has been outlined on the basis of the *Communication* profile, since the former is considered to be a more specific communicative situation. On the contrary, *Learning* implies the acquisition of new *Knowledge*, therefore, in the WRL database, it has been considered as a kind of cognitive situation which requires some linguistic instruction as well, since very often languages, or some linguistic aspects, are the focus of the topic in question. The *Learning* profile is thus characterized by the presence of indications about the *Grammatical category*, *Morphological information*, *Syntactic pattern*, *Audio files*, *Example sentences*, and *Learning resources*, which are not needed for the *Knowledge* profile¹.

With respect to the *Learning resources*, it must be underlined that they are surprisingly rich and innovative in web dictionaries. The *Living Economics* website, for example, offers a lot of additional materials as well as the definitions provided by its *Glossary*, such as extensive readings on specific topics, animated graphs (figure 5) and video explanations (figure 6) of many key Economics terms.

¹ Complete details about the difference between the Knowledge and Learning profile, as well as about all the other profiles, can be found in the complete rating grid in the Appendix to this contribution.

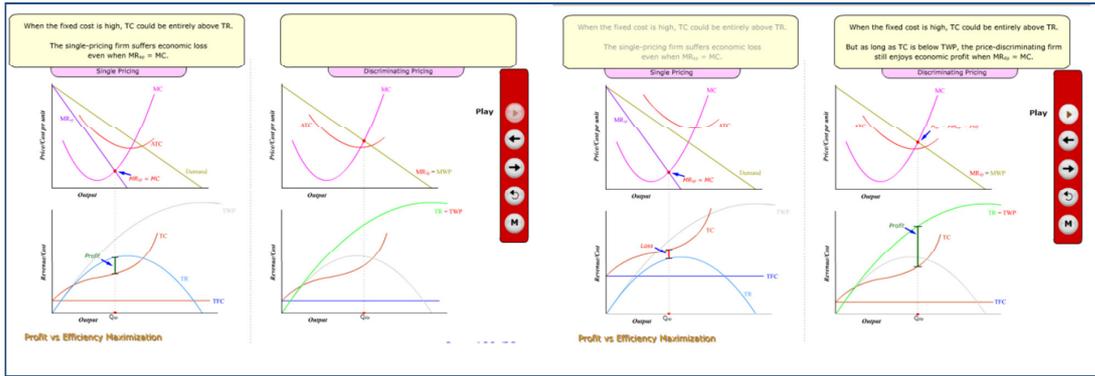
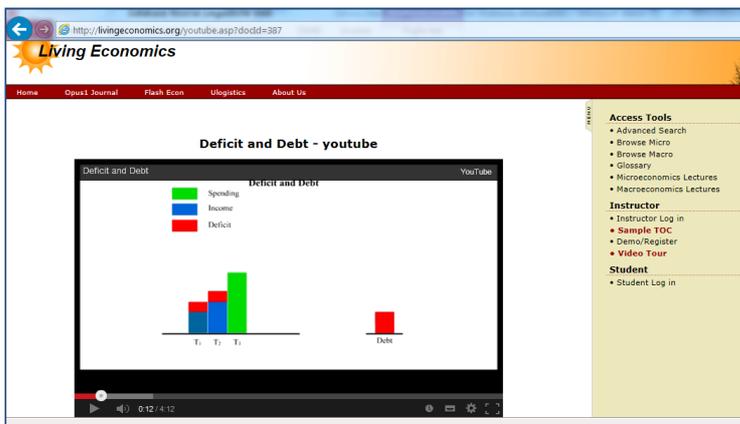


Figure 5 (above) and 6 (below). Animated graphs and a screenshot of a video explanation from the *Living Economics* website



Feature frequency is another important component of the score system, since the majority of these dictionaries have no strict lexicographical organization, and the features listed in the form are only seldom displayed. This is probably the greatest shortcoming of the specialized dictionaries that are accessible free of charge on the web, a characteristic which makes their evaluation particularly challenging as well, since the collector needs to scan a lot of entries in order to check if a specific feature is systematically present or not.

For example, in the dictionary of *InvestorWords*, word class is only seldom displayed, as well as example sentences. On the contrary, it is interesting to observe the systematic treatment of some features in the *Glossary of Economics Terms* of *About.com*, such as “Related Terms”, “Additional Resources”, and “Links”, since the absence of any information in one of these fields is explicitly signalled with the label ‘none’ (figure 7). The observance of a strict lexicographical organization in this resource is confirmed by the systematic treatment of Latin entry words, which are always translated into English before being explained.

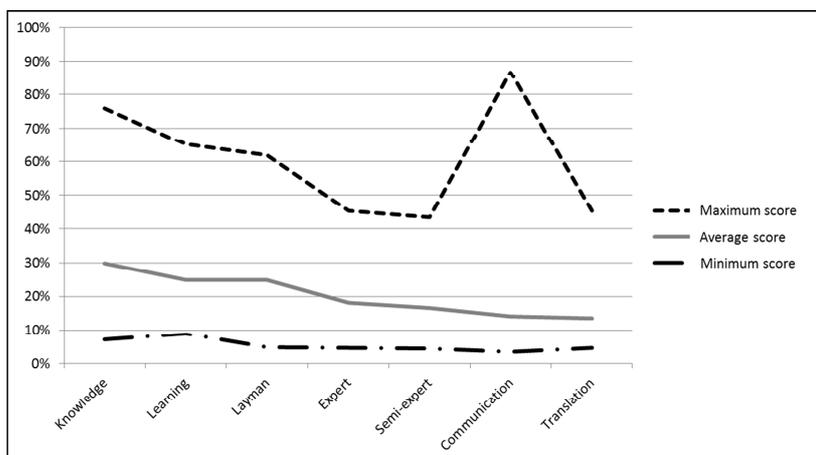
The screenshot shows the 'About.com Economics' website. The main heading is 'Inter Vivos'. Below it, there are navigation links: '<Back to Last Page>' and '<Full Glossary>'. The 'Definition of Inter Vivos' section explains that it is from Latin, 'between lives', and is used to describe gifts between people. It also mentions that quantities and timing of inter vivos gifts are studied empirically. Below the definition, there are sections for 'Terms related to Inter Vivos' (None), 'About.Com Resources on Inter Vivos' (None), 'Writing a Term Paper?' (with starting points for research), 'Books on Inter Vivos' (None), and 'Journal Articles on Inter Vivos' (None). At the bottom, there is a 'Return to Main Page' link and a 'Related Articles' section with several links.

Figure 7. A definition from the Glossary of Economics Terms of About.com

Therefore, the systematic presence of one feature in a dictionary has been evaluated differently from those that only seldom occur. For example, the presence of example sentences has been considered as a relevant feature for a dictionary intended for laymen and therefore, this feature is given two points if it is always present, and one point if it is only sometimes displayed.

3. Free web Economics dictionaries

A recent report by Besomi (2013) shows the huge number of economy dictionaries available online, but also some of their shortcomings; on the contrary Fuertes-Olivera (2012) points out the potentials of these resources in a learning context. In addition to these surveys, it is possible to take a quick glance at the characteristics of 90 different Economics dictionaries that have been rated by the system.



Graph 1. Maximum, minimum and average scores for the different lexicographical profiles rated by the evaluation system

Results (see Graph 1) show that these dictionaries are particularly poor as regards the *Expert*, *Semi-Expert* and *Translation* profiles, since no good lexicographical resource was found for them. On the contrary, at least one good dictionary can support web users with *Communicative* or *Knowledge* tasks, however the average scores prove that the majority of the Economics dictionaries which were inventoried are basically inadequate for any of the consultation situations which were examined.

Moreover, as will be shown in a moment, these lexicons prove to be partly constrained by the subject field, and despite the general low quality, some of them also display interesting features that should be considered for future developments of specialised lexicography, such as the inclusion of non-technical and semi-technical terms in the entry list to support users with communicative tasks. Recently, in fact, Alonso, Millon & Williams (2011) have underlined the importance of verbs for specialised discourse, despite the general tendency to include only nouns within the lemma inventory of specialised dictionaries:

[...] most specialised dictionaries consider only nouns as entries of the dictionary [...]. In order to produce a text, non-native speakers need to understand the characteristics of the specialised discourse and it is not only the noun which plays a relevant role. Verbs [...] help to organize the discourse, to articulate and structure the text [...]. (Alonso et al. 2011: 12)

Therefore, while “for a language learner, it is extremely important to [...] know the behaviour and use of verbs in order to be able to produce and understand a specialised discourse”, experts would consult a dictionary for acquiring other information:

In most cases, scientists already know the definition of the technical word, but look up the ‘specialised’ meaning of a general word in the dictionary, for getting information of the behaviour of the word in a domain-specific context.

The wealth of language lies in semitechnical words and general words in specific contexts [...]. (Alonso et al. 2011: 12)

With respect to these observations, it must be underlined that some of the Economics dictionaries rated so far include general meaning verbs among their entry words. For example, *Investorguide* offers the semi-technical value of the verb ‘take’:

take
definition

noun
1. the money received in a shop

Example
Our weekly take is over £5,000.

2. a profit from any sale

verb
1. to receive or to get

Usage
the shop takes £2,000 a week
the shop receives £2,000 a week in cash sales

Usage
she takes home £450 a week
her salary, after deductions for tax, etc. is £450 a week

2. to perform an action
3. to need a time or a quantity

Example
It took the factory six weeks or *The factory took six weeks to clear the backlog of orders.*

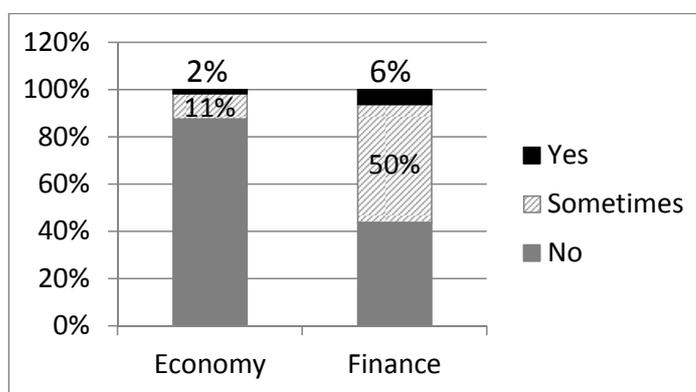
(Note taking - took - has taken)

Related Terms

• charge • Employment Cost Index • arbitrage bond • transaction exposure • false breakout • drawback • statistics • arbitrage

Interestingly, the definition for this meaning is followed by example sentences, such as “the shop takes £2,000 a week”, which are further explained by a paraphrase like “the shop receives £2,000 a week in cash sales”. Moreover, the third meaning provided (“to need a time or a quantity”) is non-technical, but it is exemplified in the Economics context-domain with two example sentences displaying the different syntactic constructions for this specific meaning of the verb. This example seems to be in accordance with the improvements suggested by Alonso and colleagues, while a further seven Economics dictionaries (9% of our sample) with non-technical words in their lemma inventory were identified.

A remarkable difference has been noticed, however, regarding the presence of idioms in Economics and finance dictionaries. Idioms are actually only seldom present in the resources for the field of Economics, while they are inventoried quite often in those for finance (see Graph 2). This phenomenon can be explained easily, since finance is based on daily transactions and continuous interactions, and as such it has a lively jargon (McCloskey 1992) and people accessing a finance dictionary might very well be interested in the more idiomatic terms of this specialised domain.



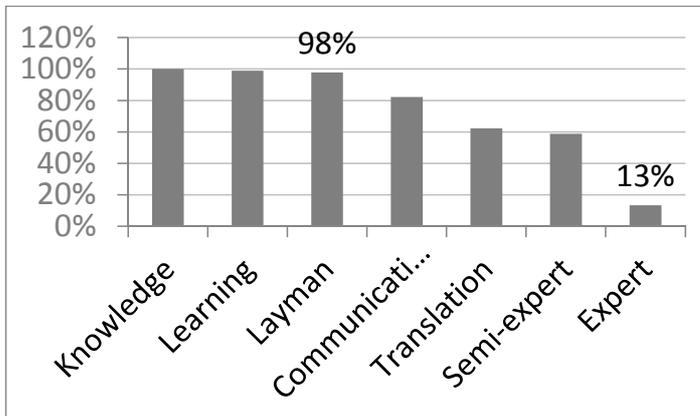
Graph 2. The percentage of dictionaries containing idioms for the Economics and finance sector

Generally however, these finance dictionaries do not list idioms among the different forms of one entry word, but they are treated as autonomous entries, even if the idiom is a whole sentence (*put pants on it*), a phrasal verb (*trade me out*, *take me along*), or a multi word expression combining polysemous, non-technical words, such as ‘take’ in *take a flier*, *take it down*, *take me along*, *take a bath*. The only exception can be found in the *Cambridge Business English Dictionary* which, for example, lists all the multiword expressions with ‘take’ in the search box menu, but it registers each of these idioms under the corresponding ‘key constituent’ word (Dobrovolskij & Piirainen, 2005), namely ‘flyer’ for ‘take a flyer’, or ‘bath’ for ‘take a bath’. *Investopedia*, instead, provides these lexical items with the heading of “a slang term”, moreover in this dictionary there’s a special section for buzzwords and financial lingo, which proves that these units are given special attention. Therefore, with the sole exception of the *Cambridge Business English* and the *Investopedia* dictionary, idioms seem to be added unsystematically by the compilers, and therefore they are rated as ‘sometimes’ present in the evaluation forms of the other dictionaries.

4. Is the evaluation system reliable?

The reliability of the proposed rating system is particularly important for this project, which has been designed to use an efficient orientative tool which gives no ambiguous indications, such as a dictionary which is simultaneously suited for a layman and an expert. The methodology used to accomplish this task is proscriptive, since there is a pre-set grid of evaluation parameters fixed in advance, therefore, generally speaking, the project can benefit from research on the use of dictionaries, but first of all the system must prove to be consistent with the aims for which it was designed and with the basic guidelines that are used to assign scores (see § 2.2). For example, fol-

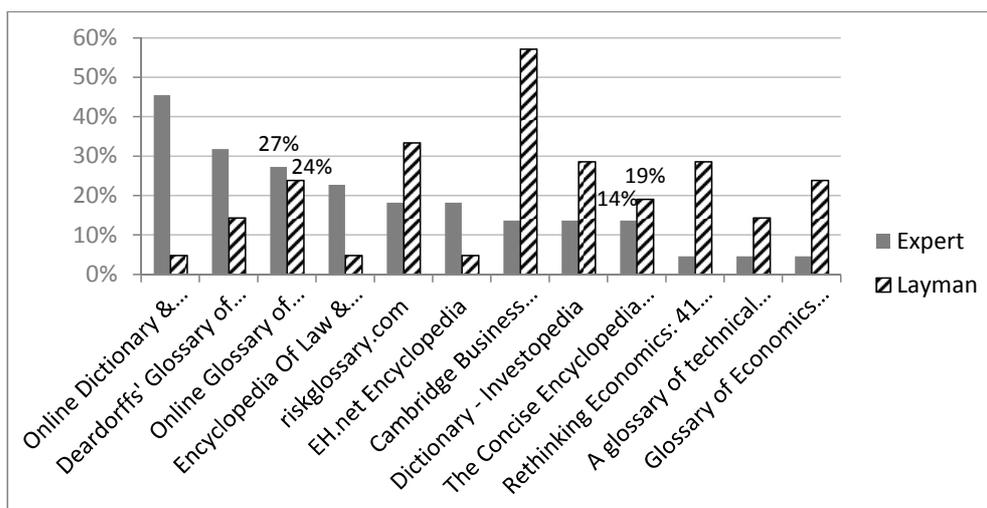
lowing the findings from some studies on the retention of words after video explanations (Lew & Doroszewska, 2009), the system rates video files as less efficient than pictures for a learning task (see the rating grid in the Appendix). More generally speaking, however, the score system should offer coherent evaluations, particularly with respect to those conditions that were considered to be contradictory by the general guidelines of score assignment, such as the fact that one dictionary shouldn't be suited for laymen and experts at the same time. In order to test this aspect, it is necessary to refer to specific data.



Graph 3. Percentage of dictionaries having some points score for the different profiles considered

Graph 3 shows that absolutely every Economics dictionary rated by the system gets some points for the layman profile (98%), on the contrary, features which are considered to be suited for experts are present only in a small percentage of the sample (13%, 11 dictionaries out of 90). This means that some dictionaries actually receive some points for both profiles, and this is a negative outcome.

From the more detailed results of Graph 4, however, it becomes clear that only two of the dictionaries scoring for both the expert and layman profile get very similar results for these parameters, therefore only 2% of the resources inventoried in the database have a contradictory score, a percentage that can be considered as the quantitative estimation of the current inconsistency of the rating system.



Graph 4. Detailed scores for dictionaries receiving points for both the layman and expert profile

5. Remarks for future improvements

Though one of the most urgent requirements for anyone browsing the Internet is the reliability of contents found on the web, this kind of assessment is currently unachievable using the current system presented. Using the agenda set by Tarp (forthcoming) as a starting point, however, it is possible to present and discuss some points that could be taken into consideration for future improvements of the system.

It has already been mentioned (§ 2) that two out of the three parameters considered by Tarp, namely “subject-field coverage” and “data quality”, must be checked by field experts, but while the latter can be assessed within the system developed so far, the former needs to be tested by more accurate and extensive considerations, and as such it is beyond the reach of the evaluations made by the *Web Linguistic Resources* database.

Other aspects, however, can be taken into consideration to improve the system through assessments of the data quality, which can be achieved by adding specific fields to the evaluation form. For example, we can check whether one resource contains inaccurate data or incorrect definitions, though this last parameter is particularly challenging to be ascertained, since it covers extremely different kinds of problems, ranging from bad explanations to information mix-ups, such as in the following definition:

outperform – To have better sales, earnings, or stock price appreciation than investors expected or than the competition. “Outperform” is often used to describe a stock that is doing better than other stocks within the same industry, or compared to a benchmark such as the S&P 500. (InvestorWords)

A verbal and anominal gloss seem to be combined in this explanation of ‘outperform’ taken from the *InvestorWords* dictionary, since the first part of the definition seems to refer to a verbal meaning: “To have better sales, earnings, or stock price appreciation than investors expected or than the competition”. The second half, however, seems to portray the technical value of the derived name: “*Outperform* is often used to describe a stock that is doing better than other stocks within the same industry, or compared to a benchmark such as the S&P 500”. Comparing this to other definitions of the verbal and nominal values of ‘outperform’, the lack of clarity becomes immediately evident. In order to make this comparison, however, it is necessary to consult two different dictionaries. *Investopedia* offers the nominal value:

Outperform

Filed Under: Stock Market Terminology

Definition of ‘Outperform’

An analyst recommendation meaning a stock is expected to do slightly better than the market return.

Also known as “market outperform”, “moderate buy”, or “accumulate”.

Investopedia explains ‘Outperform’

Exact definitions vary by brokerage, but in general this rating is better than neutral and worse than buy or strong buy.

While the *Cambridge Business English Dictionary* provides the verbal meaning:

outperform

UK \blacktriangleleft US \blacktriangleleft /,aʊtpə'fɔ:m/verb

›[I or T] STOCK MARKET, FINANCE if shares, bonds, etc. outperform, or if they outperform a particular stock market or financial market, they produce more money for investors than other shares, bonds, etc. of a similar type:

Commodities futures have produced better annual returns than stocks and outperformed bonds even more.

In the short term, equities are higher risk, but over the long term they are less risky because they will outperform.

outperform the (stock) market/index*The latest Fortune survey of business performance in the US showed that new and diverse companies outperform the stock market.*

› [T]to be more successful than other companies or countries:

Employment reports suggest that the US economy will outperform Europe in the months to come.

outperform (your) competitors/rivals *In order to achieve dramatic improvements and outperform competitors, a corporation often needs to make radical changes.*

This comparison proves the inadequacy of the first definition taken from *InvestorWords*, but it also highlights the insufficient terminological coverage of all the dictionaries that have been mentioned, since one mixes the two separate values together, while the others provide exclusively the verbal or the nominal meanings. For this second kind of shortcoming, however, only the extensive quality certifications advocated by Tarp can comprehensively suffice, while the rating system developed for the *Web Linguistic Resources* database has the more limited expectation of being an orientative tool and therefore cannot account for detailed quantitative inadequacies, such as bad terminological coverage.

Having established the aim of this project as simply a dictionary guide rather than a quality certification system (as Tarp 2015), it can nevertheless be improved with more parameters to be rated, and even with a supplementary evaluation scale designed exclusively for the assessment of data quality, but the additional estimations must be limited to a fixed number of definitions extracted at random from each dictionary, regardless of the number of entries they contain. This procedure is in line with the nature of the process thus far developed, which is a statistical assessment for what should be consulted and what should be left aside by web surfers. Therefore the assessments obtained from a sample review of the data contained in one dictionary must be provided with a variation coefficient, namely an index showing the precision of the estimation made, since the larger dictionaries will get a less accurate estimation than the smaller ones.

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Appendix

The following table represents the grid used for score assignment (or rating grid). Each profile is outlined by the points given to the different features, according to the evaluation scale and the explicit guidelines of § 2.2.

Lexicographical parameters → Lexicographical profiles →	Users						General situations				Specific situations				
	Layman		Semi-expert		Expert		Knowledge		Communication		Translation		Learning		
Microstructure															
Linguistic fields															
Grammatical category									2	1	1		1		
Morphological information									2	1	1		1		
Syntactic pattern									2	1	2	1	1		
Phonetic transcription			1		2	1			2	1					
Pronunciation notation	1								1						
Stress information	1								1						
Audio files	2								2	1			2	1	
Syllabification			1		2	1			1						
Frequency of use									1						
Linguistic variation			2	1	2	1			2	1	2	1			
Technical definitions	-2	2	1	-1	2	-2									
Translation equivalences											2	-2	1		
Example sentences	2	-2	1						2	1			2	1	
Quotations	-2		-1	2	1	2	-2	1	2	1					
Idioms			2	1	2	1			2	1	2	1			
Collocations			2	1	2	-2	1		2	1	2	1			
Synonyms	2		1						2	1					
Antonyms	2		1						2	1					
Etymology			1	-1	2	-1	1	2	1						
Non linguistic fields															
Definitions	2		1	1				2	1				2	1	
Examples	2		1					2	1				2	1	
Domain field			1		1			2	1						
Video files	1							2	1				1		
Pictures	2		1	1				2	1				2	1	
Cultural notes								2			2				
Maximum	24			24			24		30		30		25		25
Minimum	-6			-7			-12						-2		-2