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English Monolingual Advanced Learners' Dictionaries on CD-ROM: A Comparative Evaluation

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CONTENTS

Abbreviations

BNC	British National Corpus
CANCODE	Cambridge and Nottingham Corpus of Discourse in English
CIC	Cambridge International Corpus
CIDE	Cambridge International Dictionary of English
CLC	Cambridge Learners' Corpus
COBUILD	Collins COBUILD English Dictionary
COBUILD2	Collins COBUILD English Dictionary, 2nd edition
EFL	English as a Foreign Language
ESL	English as a Second Language
GA	General American Pronunciation
GUI	Graphical User Iterface
IPA	International Phonetic Alphabet
L1	Native Language
L2	Target Language
LDOCE	Longman Dictionary of Contemporary English
LIED	Longman International English Dictionary
MED	Macmillan English Dictionary
MLD	Monolingual Learners' Dictionary
OALD	Oxford Advanced Learners' Dictionary
OALD6	Oxford Advanced Learners' Dictionary 6th edition
RP	Received Pronunciation
TOEIC	Test of English for International Communication
TD	Bilingual Dictionary

1. Motivation

"The 1980s were a major watershed in learner lexicography. It was clear early in the decade that the next phase in dictionary development would be dominated by the computer" (Cowie 1999: 144). Presently, about 20 years later, working with computer and Internet has become part of everyday life, and so have electronic reference works. Particularly in academic contexts they gradually replace their counterparts in print.

Microsoft's Encarta is certainly one of the most widely known pioneers in the field of electronic reference works. Its tremendous success set off a continuous and fierce competition for the title of most comprehensive, and more recently, also most user friendly electronic reference work. Gradually dictionaries have been included into the bodies of reference works. In the mid-90s, Longman and COBUILD published the first electronic English dictionaries on CD-ROM. Soon afterwards, all major publishing houses followed their example and transferred their monolingual learners' dictionaries to the new medium. Special emphasis should be placed on the word 'transferred' because this is all that was done in the beginning.

With the growing importance of computers and the increasing amount of time that more and more users have been spending staring at a screen, previously unconsidered factors such as usability or accessibility suddenly attracted much attention. Today, the majority of computer users would probably agree that the user-friendliness of an electronic reference work is at least as important as its comprehensiveness.

In this paper, the currently leading English monolingual learners' dictionaries on CD-ROM will be examined. The focus will be on their usability as well as their lexicographic qualities for receptive and productive uses.

Chapter two will attempt to demarcate *monolingual advanced learners' dictionaries on CD-ROM* from other types of dictionaries. It will also concentrate on potential users and possible uses of this type of dictionary as well as on consequences for the presentation of the information.

Chapter three will then deal with the usability, layout and accessibility of the dictionaries. Since the ease of use in general and the design of retrieval facilities in particular greatly determine how fast and how easily a user can find the desired

article, this chapter could also be said to deal with the macrostructure of the dictionaries.

Chapter four will aim at a lexicographic evaluation of the dictionaries. The focus will be placed on important parts of the microstructure such as definitions and examples, grammatical and usage information, pronunciation, or illustrations. Possible influences of the medium will, of course, be taken into account.

As the previous chapter's focus is mainly on the receptive use of the dictionary, chapter five will finally explore the dictionaries' suitability for productive uses and as study aids. Supplementary information given in appendices or additional study options will be closer examined.

Generally, this MA dissertation does not aim at establishing one of the examined dictionaries as 'the' perfect dictionary but rather at exploring and evaluating their individual strengths and weaknesses for average advanced learners of English. It will furthermore highlight their more specialized purposes, and make suggestions for improvements of the CD-ROM dictionaries in question.

2. Theoretical Background

Robert Ilson claims, "the dictionary is the most successful and significant book about language" (1985a: 1). There is certainly no doubt about its importance since, for instance, in Britain "over 90% of households possess at least one, making the dictionary […] indeed significantly more widespread than the Bible (which was to be found in 80% of households in England in 1983, according to the Bible Society)" (ibid.). Herbst and Klotz make a similar, though more precise statement: "in manchen Kulturen, etwa in Großbritannien oder Frankreich […] [bilden: K. M.] große einsprachige Wörterbücher einen wesentlichen Bestandteil der Bibliotheken vieler Privatpersonen"[1] (2003: 14).

Yet, the dictionary to which Ilson, and Herbst and Klotz refer is only one special type of dictionary, namely the dictionary for native speakers. Hence, many people apparently refer to "the monolingual general dictionary for the adult native speaker" (Ilson 1985a: 1) simply as *dictionary*. At the same time, there is a multitude of dictionary types, which make it necessary to take a closer look at the characteristics of the dictionary type discussed in this study. Furthermore, not only the dictionary type, as such, but also its target group and their use of the dictionary shall be thoroughly analyzed. The outcome of this analysis will constitute the basis for the establishment of the criteria for the subsequent evaluation of the dictionaries.

2.1 Dictionary Profile

The point of departure for the following evaluation is the *monolingual dictionary for the advanced learner of English on CD-ROM*. "Each of the phrases used to describe it suggests what other types of dictionary there are" (Ilson 1985a: 1): bilingual dictionaries, dictionaries for native speakers, for beginners or for intermediate learners, who could also speak or learn another language than English or use a print dictionary instead of an electronic one.

[1] In order to enhance the text's comprehensibility, rough translations of quotes will be provided in footnotes.
In some cultures, such as Great Britain or France, large monolingual dictionaries constitute an important part of many private libraries.

2.1.1 Monolingual and Bilingual Dictionaries

The distinction between monolingual and bilingual dictionaries is salient, despite there being attempts to combine both types (for instance Collin 1989). "The TD[2] promises the learner access to the unknown target language via the known mother tongue" (Underhill 1985: 105). In contrast to user-language-specific bilingual dictionaries, monolingual ones are entirely composed of articles in the target language and are thus independent of the user's native language. Usually, learners prefer bilingual dictionaries because they appear to be less demanding and less time consuming than monolingual ones, which also explains the greater variety of bilingual dictionaries in editions and in publishing houses as well as in price and in size (cf. Herbst/Klotz 2003: 102). Learners of all proficiency levels use them; in particular, for looking up primary information, i.e. the translation of unknown words or expressions. With growing competence in the L2, the foreign language, users gradually turn to monolingual dictionaries for decoding (cf. Tomaszczyk 1979). This is most likely due to the fact that bilingual dictionaries often propose only unsatisfying target language equivalents of the headword and smaller dictionaries just mere single-word translations. Monolingual dictionaries encourage "the learner to look beyond a simplistic one-to-one relationship between words in the two languages" (Berwick/Horsfall 1996: 12) and help them discover that both, L1 (the mother tongue) and L2, have their "own view of the world which they are gradually penetrating" (Stein 1989: 43). Even if bilingual dictionaries offer various equivalents for the lemmata, many dictionaries do not distinguish them explicitly enough for the users to be able to directly pick the matching translation. In addition to this, they often lack the detailed secondary information that the definitions in monolingual dictionaries generally include.

However, learners can only successfully use this information for encoding once they have reached a certain proficiency in the L2. Various studies (cf. Atkins/Varantola 1998: 105) indicate that advanced learners "show a greater degree of interest in its guidance on grammar, spelling, and collocation, all of which are associated with the productive use of the language" (Cowie 1999: 181). The value of monolingual dictionaries for encoding becomes particularly noticeable with regard to the treatment of high-frequency function words, which are too complex to be treated appropriately in bilingual dictionaries. Yet, the outcome of Tomaszczyk's study, that

[2] Bilingual dictionary

students rather infrequently use their monolingual dictionaries for productive tasks (except translations), reveals that they typically perceive it as “diagnostic rather than generating” aid (1989: 42). This underlines the importance of a good instruction to the work with the monolingual dictionary in order to enable the learners to efficiently make use of its assets.

Nevertheless, this does not mean that bilingual dictionaries are inferior to monolingual reference works. They do not share the disadvantage of monolingual dictionaries that users can only look up articles if they already know the respective headwords in the foreign language. On occasion it is virtually impossible for learners to find particular lemmata in monolingual dictionaries within a reasonable amount of time, especially if they are, for example, technical terms. This is not the only situation in which the exclusive use of the target language is a drawback of monolingual dictionaries. Since their metalanguage is, of course, also the target language, it is not always certain that their users are able to fully understand front and back matter and to work with them effectively. Bilingual dictionaries, however, usually present this valuable information more easily accessible in the learners’ mother tongues. In summation, “students like bilinguals because they bring instant satisfaction, while teachers prefer monolinguals for their long-term benefits: the user gradually learns to operate in L2 without the L1 barrier as a brake on progress” (Atkins 1985: 22).

2.1.2 Dictionaries for Learners and for Native Speakers

Up to now, the term *monolingual dictionary* has always been used to refer to monolingual (L2) dictionaries for non-native speakers. Many of the characteristics discussed before also apply to monolingual (L1) dictionaries for native speakers, though. Whereas the structural differences between monolingual and bilingual dictionaries are fairly obvious, monolingual L1 and L2 dictionaries seem to be organized similarly on first sight: Both have only one word list whose entries consist of a lemma and a definition. Nevertheless, there are important differences between them, which mostly result from the target user groups and their uses of the dictionaries.

Native speakers commonly consult dictionaries in order to check the meaning(s) or spelling(s) of difficult low-frequency words, which are often “thrown up in the

course of specialized reading – technical and scientific terms, dated literary vocabulary, foreign loans and so on" (Cowie 1983a: 138). Accordingly, native speakers usually look for exhaustive dictionaries, which include these special terms. While a short, precise definition of the lemma is sufficient for the native speaker, the headwords in learners' dictionaries have to be explained in more detail and in a simpler language. Simpler, more detailed and thus longer definitions take up more space in the dictionary, though, which inevitably results in a lower number of headwords[3]. Presently, in contrast to L1 dictionaries, most L2 dictionaries restrict the vocabulary used in explanations to approximately two or three thousand words, the so-called defining vocabulary. In general, dictionaries list their defining vocabulary in one of the appendices. "The idea, of course, is that the user will familiarize himself or herself with all the words in the specified list and so will automatically understand all the definitions" (Kirkpatrick 1985: 9).

In contrast to native speakers, learners mostly deal with high-frequency everyday words and expressions. They are more likely to use a bilingual instead of a monolingual dictionary to look up technical or scientific terms. Moreover, since these terms are hardly ever polysemous, part of idiomatic expressions or formed irregularly, they should be fairly easy to handle for learners. Words with different meanings and/or varied shades of meaning, not to mention idiomatic expressions, are more challenging. Even though their meanings and uses are usually evident to native speakers, they have to be clearly distinguished for learners. "With regard to idioms, it is important for the foreign learner to be shown the precise limits of the idiomatic unit, and any possible internal variation" (Cowie 1983a: 139). Therefore, "in order to ensure that the pattern information is actually understood, but also to elucidate the definitions, all current EFL[4] dictionaries include a copious amount of examples" (Heuberger 2000: 2).

In addition to this, learners need more guidance with function words to which hardly any attention is paid in L1 dictionaries. Native speakers usually employ these words instinctively but learners generally do not have the same feeling for the language and thus find clear instructions helpful. The same applies to examples of usage or style and register labels. They are "invaluable to learners as they indicate to them the context and situations in which particular words or meanings are

[3] This also applies to electronic dictionaries, which, although they do not suffer from space limits, are still mainly based on their printed counterparts.
[4] English as a foreign language

appropriate or inappropriate" (Kirkpatrick 1985: 11). Apart from sometimes marking old-fashioned or slang words, dictionaries for native speakers usually do not and do not need to employ labels. Yet, L1 dictionaries also contain information that is omitted in most L2 dictionaries, such as etymologic information. In general, etymologic facts do not help learners comprehend a headword's meaning or use it properly.

Similarly, the transcription of headwords using the phonetic symbols of the IPA (International Phonetic Alphabet) is mostly just a standard feature of learners' dictionaries. Currently, working with the IPA is (or at least should be) already taught in school or at a relatively early stage of learning, ideally in combination with general instructions for dictionary use. It seems that the majority of learners appreciate the IPA symbols as pronunciation help, whereas many native speakers appear "to have either an antipathy towards, or a lack of understanding of, phonetic symbols" (Kirkpatrick 1985: 9). Unless they have had contact with the IPA in a foreign language class in school or university, many of the symbols will be incomprehensible to them. This is why the compilers of a number of monolingual dictionaries for native speakers, such as Merriam Webster, still prefer the respelling scheme.

All of these characteristics, i.e. fairly easily comprehensible definitions of lexical and function words offering detailed information about their senses and their morphological, grammatical and semantic particularities, are typical of beginner and intermediate monolingual L2 dictionaries as well as of those for advanced learners. Some of the few differences between them are that beginners' dictionaries cover a smaller vocabulary, that their defining vocabulary is probably further restricted than the defining vocabulary of advanced learners' dictionaries. Their definitions should therefore be even more easily comprehensible.

2.1.3 English and French Dictionaries

Compared to monolingual dictionaries of other languages, straightforward definitions are actually one of the assets of English monolingual L2 dictionaries. These definitions are intelligible even for beginners and adapted to the needs of the foreign language learner. The compilers of French monolingual dictionaries, for instance, usually emphasize the French dictionary tradition and prioritize native

speakers of French. There is no distinction between native and non-native speakers, which results in monolingual dictionaries that are well adapted to the needs of francophones but which largely surpass the abilities of even intermediate learners of French. The emphasis on native speakers becomes particularly obvious if one compares articles in French and English (L2) dictionaries: English lexicographers aim at clear and comprehensible explanations adapted to the skills of the learners and hence restrict themselves to the defining vocabulary. French lexicographers, in contrast, "favour discursiveness and implicit […] treatment of the data" (Lamy 1985: 33). Examples in French monolingual dictionaries such as the Petit Robert often demonstrate the *bon usage* (proper French, very formal and sometimes outdated) instead of illustrating the actual use in the everyday language.

In contrast to French monolingual dictionaries, "setzen die englischen 'learners' dictionaries' nicht nur weiter auf Innovation […], sondern haben zudem zahlreiche der in den letzten Jahren unterbreiteten Verbesserungsvorschläge aufgegriffen und in den aktuellen Auflagen […] L2-lexikographisch verankert"[5] (Zöfgen 1994: 326). British publishing houses, in particular, manage to combine lexicographic tradition with technical innovation, which is probably at least partly due to the heavy competition on the English L2 dictionary market. For this reason, the present evaluation concentrates on five British publishing houses, viz. Cambridge, Collins COBUILD, Longman, Macmillan and Oxford. Their dictionaries are the most widespread English L2 dictionaries in Europe and undoubtedly dominate the EFL and the ESL[6] markets (cf. Heuberger 2000: 3). In Europe, except for Merriam Webster, L2 dictionaries issued by American publishing houses can generally not keep up with their British counterparts and are therefore not considered in this evaluation (cf. Herbst 1996: 322).

2.1.4 Electronic and Print Dictionaries

Already in the mid-90s, the first publishing houses presented English dictionaries on CD-ROM. By now, all major British publishing houses have successfully entered the electronic dictionary market. Herbst and Klotz (2003: 252) distinguish three

[5] In contrast to French monolingual learners' dictionaries, English learners' dictionaries not only rely on constant innovation but have also taken up some of the suggestions for improvement made over the past years and have implemented them in their present editions.
[6] English as a second language

groups of electronic dictionaries: 1) PC dictionaries on CD-ROM, which have to be installed on a computer, 2) hand-held electronic dictionaries, small devices "in die das Wörterbuch entweder fest eingespeichert ist oder über ein Speichermedium eingelesen wird"[7] (ibid.) and 3) Internet based dictionaries. Considering the rapid progress of information technology, the distinction between PC and hand-held dictionaries is likely to blur in the near future. Already now it is possible to store several electronic dictionaries on one hand-held and to access the Internet via cell phones in order to check Internet based dictionaries. One could imagine hand-helds that offer the same information and the same functions as CD-ROM dictionaries and which might also be used to search Internet based dictionaries. Presently, they do not yet have the same storage capacities as PCs, though. Apart from electronic dictionaries aimed at the use by human beings, there is a fourth group of electronic dictionaries, those employed in word processing applications, for instance spell checkers, or for machine translation (cf. Schwalm 1998: 9).

In this day and age, dictionaries on CD-ROM are probably the most commonly consulted group of electronic dictionaries, although the importance of Internet based dictionaries is steadily growing. The main characteristics of printed monolingual learners' dictionaries also apply to electronic monolingual learner's dictionaries on CD-ROM, which leads to similar microstructures i.e. the structure of the individual dictionary entries. Their macrostructures, however, differ remarkably. "A print lexicon is a fixed, physical artifact, and the macrostructure is mapped onto the storage medium of that artifact" (Burke 1998: 4). Even though the data of electronic dictionaries is also encoded in a physical object, the CD-ROM, it is irrelevant for the user where exactly the data is stored on the CD-ROM. By configuring the interface according to their preferences, users can decide how the dictionary information is presented. Burke therefore claims that users do not perceive electronic dictionaries as physical objects. "In this way, an online [or CD-ROM: K. M.] lexicon is essentially dynamic, whereas a print lexicon is inherently static" (ibid.).

In contrast to the traditional use of the term *macrostructure*, meaning the arrangement of a dictionary's entries, Burke employs the term to refer to the steps that the user has to take in order to find a desired entry. This implies the physical, mostly alphabetical, structure of print dictionaries. Their layouts are determined by the method of access "but it has no such implication with online [or CD-ROM: K.

[7] In which the dictionary is either stored or imported from a storage medium

M.] lexicons, given the lack of essential physicality" (ibid.). This does, however, not mean that electronic dictionaries do not have macrostructures. If *macrostructure* is understood as procedure(s) rather than a physical state, an electronic dictionary's macrostructure is represented by the means of access to its entries, i.e. its search function(s). An electronic dictionary has consequently as many macrostructures as it features search functions (cf. ibid.).

A more apparent difference between electronic and print dictionaries is the use of multimedia features, such as graphic, audio and video material, and hypertext. They "allow the lexicographer to describe the language *more naturally and vividly* than a printed work could ever hope to accomplish, not forgetting the increased amount of attractiveness" (Heuberger 2000: 3) for users whose skills and needs will be discussed in the following.[8]

2.2 User Profile

Only one out of the five dictionaries evaluated, the Oxford Advanced Learners' Dictionary, OALD, is explicitly aimed at advanced learners. Even though the remaining four dictionaries do not clearly specify their target groups, it is very likely that they are aimed at advanced learners as well. All of them show typical features of monolingual learners' dictionaries and are too exhaustive to be aimed at beginners or intermediate learners.

Advanced learners' dictionaries have become "an increasingly sophisticated reference tool, consciously adapted to specific study needs, but in danger with each innovation of outstripping the often rudimentary reference skills of those it is designed to serve" (Cowie 1983a: 136). This development has led to a rather strange perception of monolingual learners' dictionaries by their users: "on the one hand, there is the high value that users customarily place on their dictionaries […] and on the other the quite widespread ignorance of their structure, content, and possible functions, to which reference has just been made" (Cowie 1999: 178). Several studies, some of which are presented and compared in Cowie 1999, reveal indeed that the majority of learners do not know how to efficiently extract all information given in a dictionary article. "Jeder zweite Benutzer hat nach eigenem Bekunden

[8] For the sake of a clearer presentation, from now on the term *monolingual dictionary* will be used to refer to monolingual advanced learners' dictionaries and *electronic dictionary* will denote dictionaries on CD-ROM.

Schwierigkeiten bei der Konsultation und ist häufig nicht in der Lage, aus dem Informationsreichtum – vor allem aus den Angaben zur Syntax – Nutzen zu ziehen"[9] (Zöfgen 1994: 58). This might be due to the fact that only a small fraction of learners actually read the introduction to and the instructions for the work with the dictionary[10]. What is more, teachers in school or university often do not devote enough time to introduce their students to the work with the dictionary. There is evidence, however, that the learners' skills improve with a growing proficiency in the L2 and that "among the most sophisticated language users, constant movement from one reference resource to another is the rule rather than the exception" (Cowie 1999: 187).

In order to enable users to extract as much information as possible from a dictionary, its articles should be clearly structured and the information should be presented as explicitly as possible. Although reading the blurb is certainly desirable and recommended, it should not be a prerequisite for the successful use of the dictionary. Therefore, when designing a new monolingual L2 dictionary or a new edition, its makers should bear in mind not only the rather low reference skills of its potential users but also the relative learning difficulty of certain features of English, such as the great variety of meanings of polysemous words and the many possible combinations with them. Furthermore, the dictionary should cover the learners' reference needs, i.e. the situations in which and the tasks for which they use the dictionary (cf. Cowie 1983a: 135). Zöfgen ranks the situations in which learners use monolingual dictionaries as follows: "1. Herübersetzen (L2 → L1); 2. Hinübersetzen (L1 → L2); 3. Textrezeption; 4. Textproduktion […], 5. Konsulation des Wörterbuchs beim Sprechen und Hören (Konversation) sowie 6. zum Zwecke des (Vokabel-)Lernens"[11] (1994: 53). Cowie's comparison of three studies on learners' use of dictionaries confirms that learners usually "prioritized activities in the written over those in the spoken medium" (1999: 187). Even though learners use monolingual dictionaries more often for decoding than for encoding (except for translations), learners' dictionaries should equally cover both purposes.

[9] One user in two admits having difficulties with the consultation and is often not able to make use of the multitude of information, syntactic information in particular, given in it.
[10] Only 11 percent of Béjoint's subjects had consciously read the introduction.
[11] 1. translation into the mother tongue (L2 → L1); 2. translation into the target language (L1 → L2); 3. text reception; 4. text production [...]; 5. the consultation of the dictionary when speaking or listening (conversation) and 6. as a study aid (for vocabulary aquisition)

In general, learners look up meanings of words and "those categories of lexical items which present semantic of cultural, rather than syntactic or functional, difficulties" (Cowie 1999: 197). This goes along with their preference of monolingual dictionaries for the receptive rather than the productive use. Concerning the productive use of monolingual dictionaries, learners mainly use them to find correct spelling(s) of words or to correct potential mistakes, which is according to Herbst and Klotz (2003: 19) the third major purpose of monolingual dictionaries besides reception and production of texts. Learners only seldom refer to monolingual dictionaries for detailed information on grammatical or syntactic particularities of words or expressions. This could possibly be due to their lack of knowledge of (grammatical) codes and to the complex grammatical apparatus on which monolingual dictionaries are usually based. Nevertheless, they generally appreciate examples, which show a word's usage, as well as usage notes with information on contexts in which difficult words are employed. Such examples serve both purposes since they are helpful for the deduction of a word's meaning as well as for the composition of new sentences.

To sum up, although learners of English might not know and might not use all functions of their monolingual dictionaries, they have fairly precise demands on monolingual learners' dictionaries. Important criteria for the choice of a monolingual dictionary are:

> Exhaustivität (komplette Information zu einem Stichwort, möglichst große Zahl von Einträgen, Zahl und Qualität der Definitionen), Klarheit und Präsentation des Datenmaterials, Zahl und Verständlichkeit der Beispiele, hoher Anteil an gesprochener Sprache, Synonyme und Antonyme.[12] (Zöfgen 1994: 55)

2.3 Criteria for the Evaluation of the Dictionaries

The principal requirements for the content and structure of advanced learners' monolingual dictionaries, as well as the skills, needs and demands of their users form the basis for the evaluation of the following five advanced learners' monolingual dictionaries on CD-ROM:

- Cambridge International Dictionary of English version 1.03 (CIDE),
- Collins COBUILD on CD-ROM version 3.1 (COBUILD),
- Longman Dictionary of Contemporary English edition 2003 (LDOCE),

[12] Exhaustiveness (complete information about a headword, a high number of entries, number and quality of definitions), clarity and presentation of the data, number and comprehensibility of examples, high proportion of spoken language, synonyms and antonyms.

- Macmillan English Dictionary version 1.4 (MED) and
- Oxford Advanced Learner's Dictionary 7 (OALD).

The emphasis of this study will not only be on linguistic criteria, but also on the appropriate use of the medium CD-ROM and the user-friendliness of the dictionaries.

Since learners mostly use their dictionaries for looking up the meaning(s) and/or the spelling(s) of words, this study concentrates mainly on the receptive use of monolingual dictionaries. The process of looking up information in a dictionary can be split up into two parts: first finding the right article and second finding the desired information within the article. The ease and speed of access to the article depend on the dictionary's layout and its macrostructure(s), i.e. its retrieval functions. Therefore, the next chapter on the dictionaries' macrostructures centers on an evaluation of the user-friendliness of their layouts and access structures and an assessment of how well their compilers made use of technological possibilities.

The layout of the microstructure, the structure of the individual articles, and the information types, which they include, determine if and how quickly learners can locate the information sought within an article. The entries will be evaluated according to lexicographic criteria, such as the types of information which they include. Nevertheless, the question of how the information is displayed within the article is, again, of a major importance to the user-friendliness and will thus be examined as well.

Despite the emphasis on the receptive use, the dictionaries will also be assessed for their usefulness for encoding and for vocabulary learning. Furthermore, pedagogic principles on the work with the dictionary and the question whether or not the dictionaries are suitable for everyday use in school and university will be taken into consideration.

Each chapter will begin with a short literature review in oder to present in a condensed way the most important points and the central questions that will be discussed in the chapter. If necessary or helpful, these points will be classified and ranked according to their importance for the quality assessment. Afterwards, a closer look will be taken at the individual points. Theoretical considerations will be discussed first and then their implementation in the dictionaries in question. Examples from the dictionaries evaluated are inserted in order to illustrate their individual strengths and weaknesses. As each chapter has a different focus, it is not

possible to always employ the same examples. The processes of finding the individual examples will therefore be explained in the respective chapters.

All figures and tables mentioned in the text can be found in the appendices. Appendix I comprises screen shots and figures, Appendix II includes the articles for the five test words discussed in chapter four and Appendix III contains tables. For the sake of completeness, Appendices I and II include screen shots of all search facilities, results lists and articles for the test words even though they might not be referred to explicitly in the paper.

3. Usability

ISO 92411-11: 1998, Ergonomic requirements for office work with visual display terminals (VDTs) – Part 11: Guidance on usability, lays down guidelines for the evaluation of software usability. It defines usability as "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use" (1998: 4) (cf. Fig. 1). The programs, their possible users and the contexts in which they are likely to use them have been specified in chapter two. This chapter focuses on the question whether it is possible to achieve the users' goals, to find the desired articles and to work with them, effectively, efficiently and satisfactorily.

In order to do this, it is necessary to first take a closer look at the terms effectiveness, efficiency and satisfaction. Effectiveness stands for "the accuracy and completeness with which users achieve specific goals", efficiency comprises "the resources expended in relation to the accuracy and completeness with which users achieve goals" (ibid.: 4), which could be psychological or physical demands, time or money (cf. ibid.: 7), and satisfaction the "freedom from discomfort, and positive attitudes towards the use of the product" (ibid.: 7).

In the case of electronic dictionaries, effectiveness refers to the accessibility of the program, to whether or not the user is able to find the desired information in the dictionary. This can only be done efficiently if the program directs the user to the article that serves their needs best and preferably also indicates where in the article the user can find the desired information. Since a thorough evaluation of satisfaction would require further tests with potential users, in this paper it is restricted to an assessment of the programs' user-friendliness, which greatly depends on the design of their interfaces.

Accordingly, this chapter will first concentrate on layout and design of the programs' interfaces and then on the dictionaries' access structures, the possibilities they offer to find the information sought.

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3.1 Interface Design

A comparison of older versions of electronic dictionaries to up-to-date editions reveals that the most obvious changes that have been made are in the layout and in

the search facilities. This indicates the great importance that dictionary makers attach to the design of electronic reference works. With the help of colorful layouts, clearly structured main windows containing many small windows linking to other functions of the appliance and the option to arrange these windows according to the users' preferences, compilers and IT specialists try to make their electronic dictionaries as easily accessible as possible.

In many reviews of print dictionaries, the evaluation of their layouts plays either only a minor role or is restricted to an assessment of the dictionaries' macrostructures. Herbst and Klotz, for example, list in their enumeration of aspects determining a dictionary's layout aspects of the dictionary's (physical) access structure such as the "Gestaltung der Artikelstruktur, dem Einsatz artikelübergreifender Darstellungsformen bis hin zu Querverweissystemen"[13] (2003: 191/192) and "generelle Layout-Gesichtspunkte"[14] (ibid.:192), which they do not further specify. They only mention positive effects of the use of colors to highlight headwords and the fact that run-on entries are not exactly user-friendly. With regard to "Layout und Druckbild"[15] (1990: 125), Jehle concentrates on remarks about the quality of the print, the arrangement of the entries and mistakes made by the compilers. He states that "umfassende Urteile über die Druckbildqualität […] die absolute Ausnahme darstellen" (1990: 126) but that many reviewers "sich jedoch einen Sport daraus zu machen [scheinen: K. M.], in ihren Rezensionen Druckfehler und andere redaktionelle Inkonsequenzen ausfindig zu machen"[16] (ibid.).

The above discussed criteria are, of course, neither adapted to nor sufficient for an evaluation of the layout of electronic dictionaries. Despite their seeming insignificance for the quality of (print) dictionaries, in the eighties layout and interface designs have already been of major importance for the quality assessment of computer programs.

OALD defines *interface* as "the point where two subjects, systems, etc. meet and affect each other". Consequently, a digital interface is "the medium that is placed between humans and binary data." (Dabbs 2001: 6). It is what users see on the

[13] The configuration of the article structure, the application of comprehensive forms of presentation referring to more than one article and systems of cross-referencing
[14] General layout criteria
[15] Layout and print
[16] He states that while comprehensive judgments about the print quality are absolute exceptions, many reviewers focus in their critics on finding misprints and other editorial inconsistencies.

computer screen (and sometimes hear): windows, taskbars, icons, texts, graphics, sounds, etc. Therefore, apart from the quality of the information displayed, "how a screen is organized and how its information is actually presented are crucial to achieving the design goals of fast and accurate comprehension and control execution" (Galitz 2002: 665). The high importance of good interface design for working effectively with an application becomes obvious if one tries to operate a program with a poor interface. "Interface distractions cause a person to think about things they shouldn't have to think about, and divert one's attention from performing a task or satisfying a need" (Galitz 2002: 111). Speaking about poor interface design, confusing navigation, excessive page scrolling and "information overload" (Leech/Nesi 1999: 302) as well as "stale design caused by emulation of printed documents and past systems" (Galitz 2002: 111) immediately come to mind. Yet, there are more features which can possibly affect the design and the usability of Graphical User Interfaces (GUI). The subsequent evaluation of the GUI designs of the five tested dictionaries will be based on Wilbert O. Galitz' general guidelines for GUI design (2002: 656/657). He groups important design principles into the following categories: amount of information, visual clutter, organization, focus and emphasis, control placement, navigation, esthetics and consistency.

3.1.1 Amount and Presentation of Information

Presenting the 'proper' amount of information on the screen involves quantitative as well as qualitative aspects, or in other words, the display of all the information necessary to perform an action. Quantitative aspects refer to the screen elements, and qualitative aspects to the content, the actual information in which the user is interested. Too much information and a too high screen density tend to confuse users since "there will be greater competition among a screen's components for a person's attention" (Galitz 2002: 139), resulting in longer search times. This also makes it harder for the user to take in the screen's structure right away. Yet, presenting the user with too little content is as user-unfriendly as displaying too much of it. Users may be forced to scan and memorize several pages in search for the desired information. "As a rule of thumb, content should account for at least half of a page's design, and preferably closer to 80 percent" (Nielsen 2000: 22).

The main differences between the dictionaries in question are the lengths of pages and the amount of space they grant the article part. While CIDE, MED and OALD display all articles in a row, COBUILD and LDOCE present only one article at a time. COBUILD displays the entire article whereas the articles in LDOCE can be divided into several sub-articles. If a lemma exists in only one word class, the whole article is displayed; if the headword exists in more than one word class and/or in compound nouns, the article is divided into several parts of which LDOCE shows only one at a time. CIDE's article window makes the best use of the space available and grants most of the space to the article itself. Taskbars and navigational aids are limited to a small margin at the top of the window. COBUILD also accords most of the space to the article. Both offer their users the option to adjust the size of the article part to their preferences. CIDE has a separate article window, which users can easily resize. In COBUILD, users can alter the space that is granted to the search part and to the article part. LDOCE, MED and OALD feature thick top bars with their logos and names and thus waste valuable space. Their use of small extra information windows limits the space available for content even further. Yet, MED grants slightly more space to the content than OALD and LDOCE.

Even though Galitz's comments on the length of pages and the use and misuse of scrolling refer to web pages, they are also relevant partly to the design of electronic dictionary interfaces (cf. 2002: 142/3). He states that several short pages are most useful when users mainly try to quickly find specific information. If they often look for explanations of entire concepts, it is preferable to present these on only one page. In order to facilitate the navigation on such long pages, they should feature internal links to their individual parts or subtopics. Galitz also favors long pages if it can be expected that users will print them out or copy them to a word processor.

Since dictionary users need both, fast information retrieval and detailed explanations of rather complex concepts, dictionary makers face the challenge of finding ways to combine both basic layout principles. Apart from not being adapted to the medium at all, CIDE's, MED's and OALD's policy of listing all articles on one page is certainly the least favorable for the learner. It is unsuitable for a quick print out of a page since it requires the user to copy the respective article to a word processor or to deal with advanced printer settings. Furthermore, it also makes it virtually impossible for the learner to estimate the length of an article and may "disrupt the user's perception of spatial location within a page" (ibid.: 144). All of

the three dictionaries feature scroll bars, which roughly indicate if the article displayed on the screen is located at the beginning, in the middle or at the end of the dictionary. Such indications are superfluous, though, in alphabetically sorted dictionaries. What is more, OALD's scroll bar is more of a hindrance than a help. Its users cannot move it with the mouse's scroll wheel and are forced to click on the arrows at the either end of the scroll bar or to click in the article window and use the arrow keys in order to move the text up or down.

Even though LDOCE's and COBUILD's policy of presenting only one article per page solves these drawbacks, it is not perfect either. Depending on the length of the article, it may still not fit on the screen forcing the users to scroll down in order to see it in its entirety. However, "viewers hate to scroll; they may scroll downwards, but they hate scrolling back up to find all the bits and pieces that vanished off the screen once they began scrolling" (Dabbs 2001: 43). According to Thissen, the acceptance to scroll has increased lately but "Untersuchungen haben gezeigt, dass gescrollter Text langsamer gelesen wird und dass er Probleme bei der inhaltlichen Verarbeitung der Informationen bereitet. Leser verlieren bei längeren Seiten oft den inhaltlichen Zusammenhang"[17] (2003: 112). Certainly, it is impossible to completely avoid scrolling but, as LDOCE, MED and OALD show, there are ways to avoid excessive scrolling and to direct users to those parts of the articles they are interested in. "In any case, all key information should be visible on the initial screen because scrolling can cause **accessibility problems**" (Nielsen 2005).

LDOCE, MED and OALD feature small windows with additional information on the article, which is applicable to all the meanings and word classes of the headword. They are displayed to right of the dictionary article window. This way, without having to scroll, users always have the information they display at hand, no matter which part of the article they are at. In addition to this "people, generally speaking, are also more likely to have the patience to read short volumes of text than copious numbers of paragraphs or pages" (Dabbs 2001: 43). Yet, these small windows have a major drawback: should learners want to copy an article to a word processor or to print it, they have to individually copy the information given in each window or have to print out the whole screen, not only the article sought.

[17] Research shows that scrolled text is read more slowly and that it causes difficulties in the comprehension of the content. On long pages, readers often lose track of the interconnections of the content.

MED also features short tables of content for some, but not all, long and complex articles, which are presented at the top of the articles below the lemmata. Were the points in these tables linked to the corresponding parts in the articles, scrolling could be avoided completely. Since, however, this is not (yet) the case, these tables of content are not as helpful as they could be. LDOCE's approach to reduce the length of pages by opening only one part of the article in which the user is interested, is probably the best way of avoiding the presentation of too much (unnecessary) information on the screen and thus, excessive scrolling. The only disadvantage of LDOCE's systems is that the user can open just one sub-article at a time, forcing the learner to manually open each part of the article individually. This can become a particularly unpleasant user experience if the learner tries to compare, for instance, the meanings of a noun and the corresponding verb. Here again, the disadvantage could easily be eliminated if the program allowed its users to open as many sub-articles as he/she desires.

The amount of information that a page contains influences not only its length but also its density and complexity, which can enhance or affect the page's esthetic appeal. Density measures the proportion of characters displayed on a screen and complexity the proportion of screen elements on the whole. "In general, studies show that increasing the density of a display increases the time and errors in finding information" (Galitz 2002: 139). Since the dictionary article contains the most important information on the page, texts take up the largest part of the interface, which automatically leads to fairly high screen density levels. Nevertheless, visual clutter can be avoided if the texts are well structured and if essential parts of the text and important screen elements are emphasized properly. Or as Galitz puts it, pages should "provide a visually pleasing composition through adequate use of white space, balance [and: K. M.] groupings" (ibid.: 656). Since esthetic questions are always related to personal preferences, only the structure of the interfaces' components, the use of colors and their impact on the interfaces' clarity will be briefly discussed here.

COBUILD structures its articles probably most visibly. Not only do the various sub-articles form individual groups, they are also clearly distinguished from each other by blank lines. This structure enables the learner to quickly locate the part in which he/she is interested. COBUILD's use of colors is mainly restricted to blue for definitions and black for examples. Black text on white ground has a high contrast

and ensures optimal legibility. Yet, "legibility suffers […] for color schemes that make the text any lighter than pure black" (Nielsen 2000: 125). The green highlighted headwords in COBUILD's grammatical explanations demonstrate this. While the green font is supposed to make the headword stand out from the sentence, it actually has the opposite effect. The headword is less prominent than the rest of the example sentence and the explanations. In addition to this, "blue text is slightly harder to read than text in other colors such as black or red (assuming white backgrounds) because the human eye has fewer receptors for blue wavelengths" (ibid.: 64). Nevertheless, it also has a positive effect on the users in that they get acquainted with blue being the color of COBUILD's explanations. As a result, they can immediately distinguish blue definitions from black examples, grey labels and other information.

CIDE also structures its sub-articles into small groups but has higher levels of density since the sub-entries are more compact and not as clearly distinguished as in COBUILD. Similar to OALD, CIDE slightly alters the background color of the current article in order to make it stand out from the preceding and the following entries. In CIDE, the article's background color is, however, only slightly more saturated than the usual background color and the difference is fairly hard to detect. CIDE, LDOCE and OALD use font colors other than black only to highlight single words instead of whole sentences like COBUILD. Even though LDOCE's interface also has a higher density than COBUILD's because there are no blank lines inserted between the sub-articles, it is still relatively easy for the learner to find the desired information. LDOCE employs different fonts and different shades of blue in the dictionary and red in the Activator, to direct the users' attention to important pieces of information, such as synonyms or compound nouns.

MED and OALD have rather high density levels because they do not feature blank lines between sub-articles either. If MED displays only short entries, its users can easily distinguish between the articles, particularly since all articles except the article for which the user has searched are grayed out. MED is the only dictionary which employs negative text. Its search window features white text on a red background. "Although the contrast ratio is the same as for positive text[18], the inverted color scheme throws people off a little and slows their reading slightly" (Nielsen 2000: 125). Nevertheless, it contrasts well with the article window making

[18] For example, black text on a white background

it easier for the users to distinguish both parts. LDOCE and MED enhance their legibility by displaying only one example per line, whereas OALD presents several examples per line, which adds to the visual clutter. OALD's use of colors to highlight the headings of sub-articles is rather unpleasant and not very helpful. Even though the lemma is blue, bold and in a bigger font, the red cross-references at the end of the sub-articles catch the user's eye. Due to the low contrast between the background color and their green font, headlines of sub-articles attract even less attention than the articles' normal black text. The colored headwords, headlines and cross-references consequently do not compensate the high density of elements in the article window.

3.1.2 Organization of Information

Closely related to the amount of information displayed the arrangement of the information on the screen, which should be customized to the users' needs and skills. "An organizational scheme's goal is to keep to a minimum the number of information variables the user must retain in short term memory. A logical, meaningful, and sensible arrangement of screen data and content will lower this memory requirement" (Galitz 2002: 115) and will make it easier for the learner to distinguish important from not so important information. This is necessary because "je unstrukturierter der Bildschirm ist, umso mehr muss das Auge suchen, umso mehr Energie verwendet das Gehirn zur Definition einer Struktur und umso geringer wird die Bereitschaft zur Beschäftigung mit dem Bild"[19] (Thissen 2003: 147). There is a great variety of organizational schemes, of which the most important ones for electronic dictionaries are probably sequence of use, frequency of use, function or category and importance. Normally, GUIs are designed on the basis of not just one organizational scheme but based on a combination of two or more.

The two most important and most frequently consulted parts of a dictionary interface are the search facility and the dictionary entry, the result of the search. All other functions are of a relatively minor importance to the everyday use of the dictionary and consequently exert a minor influence on its layout. This should also be reflected in the design of the interface. Research by Streveler and Wasserman

[19] The less structured a screen is, the more the eye has to search, the more energy the brain has to invest to define a structure and the more the willingness to deal with the picture decreases.

(1984, cited in Galitz 2002: 117) shows that usually the upper-left part of the screen is the center of attention. Therefore, information located in this part of the screen is perceived much faster than data displayed in its other parts. Their findings indicate that it takes the longest to find information presented in the bottom-right corner of the screen. The fact that users usually look at the top-left corner of the screen should also influence the decision where to locate the page's focal point (cf. Galitz 2002: 117). "Every page needs a focus. Viewers want to know where to look first, so want to be clearly shown which piece of information is the most important on the page" (Dabbs 2001: 42). In (print) dictionaries, lemmata certainly appear to be the most important type of information on a page since they guide the learners to the information they are looking for. When searching for a specific information, users of electronic dictionaries, however, usually do not scan the dictionary but simply key in a search word. Therefore, the search function should be the focus of the interface, which is probably why all of the tested dictionaries place it in the top-left corner. Lemmata, the focal points of the article section, and the article structures will be discussed in more detail in chapter 4.1.

The sequence in which the two major parts are consulted is relatively fixed; first the user searches a word and then he/she moves on to the closest matching article. Therefore, in order to ensure natural movement sequences, a left-to-right flow should be maintained and the article should be placed to the right of the retrieval facility. All of the tested dictionaries are designed this way except LDOCE, in which the search function is placed above the article. Even though such a top-to-bottom ordering may also appear to be reasonable, since English texts are read from the top (left) to the bottom (right) corner, there are several reasons why a left-to-right organization is more favorable for electronic dictionaries.

Eyeball fixation studies indicate that generally screens are first scanned from left to right and only afterwards from top to bottom (cf. Streveler/Wasserman 1984 and Galitz 2002: 117). According to Galitz, "usually one's eyes move first to the upper-left center of the display, and then quickly move through the display in a clockwise direction" (2002: 117). The different presentations of the contents of the search part and the article part also suggest a left-to-right organization in order to facilitate their perception. Weiland and Gizycki state that "in der rechten [Gehirnhälfte: K. M.] ist u.a. das nonverbale, bildhafte und ganzheitliche Denken lokalisiert, in der linken

Gehirnhälfte dagegen das verbale, rechnende und analytische"[20] (2002: 34). This means that the search facility can be more easily processed by the right hemisphere of the brain because the retrieval facility is usually composed of one or more lists of words, whereas the article part contains texts and illustrations, which can be better handled by the left hemisphere. As information in the left part of the screen is processed by the right hemisphere and vice versa, it is advisable to locate the search facility in the left and the dictionary entries with texts and illustrations in the right half of the screen. This way, the information is directed straight to the appropriate part of the brain and can thus be processed faster.

Apart from the two main parts, search field and dictionary entry, three out of five dictionaries, namely LDOCE, MED and OALD, feature small windows with extra information on the article. In all of them, the search field is located in the left or at the top, the article in the center and the extra information windows in the right part of the screen. Again, the ordering is adapted to the sequence and frequency of use. It is very likely that learners first scan the article before they consult the extra information windows with etymologic facts, example sentences or information about the use of the headword. Since the information given in these windows is mainly directed at the productive use of the dictionary, users will probably not consult them every time they look up a headword. Consequently, their location in the right part of the screen is ideal. The user does not run the risk of overlooking important information, which in keeping with Galitz (cf. 2002: 117) could easily happen if, for instance, the main article were placed in the very right part of the screen. The dictionaries' users will quickly familiarize with the organization of the information displayed in these windows and will consult them whenever necessary. Moreover, this ordering makes effective use of the form of the screen. According to Dabbs, users "find landscape-shaped content more comfortable to read [which: K. M.] is extremely important for interface design since the screen is very often landscape-shaped too" (2001: 43). Had the interface a top-to-bottom ordering and were these windows located underneath the main article, the users would be forced to scroll up and down in order to work with the windows and the article.

LDOCE and OALD clearly distinguish their extra information windows from each other and from the main article. Each window focuses on one specific type of information. MED features only one extra information window, which is not as

[20] In the right hemisphere is localized the non-verbal, picture-like and unified thinking while that in the left hemisphere is localized the verbal, calculating and analytical thinking.

distinctly separated from the main article as in the other two dictionaries. While the user immediately knows what type of information to expect in LDOCE's and OALD's extra information windows, he/she has to scan MED's window to discover which extra information on the headword the dictionary includes. Even though this arrangement is more time-consuming it is appropriate in MED as the data presented in its extra information window is more diverse than that presented in LDOCE and OALD, and, hence, cannot be grouped into only a few categories. It would be rather user-unfriendly to include more than three extra information windows as otherwise they would have to be very small and the user would undoubtly have to either enlarge them or to always scroll up and down to read them.

All in all, a left-to-right ordering of the main parts of the layout is preferable. It can also be nicely combined with an internal top-to-bottom ordering of the individual parts. The main parts of all of the tested dictionaries are internally arranged from top to bottom so as to help guide the user's eye. "Research on human scanning finds a top-to-bottom presentation of [listings of small pieces of: K. M.] information is best" (Galitz 2002: 118). For navigational reasons, extra or pop-up windows, for example advanced search windows, should be opened in the center of the screen. OALD displays such windows in the top-left quadrant of the screen, which according to Galitz findings (2002: 117) facilitates their perception. Again, LDOCE is the only exception. It opens all extra windows in the top right quadrant of the display, which is particularly user-unfriendly if they include enumerations such as search results or word set lists.

3.1.3 Navigation

To facilitate the work with the interface, it is "critical that users be able to find the appropriate navigation area effortlessly, differentiate between the choiced, and have a good sense of what lies beneath links" (Nielsen/Tahir 2002: 19). Both, the ordering of screen elements in general and the arrangement of controls in particular, influence the ease of the screen navigation. It "can be made obvious by grouping and aligning screen controls, and judiciously using line borders to guide the eye […], focus attention on the most important parts of a screen" (Galitz 2002: 117).

The controls used in the five tested dictionaries can be grouped into three categories: 1) reference work controls, used to switch between several reference

works, 2) dictionary controls, employed to work with the individual parts of the dictionaries and 3) settings controls. Due to the same reasons why important information should be placed in the top-left quadrant, essential and frequently used controls should also be located in this part of the screen. According to Nielsen and Tahir, 18 percent of the websites analyzed in their study place controls across the top of the page and 30 percent feature a left-hand navigation rail (2002: 43). The closeness of their location to other important screen elements is essential to a user-friendly navigation. “The eye, or pointer, should not be forced or caused to wander long distances about the display seeking the next item” (Galitz 2002: 118).

LDOCE and OALD, which both feature several reference works, locate the controls to switch between the reference works in the top-left corner of the interface. Whether they are really the most frequently used controls or whether the dictionary controls are more important remains questionable. OALD and LDOCE use large, colorful and easily recognizable buttons for the reference work controls. COBUILD’s reference work controls, in contrast, are part of the search results window and only visible if the corresponding reference work contains the query term. Since only one letter serves as an indication of which reference work the control is linked to and since they all have the same color, they are hardly distinguishable.

In contrast to reference work controls, dictionary controls are fairly hard to find in all of the tested dictionaries except COBUILD. COBUILD’s dictionary controls are located in two taskbars above the article window. This way, the taskbar is not cluttered with icons and the functions are still easy to find. OALD’s dictionary controls are located in the bottom-left corner of the screen and barely visible on first sight, even though colors were used to highlight them. This is due to their position and to the choice of colors. Their names are displayed in a white font on pastel-colored buttons. Nonetheless, compared to the remaining three dictionaries OALD’s controls are still fairly obviously perceptible. LDOCE’s dictionary controls are located underneath the lemma and thus seem to be part of the article. They are the only controls in LDOCE’s interface whose names are not displayed in bold and which are not shaped as buttons. Therefore, they seem to be less important than the other controls. Even LDOCE’s settings controls are more easily visible than its dictionary controls. They are not specially marked either but grouped together in their own taskbar, which makes them easily distinguishable.

CIDE's dictionary controls are located in the top-right corner of the interface. They are rather small and, although underlined, are hardly visible. MED groups almost all controls in one taskbar in the top-center part of the screen. This way, they should be fairly easy to find but since all types of controls are mixed up and not distinguished by different colors or fonts, they can be confused quickly. In addition to this, MED features drop down menus, which hide most of the controls and reveal only the names of the categories under which they are grouped. 12 percent of the websites examined by Nielsen and Tahir locate the controls in the middle of the page, similarly to LDOCE and MED (cf. 2002: 43). Moreover, 10 percent feature pull-down-menus and only 6 percent have their controls located in other places, such as at the right or in the bottom. Locating the main controls in the left part of the screen consequently facilitates the work with the interface as it is very likely that users have already visited similarly constructed websites and therefore know where to look for the controls.

The third category, settings controls, is of a minor importance to the every day use of the dictionary. Normally, users adapt the settings to their preferences when they first work with the program. Afterwards, they are hardly ever altered again. These controls consequently do not have to be marked in such a way that they always catch the users' eye whenever they work with the program. COBUILD's top taskbar is a typical Windows taskbar with categories, such as *File* or *Edit*, which hide the settings options. Its users can consequently easily find the settings options and change them. MED's taskbar also includes controls named *Edit* and *Options* with similar functions. Unfortunately, once again, they are not grouped together, which is rather user-unfriendly. The interface should indeed better "assist users in navigating through a screen by […] grouping elements" (Galitz 2002: 656).

In OALD, all settings options are grouped together in a bottom task bar underneath the article part. It is very likely that users are familiar with links at the bottom of the screen as out of the pages examined by Nielsen and Tahir "80% included a list of navigation links across the bottom of the page" (2002: 43). By restricting the bottom task bar to settings controls, OALD's compilers also respect Nielsen and Tahirs recommendation that bottom-of-the-page navigation should not be used for primary navigation features (cf. ibid.). The only drawback of OALD's settings controls is that they are pastel blue on white ground because of which they could be easily overlooked.

CIDE and LDOCE arrange their settings options in the top right quadrant of the interface. In contrast to COBUILD and MED, they use icons in addition to buttons with text labels. LDOCE groups all settings options in a clearly indicated drop-down menu. In CIDE, however, users are challenged to find the right icon that will lead them to the settings menu. “Icons are supposed to represent graphically what the object is or does” (Dabbs 2001: 44) but CIDE’s icons for *Copy to word processor*, *Insert/Open notation* and *Properties* are so similar that they can hardly be distinguished on first sight. It goes without saying that “users should not have to click on things just to find out what they are” (Nielsen/Tahir 2002: 19). The location of CIDE’s controls in the top bar makes them even less discernible since “users often ignore anything within or above a rectangular shape at the top of the screen” (ibid.).

Apart from limiting eye and pointer movements, good screen navigation should also “minimize the number of times a person’s hand has to travel between the keyboard and the mouse” (Galitz 2002: 656). OALD and LDOCE clearly fail at this point. As soon as the user clicks somewhere in the interface, the cursor has to be manually placed back into the search box. Should learners search for a word with a long dictionary entry, they have to click in OALD’s article box in order to slide down the text, because OALD’s scroll function does not work with the mouse. Afterwards they have to move the cursor back into the search box in order to search for the next word. LDOCE has similar disadvantages. If the search brings up several articles the user has to manually open the desired article. Again, the pointer has to be moved back to the entry box to search for the next word. Even after only having searched for a word without having clicked anywhere in the interface, the user has to click into the search box before he/she can enter a new search word. This is not only time consuming but can also become a very unpleasant experience. Another disadvantage of LDOCE and OALD is that their users have to check if the previous search word has disappeared from the search box. Is this not the case, they have to delete it themselves. In both programs, it can easily happen that users simply add more letters to the previous search word instead of typing in a new word. This obviously leads to wrong results or no results at all, and forces them to start the search all over again. When trying to close OALD’s interface, users are asked if they really want to quit. Altough *Yes* is already highlighted and it seems to be sufficient to simply press the enter key, they have to move the pointer to one of the options and

click on the button. It goes without saying that this is not the most user-friendly solution.

CIDE suffers from a different drawback. As it has two separate windows, a search box window and an article window, it frequently happens that users see only one of them, in most cases the article window. Initially, they might get the impression that it is necessary to manually open the search window in order to start a new search. This is not the case, though; as soon as users hit a key on the keyboard the search window opens automatically. Yet, the program also has a small drawback. The first letter that the user types in is either deleted by the program or moved to the end of the search word. This forces the users to double check if the search box really displays the word they have keyed in. If not, they have to repeat the search.

Only COBUILD and MED do not face the learners with any such difficulties. No matter where in the interface their users clicked last, they can always start typing and the search word will automatically appear in the search box. Apart from the fact that this is the most user-friendly solution, it should also not be too hard to program since in all programs the search box is the only opportunity for users to key something in.

Table 1 comprises the above described eight categories. *Amount of information* refers to the number of articles per page, *visual clutter* to the density of screen elements, *organization* to their arrangement on the screen, and *focus and emphasis* to whether or not the interface has a top-left starting point. *Control placement* groups together the location and design of the controls, *navigation* indicates whether or not the interface minimizes eye and pointer travel, *esthetics* refers to the use of colors and *consistency* signifies if the interface reflects current design styles or if its layout looks outdated.

With regard to the amount of information presented on the screen, CIDE, MED and OALD cannot keep up with COBUILD and LDOCE, which display only one, respectively a limited number of articles at a time. COBUILD and LDOCE, as well as CIDE, also outdo MED and OALD, whose density levels are so high that they affect the work with the interface. In all dictionaries except LDOCE, the main parts are arranged from left to right, which, in combination with a top-left starting point that all dictionaries have, ensure natural movement sequences. COBUILD's controls, as well as most of the controls in the other four dictionaries, are easy to find and easy to handle. Yet, some of LDOCE's and OALD's controls are not distinguished well

enough to enable their users to locate them right away. While MED hides its controls in drop-down menus, CIDE's controls in the top bar are barely visible. With respect to navigation, LDOCE and OALD are more of a hindrance than a help because they force the users to manually place the cursor into the search boxes. CIDE is not as easy to handle as COBUILD and MED either, which allow their users to type in search words right away. The dictionaries' uses of colors range from hardly any in COBUILD to too many in OALD. While the question of how colorful an interface should be mainly depends on personal preferences, it can certainly be stated that, in general, colors are used well in the dictionaries evaluated to enhance the navigation and the flow of interaction. OALD's choice of colors to highlight certain parts of the articles could surely lead to confusion, though.

Up to this point it seems as if COBUILD had the best layout of all of tested dictionaries. Nevertheless, on first sight, most people would probably prefer one of the other ones. While OALD's, LDOCE's and MED's colorful interfaces featuring small windows and seemingly easy-to-handle buttons and icons are clearly consistent with the style of state-of-the-art programs such as Windows XP, COBUILD and, to some extent CIDE also, look rather old-fashioned and outdated. It seems as if COBUILD's style has not changed considerably over the past years. Nonetheless, it's high score of six pluspoints in the other categories demonstrates that more features do not automatically entail better interfaces. Otherwise, LDOCE, MED or OALD would have had to top the list. In order to achieve this, their makers first have to find a way to solve all the small difficulties which their users currently face.

All things considered, none of the five interfaces has a perfect layout but none is so badly designed either that it would make the program impossible to work with.

3.2 Access Structure

In the past, dictionary compilers have mostly concerned themselves with the question of how to include as much information as possible in a dictionary without exceeding the space limits of the print medium. It is thanks to the high storage capacity of CD-ROMs that this issue is of hardly any importance anymore, today. With the possibility to store even all 24 volumes of the Encyclopaedia Britannica on a single disc, a new challenge has risen, though: the proper organization of the data. As dictionaries have often been regarded "simply as systems of information storage"

(Ilson 1985a: 4), the text in print dictionaries is usually highly condensed and their layout rather user-unfriendly. Not only do the structure and the presentation of the data have to be adapted to the new medium, but the whole process of information retrieval needs to be rearranged. In theory, search and retrieval functions allow an easy and fast access to the information desired - it remains to be explored if these functions are really adapted to the needs of the users or if they are maybe too complicated, not precise enough or even superfluous.

3.2.1 Basic Retrieval Facilities

According to OALD's blurb, the headword search is "the quickest way of finding a specific word" (OALD help file). There is no doubt that "the task of searching through an alphabetical listing is one that machines can perform much faster than human beings" (Kipfer 1987: 48). The basic search functions of all five tested dictionaries are indeed very easy to handle and are thus suitable for both, experienced and inexperienced users. In order to look up a word, the users only have to type or copy it into the entry box of, for example, the *Search Panel* (CIDE) or *Search Box* (MED). In CIDE, COBUILD and MED, the cursor does not even have to be placed by hand in the entry box in order to enter a word; the users can type right away no matter where they clicked last. Should the user switch between applications when using CIDE, CIDE usually opens only the Content Window. In order to return to the Search Panel, the user has to click on the corresponding button in the top right corner of the Content Windowand can then look up other results of the previous search or start a new search. OALD and LDOCE are slightly less convenient. Once the user has opened a part of the article, he/she has to manually place back the cursor into the entry box.

All dictionaries except COBUILD feature drop-down lists or alphabetical indices showing the closest matching entries. In most cases, it is not necessary to type in the desired headword completely; the user only has to select it once it is displayed in the alphabetical index. This can be done by either clicking on it or by using the down arrow key to highlight it and then the enter key to confirm the choice.

Once the user has selected a search word, the outcome of the search is presented in the results list. CIDE's results list has the most complex structure. First, it lists all

headwords containing the search word, then derived words, compounds and idioms. Afterwards, it enumerates more full text search results: definition texts, example texts and usage notes in which the search word is included. Within each category, the search results are listed in alphabetical order. Each category is marked by a different color (Fig. 2); headwords, for example, are displayed in blue bold type, derived words in dark blue bold type, compounds in light green bold type and idioms in dark green bold type. Examples are always shown in italics. CIDE is the only dictionary to offer its users a statistic overview over the outcome of the search. They can easily open it with a right click on the results list (Fig. 3). Similarly to CIDE, OALD's results list is divided into several parts (Fig. 8). It groups the results under the following four categories: headwords, idioms, phrasal verbs and *structures*. *Structures* subsumes those entries which the full text search brings up but which do not fit in any of the previous categories. The entries in the different groups are not specially marked, as in CIDE. The users can nonetheless distinguish them well as the name of each group precedes its entries.

MED's results list is not as sophisticated as CIDE's or OALD's (Fig. 7). Depending on the user's choice, it displays a range of "information types" (MED help file), for example headwords, derived words, compounds or collocations. Alternatively, the user can switch from *WordSearch* to *TextSearch*. In the *TextSearch* modus, the user can select the type of text (definitions, examples, editorial notes or any kind of text) in which the search will be executed. The results are then presented in the order that the user has selected before. There is, however, no clear distinction between the different groups, which renders the navigation between them rather difficult.

LDOCE only lists headwords that include the search word (cf. Fig. 6). Idioms, phrasal verbs or examples are not listed separately but have to be looked up under the corresponding headword. Actually, LDOCE's results list cannot really be compared to the results lists of the other dictionaries. Their results lists are individual panels and are separated from the panel in which the articles are displayed, while LDOCE's results list already includes the articles. The user just has to click on one of the headwords to open the corresponding article. If the user clicks on another headword, the first article is closed and the new article opens. LDOCE is one of only two dictionaries which fulfill Leech's and Nesi's demand "for 'multi-referencing': for simultaneous signaling to the user that the same query item is to be found in a

number of different resources" (1999: 301). In contrast to COBUILD, LDOCE' results list does not present the users with the outcome of the search in the Longman Language Activator that is always effected simultaniously. These results are displayed in the individual articles of the dictionary. The structure of LDOCE's results list makes it rather difficult and time-consuming to compare two or three articles or to search for a specific meaning of the search word. It takes considerably more time to check every entry for a certain idiomatic expression than to quickly go through a results list; especially if the search brings up many articles.

On first sight, COBUILD's results list stands out of the other lists (Fig. 4). "In COBUILD all sections of the database are accessed during an initial word search; the number of 'hits' in each area are then displayed on the screen and the user can choose whether to access the Dictionary, Usage, Grammar or Word Bank" (Nesi 1999: 61). Alternatively, users can switch to the results of the full text search (Fig. 5), which are grouped under different categories (*headwords*, *explanations*, *remarks*, *sample lists*, etc.). This option facilitates the search for individual parts of the article, such as examples or synonyms. The second panel below the result's list is split up into *Derived Words* and *Compounds*. Under *Derived Words*, users can look up phrasal verbs or individual parts of the search word, such as prefixes. They can also add an index to this second panel, which indicates the lemmata that precede and follow the current headword in the dictionary. Although the arrangement of COBUILD's results list clearly distinguishes it from the other dictionaries, it basically consists of the same parts as CIDE's or OALD's results lists. After all, regardless of how the results are presented, it is vitally important that the results lists are clearly structured. At least headwords, compounds and idiomatic expressions should be part of the results list and should, of course, be grouped under separate categories in order to enable the users to quickly and easily find the meaning or usage of the word sought.

Since the target groups of the tested dictionaries are not exclusively learners of either British or American English, the dictionaries should contain both varieties. Learners should be able to search for either of the two possible spellings of a given word. In order to ascertain the acceptance of both varieties, five British English words and their American English counterparts were tested. The results are displayed in tables 2 and 3. The test words were found with the help of CIDE's *Advanced*

Search. With the aim of narrowing down the scope of the search, three search filters were employed: *Part of Speech*, *Label* and *Category*. Potential test words were supposed to be either nouns or verbs in British or American English and listed as headwords. Out of the long results list, five test words were chosen.

Table 2 shows that CIDE copes best with the test words. Not only does it contain all of them (which is logical since they were chosen with the help of CIDE's search function) but it also leads the users directly to the main entry containing the explanation of the test word. COBUILD, which lacks one of the test words, features a similar structure. If both spellings are listed under one headword, the dictionary automatically presents its users with the corresponding article, no matter which variety they type in (cf. Table 3). OALD also found the test words but did not always reveal the explanation right away. If one compares OALD to its predecessor OALD6, it seems that their compilers have tried to improve the structure in order to directly present the users with the main article. Nevertheless, these changes have not been applied to all cross-references yet. The same is true for LDOCE, which occasionally also forces its users to take a detour by following a cross-reference to the dictionary article for the alternate spelling of the search word.

All in all, the articles in CIDE, OALD, LDOCE and COBUILD mostly display both varieties. Nevertheless, LDOCE has one major shortcoming: although both varieties of the test words are displayed in the respective articles, they are not always both listed as headwords as well. This is the reason why, for instance, *hematology* cannot be found with the *Headword Search* despite it being listed under *haematology*. Contrary to the previously discussed dictionaries, MED's structure turns out to be rather bookish. Both varieties of the test words are listed separately, one of which being the headword of the main dictionary entry and the other one containing just a cross-reference to the main article.

A major drawback of search functions of electronic dictionaries is that "paradoxically a student needs to know how to spell a word in order to look it up (and find out how to spell it!)" (Leech/Nesi 1999: 301). However, since learners often use the dictionary to look up the correct spelling of words, electronic dictionaries should be able to deal with guessed and thus possibly wrong spellings. They should furthermore offer their users the opportunity to type in only those part(s) of the word, of whose spelling they are certain (cf. chapter 3.3.3). Four of the tested

dictionaries feature spell checker windows, which open automatically if the user misspells a query term and suggest headwords that are similar to the wrongly spelled word. CIDE is the only dictionary that does not offer this function. The dictionaries should nevertheless ignore slight mistakes, such as compound nouns spelled in one word or with a hyphen although they are normally spelled in two words. In such a case, the dictionaries should automatically show the corresponding article without presenting the user with a spell checker window. According to Holderbaum, the first OALD on CD-ROM already disposed of this function. She states in her evaluation: "Die *Headword Search* und die *Full Text Search* sind schreibungstolerant angelegt, beispielsweise werden nach der Eingabe des Begriffs ‚*powercut*' die Treffer in der richtigen Schreibweise ‚*power cut*' angezeigt"[21] (1999: 381).

Table 4 displays the outcome of the spelling tolerance test. In this test, five compound nouns, which are normally written in two words, were spelled in only one word. The test words were arbitrarily chosen by opening MED, which always stops at a different entry, and then scrolling down until the next compound noun appeared. The outcome of the test reveals that the dictionaries can be grouped into two categories. On the one hand, there are the dictionaries that first switch to a spell checker window offering the users a number of suggestions. On the other hand, there are those dictionaries which directly open the desired article.

OALD performs best among the dictionaries which first open the spell checker. In all five cases, the correct spelling of the test word topps the list of alternative suggestions. What is strange, though, is that OALD offers not only the correct spellings in two words but also proposes other, rather uncommon spellings with a hyphen. For **sleepingbag* it suggests, among others, *sleeping bag* and *sleeping-bag*. This might be due to the fact that OALD first checks for possible spellings and only afterwards for headwords contained in the dictionary. Although such a function is definitely an asset of word processors it is not necessarily of benefit to dictionaries. Spell checkers in word processors usually contain only a limited vocabulary. Moreover, they are typically not updated as often as dictionaries should be. Therefore, working with the principle rules of word formation and, if necessary, suggesting words which are – at least in theory – grammatically correct is essential to them. Dictionaries, on the contrary, should only offer words which are definitely grammatically correct and which they include. This way, their users can be confident

[21] The Headword Search and the Full Text Search are tolerant towards mistakes, if one types in, for instance, 'powercut' the hits are correctly spelled 'power cut'.

that they only employ words which actually exist. Consequently, it would be better if the compilers of OALD renounced this practice and exclusively proposed only those words that are included in the dictionary.

Just like OALD, COBUILD and LDOCE also switch to spell checkers. If the first part of the compound noun is registered as a separate headword, as for example *theme*, COBUILD lists it first and enumerates afterwards headwords containing it, such as *theme park*, *theme pub*, *themed*. If the query term is not registered separately, as for instance *sleeping bag*, COBUILD only proposes the correct spelling. **Policeconstable* is the only test word which COBUILD could not find, despite it being listed as *police constable*. LDOCE always presents the correct spelling of the compound first and alternate suggestions afterwards. At times, it is rather difficult to find a connection between the test word and the alternatives proposed by LDOCE at first sight: *homepage* and *thump* are, for instance, among the suggestions that LDOCE makes for **themepark*.

In contrast to the dictionaries discussed before, MED and CIDE directly lead their users to the corresponding articles. MED masters this task better than CIDE, which lacks two of the test words. Not only is this the quickest way to obtain a desired information, it is also the easiest, because users do not have to deal with spell checkers first. One could argue though, that they might not even realize that they have misspelled the search term and thus might keep on making the same mistake.

Spelling tolerance is important not only for learners' dictionaries but for all kinds of electronic dictionaries since everybody could accidentally misspell a word. Learners' dictionaries should, however, be adapted even more to potential difficulties on the part of the users. One challenge that learners often encounter when looking up words in a dictionary is that they have to be able to trace back inflected words to their canonical forms. Tracing back regularly formed plurals of nouns or regularly conjugated verbs should be fairly easy for advanced learners. Yet, this is not necessarily the case for irregular "forms like *mice* or *flew*. So, although they do not have lemma forms, these types of forms should have lemma status in learners' dictionaries" (Bogaards 1999: 114).

In addition to having a certain spelling tolerance, electronic learners' dictionaries, therefore, allegedly accept "all grammatical forms of verbs and nouns, e.g. present participles and plurals" (Heuberger 2000: 188). Already in 1997, Feldweg made a

similar claim: “Die Zurückführung flektierter Formen auf ihre Stammform(en) zählt heute zu den Standardleistungen der lingustischen Datenverarbeitung”[22] (1997: 32). As shown in Table 5, this does not apply to all of the tested dictionaries, though.

In order to determine whether the compilers of the tested dictionaries accord lemma status to irregular forms, as demanded by Bogaards (cf. 1999: 114), five irregularly formed past tenses, past participles and plurals were entered into the basic query facilities. They were determined with the help of MED’s *SmartSearch*, which extracted verbs and nouns with irregular inflections. Starting with the letter *a*, every second letter of the alphabet was checked for suitable test words, that is to say words beginning with *b*, *d*, *f*, etc. In case the results list did not contain certain initials (such as verbs beginning with *j*) or in case there were no suitable test words having particular initials, such as verbs starting with *o*, the letter were skipped. As the end of the results list was reached before enough test words had been found, the search was continued at the beginning of the list. This time, however, only every third letter was checked for potential test words. While earlier the first suitable words were picked, only the second suitable headwords were chosen this time in order to avoid duplications. Possible past tense test words had to have at least one irregular past tense form, which does not correspond to the infinitive. If there are two possible forms, a regular and an irregular one, both were tested. The same applies to potential past participle test words, which also had to have at least one past participle that is formed irregularly and that matches neither the infinitive nor the past tense form. Furthermore, those words which are listed independently in the dictionary, for instance as adjectives, were excluded. Starting with the initial of the last past participle test word, the search for suitable test nouns was carried out according to the same principle.

Despite not finding the infinitive to *babysat*, although *babysit* is registered as independent article, CIDE deals best with the test words. This is due to the fact that it is the only dictionary which directly leads its users to the articles sought and, thus, fulfills Bogaards’ claim for lemma status for irregular forms (ibid.). Nonetheless, CIDE remains bookish to a certain extent in that many cross-references still exist and are still displayed in the results list. In most cases they are useless: why should users manually choose the entry for *mown*, which contains nothing but a cross-reference to the article *mow* that the dictionary opens first? Just in one case, CIDE opens an

[22] Today, tracing back inflected forms to their canonical form(s) is one of the standard features of linguistic data processing.

individual entry for one of the test words. Instead of showing an entry for *fly* it simply states "flown […] *past participle of* fly". The entry is not linked to another article, otherwise the dictionary would probably open this article right away. Actually, CIDE does not contain one but three articles for *fly*: *travel*, *move quickly* and *wave*, which follow *flown* in the results list. This explains why the dictionary has to go to the entry for *flown* at first. Since *fly* is split up into several articles, it is impossible for the dictionary to tell which entry the user is looking for. Giving users the opportunity to choose the right article is definitely better than just randomly opening one of the three entries.

The remaining four dictionaries seem to be still in the process of having their search engines adapted to the new medium. MED's, OALD's and COBUILD's approach to inflected words is similar to CIDE's but less consistent. They also have two separate entries, one for the inflected form and one for the headword form. Yet, in six (respectively seven and eight) out of nineteen cases, MED, OALD and COBUILD display the entry with the cross-reference and list the main article only after it in the results list. Hopefully, these inconsistencies will be resolved by the time the new editions are published. Working with cross-references in such a way simply means that the medium has not been used well enough.

Even though it takes only a few seconds to click on the link to the main dictionary article, this can become very time-consuming and unpleasant if this happens more often than once or twice in the course of working with the dictionary. Furthermore, this is probably also unnecessary from a pedagogical point of view because irregular forms are always mentioned in the main entries as well. Since CD-ROMs do not suffer from space problems, cross-references do not need to be excluded completely from electronic dictionaries. It would be totally sufficient to list the main article first in the results list and then entries containing cross-references to it.

LDOCE is the dictionary having the most difficulties with finding the basic forms for the test words. In theory, it proceeds in the same way as MED, OALD and COBUILD, but once again it has the worst outcome out of all dictionaries evaluated. Apart from the fact that in seven out of nineteen cases LDOCE presents the learners with cross-references, it also brings up the most wrong results of all tested dictionaries. It offers, for example, *rough-hewn* for *hewn* even though both possible forms, *hewn* and *hewed*, are indicated as past tenses of *hew* in its article. What is

more, it cannot find *indexes*, *referenda*, *octopi* or *octopuses* at all, although they are all listed as possible plural forms of *index*, *referendum* and *octopus* in the respective articles. It is especially interesting that LDOCE cannot find *indexes* and *octopuses*. These are the regularly formed plurals and should not be any harder to find than, for instance, the plural of *house*. It should not be a problem and it should be standard today to teach the search engine to ignore plural –s. If the irregular forms, which are already registered in the dictionary, also received lemma status, this slight shortcoming of LDOCE could quickly be eliminated.

In the end, in spite of minor shortcomings, the basic search facilities of all five dictionaries are fairly similar. They are easy to handle and self-explanatory and thus suitable for experienced and inexperienced users both. Nonetheless, there are various features that still need to be improved upon in order to render more consistent the searches.

3.2.2 Complex Retrieval Functions

Experienced users can enhance their searches in various ways, for example by employing Boolean Operators, wildcards or filters. In addition to this, "functional *search engines* can facilitate the retrieval of individual expressions significantly, allowing the learners to find the corresponding information more quickly and comfortably than a book could ever hope to achieve" (Heuberger 2000: 114). Particularly full text searches, with which all parts of dictionary entries can be searched, are an asset of electronic dictionaries. Already in 1989, Dodd demanded that "in a truly dynamic dictionary, it should be possible to gain access to an entry by means of any of the pieces of information composing it" (1989: 88, cited in: Burke 1998).

All five tested dictionaries dispose of advanced search facilities. Nonetheless, they are not as similar as their basic search functions and therefore not as easily comparable. Regarding their structures and their user-friendliness, the advanced searches of CIDE, LDOCE and MED are relatively akin (Fig. 9, 11 and 13). The query terms can be keyed into the entry box and can be combined with the help of Boolean Operators: *AND* can be used to find entries which contain both search terms,

OR to trace articles with one or both search terms. *NOT* excludes articles with the following search term. By combining several Boolean Operators, users can construct relatively complex queries. What is more, they can employ wildcards to widen the search, which is also known as "truncation" (Schwersky 1992: 52). *?* stands for one character and * replaces zero, one or more characters. Wildcards are especially helpful if users are "interested in groups of words that include particular (morphemic) components, e.g. certain suffixes" (Heuberger 2000: 117) or if the correct spelling of the search word is uncertain.

Additionally, the focus of the search can be determined with the help of numerous filters, which can further be combined. All filters can be comfortably activated with a left click (Fig. 12, 13). Since every dictionary employs the term *filter* differently, *filter* will be used here to refer to all tools which change the way the dictionary is searched. In the help file of OALD6, filters are grouped into *type of text filters*, which are useful for searching headwords, definitions, examples, usage notes, etc., and *label filters*, indicating, for example, register, part of speech or varieties of English. As can be seen in Table 6, which lists the complex search facilities of the five dictionaries evaluated, the numbers and ways of grouping the filters differ considerably. Nonetheless, they offer roughly the same filters in spite of their dissimilar categorizations.

Using filters can help reduce the "information overload" (Leech/Nesi 1999: 302), which can be caused by broad search terms. "In den meisten Benutzungssituationen suchen Benutzer gezielt nach einem bestimmten Informationstyp und alle daneben existierende Information wirkt hinderlich bei der Suche danach"[23] (Herbst/Klotz 2003: 256). Accordingly, filters are a perfect means to avoid superfluous information and to concentrate on the desired type of information. They allow users, for example, "to search for the words 'drive' and 'car' when they appear in definition text for dictionary entries that are classified as verbs" (MED help file) or for all British English nouns with irregular inflection.

> Auf diese Weise kann sich der Benutzer den gesamten Datenbestand des Wörterbuchs nach diasystematischen und/oder grammatisch-lexikalischen Charakteristika geordnet aufführen lassen. Die alphabetisch-semasiologisch strukturierte Anzeige der Daten kann somit ersetzt bzw. ergänzt werden durch eine onomasiologisch orientierte Strukturie-rung.[24] (Holderbaum 1999: 383)

[23] In most user situations, users search for a specific piece of information. All other information that exists as extra to it hinders the search.

[24] This way, the user can have all the data in the dictionary listed according to diasystematic and/or grammatic-lexical characteristics. The alphabetically semasiologically structured presentation of the data can consequently be replaced or supplemented by an onomasiologic oriented structuring.

Nonetheless, the outcome of such an onomasiologic search very much depends on the users and their ideas on how to employ and to combine the numerous filters.

OALD's *Advanced Search* works with such filters but is very user-unfriendly because its users have to manually key in every single filter. Not only is the search for the correct abbreviation for a filter quite frustrating and time-consuming, it also complicates the whole search so much that it might as well have a demotivating effect on the users. A rather poor description of the search functions in the help file only increases this effect. Apparently, it is not possible to search the entire dictionary for all entries having a certain label: "one constraint is that it is not possible to specify * to mean any word in the dictionary" (OALD help file). This is definitely a step back because this is possible in the predecessor, OALD6. OALD6's *Advanced Search* is comparable to those of MED and LDOCE and thus considerably more user-friendly than OALD's *Advanced Search*.

COBUILD is the only dictionary whose advanced search cannot keep up with those of the other dictionaries evaluated. It "does not offer any complex retrieval functions at all, which does, however, not mean that its search engine is inefficient altogether" (Heuberger 2000: 118). One could argue that COBUILD's complex results list renders complex search functions unnecessary to a certain extent since the categories of COBUILD's results lists almost correspond to the *type of text* and *parts of speech* filters of the other dictionaries.

LDOCE, MED and COBUILD feature pronunciation searches. LDOCE and MED work with the International Phonetic Alphabet (Fig. 15 and 16) and offer their users the opportunity to create phonetic transcriptions with the help of a range of phonetic symbols. Both dictionaries provide sample words, in case users are not familiar with phonetic transcriptions. Also, MED offers sound files for each symbol and matching example so that its users can listen to them should there be any doubt about the pronunciation of a symbol. Sobkowiak stresses that this facility "can raise the overall learner's awareness of English orthographic and phonetic patterns and preferences, thus creating an intuitive 'feel' which is helpful for advanced foreign language communication" (2005: 4). "How effective the search is via pronunciation symbols is dubious: students find vowels and diphthongs difficult, and the programme shows no mercy for mistakes" (Appleby 2004: 302), which can easily

occur. If users confound, for instance, an open vowel with a closed one, neither of the searches brings up the article sought.

As in the advanced searches, the user can employ Boolean Operators and wildcards to widen or to narrow down the search. COBUILD's *Phonetic Search* differs from the other sound searches in that its users do not use the IPA. The phonetic search can only be used to search "for words with the same pronunciation" (COBUILD help file). This can be useful if the learner does not know how to spell a word but knows a homophone, for instance *write* and *right*. Nevertheless, it is rather unlikely that this happens quite often. It is a good start but cannot be compared to the sophisticated pronunciation searches of LDOCE and MED.

Some dictionaries offer even more search functions in addition to the more or less standardized search facilities. LDOCE features a *Multimedia Search* in which all pictures and sound files are registered (Fig. 18). It also offers a *Word Origin Search* enabling the user to look up etymological information about the search word (Fig. 17). Additionally, the learner can use this search to track down, for instance, all French Canadian words in English or all words that entered the English language in the 8th century. The *Subject Search* groups words according to certain topics, such as business vocabulary (Fig. 19). The search can be narrowed with the help of "drop down menus for theme, section and subject area" (LDOCE help file). Although these searches are certainly entertaining, their value for the everyday use of the dictionary is undoubtedly limited.

In case the user is in doubt about an irregular form, COBUILD includes a *Morphological Search* with which "all inflected forms of the search word, including plurals, past tenses, comparatives and all irregular forms" (COBUILD help file) can be researched. The dictionary presents the user with the canonical form of the query term and the corresponding dictionary article. It would, however, be preferable to include this function into COBUILD's basic search facility. Should users be uncertain about the usage of a word, CIDE provides help. It offers the possibility to search in a much larger corpus than the one that was used for the compilation of the dictionary: The Internet. After selecting an Internet search engine from the *BOOKcase bar*, users can enter a query term and the program automatically connects to the online search engine.

Even while working with other applications, users can access the dictionaries. CIDE and OALD can be integrated into a word processor. “In this way, the dictionary becomes a writing aid comparable to a spelling or grammar checker, only more educationally useful” (Leech/Nesi 1999: 304). LDOCE and MED can be reduced to pop up windows. The dictionaries can be consulted in two ways. Either by typing a search word into LDOCE’s pop up or MED’s *Quick Search* window or by positioning the pointer over the desired word. If MED’s automatic lookup is activated, the dictionary will move directly to the matching entry. Otherwise, MED and LDOCE can easily be activated by pressing certain combinations of keys and the word will automatically be displayed in the dictionaries.

These complex search facilities can doubtlessly deliver more elaborate results than the basic searches. Nevertheless, they add to a general problem of dictionaries, namely that “die Benutzer(innen) in der Regel zwar wissen (oder zu wissen glauben), was sie nachschlagen wollen, aber nicht unbedingt wissen, wo [oder wie: K. M.] sie diese Information finden”[25] (Herbst/Klotz 2003: 158). This is especially true if a search routine is as complicated as OALD’s *Advanced Search*. Even though the advanced searches of CIDE, LDOCE and MED operate according to the same principle as OALD’s, they are considerably easier to handle. Their makers managed to find the “balance between efficiency and user-friendliness” (Heuberger 2000: 117). OALD and COBUILD still need to improve on this point, though.

3.2.3 Cross-References

Cross-references are of a vital importance to the macrostructure of print dictionaries. They enable dictionary compilers to connect various entries and, thus, to save space. According to Kammerer and Lehr, dictionary users generally find cross-references helpful if they offer extra information on their query word (1996: 312). They distinguish three types of cross-references[26]: “adkurrente” cross-references, which refer the user to another entry, “inkurrente” cross-references refering to a particular part of another entry, and “artikelinterne” cross-references, which point to another part of the same article (ibid.: 315). It goes without saying that cross-

[25] Users generally know (or believe to know) what they are looking for, but do not necessarily know where [or how: K. M.] to find this information.
[26] For a more detailed survey on types of cross-references, see Kammerer/Lehr 1996: 314-324

references reduce the user-friendliness of dictionaries markably. Nonetheless, space restrictions in print dictionaries often force their compilers to employ cross-references in order to not waste space by repeating the same information several times.

Kammerer and Lehr furthermore differentiate between explicit, implicit and potential cross-references. Explicit cross-references always contain a special mark, a "Verweisbeziehungsangabe" or "Verweisbeziehungskennzeichnung"[27], such as *cf.*, → or *compare* (ibid.: 325). Implicit cross-references are not introduced by particular signs or labels but are marked nevertheless, for example by small caps. In contrast to explicit and implicit cross-references, potential cross-references are originally not meant to be cross-references but are used as such by the learners. A potential cross-refence is, for instance, a word within an article that learners have to look up to fully comprehend the article. However, if they are forced to look up the potential cross-reference in order to find an answer to their initial question, it is very likely "daß sie dann nicht nur die Benutztungsfreundlichkeit, sondern allgemein die Qualität des betreffenden lexikographischen Produkts mindern"[28] (ibid.: 313).

Electronic dictionaries work with the same types of cross-references that are used in print dictionaries. Due to the different medium, one could, however, expect cross-references to be employed differently in electronic dictionaries. Table 7 displays the types of cross-references used in the tested dictionaries. All five dictionaries include articles such as *x is a written abbreviation for* x_1 or *x is an American spelling of* x_1 or *x is the past participle of* x_1, which contain only a short explanation of the search word and then forward the user to the article for x_1 for more detailed information on the query term. Occasionally, OALD's articles even display just a cross-reference (⇨ *x*) without any explanatory phrase. In the case of abbreviations or irregular inflections this might be of some help, but it is most certainly not useful other user situations. While such cross-references to other entries are necessary in print dictionaries to direct the learner to the headword under which the desired information can be found, they are superfluous in electronic dictionaries. Instead of being presented with an entry which only contains a cross-reference to another entry, users should rather be directed automatically to the article with the explanation (cf. chapter

[27] Cross-reference indicator
[28] They do damage not only to the user-friendliness but also to the overall quality of the lexicographic product in question.

3.2.1). Accordingly, all tested dictionaries, but MED and OALD in particular, still have to make a better use of the medium CD-ROM.

Four out of five dictionaries feature cross-references to synonyms, antonyms and to related words. Yet, there are markable differences in the presentation and labeling of these cross-references. COBUILD, LDOCE and OALD employ explicit cross-references to other entries, which they clearly introduce by marks such as *synonym*, *SYN* or = for synonyms; *opposite*, *OPP* or ≠ and *see entry at* for antonyms and *see also* or *compare* for related words. As they are more easily noticeable, OALD generally employs *SYN* and *OPP* in articles, and = as well as ≠ in explanations of difficult words or words outside the defining vocabulary and in overviews, for instance over word families.

While MED features explicit cross-references to antonyms and to related words, it contains only implicit cross-references to synonyms. The fact that synonyms as well as words outside the defining vocabulary are both marked with small caps is not likely to cause much confusion among learners, but indeed reduces the dictionary's user-friendliness, especially for productive uses.

Even though each article in CIDE contains a link to *Related Words*, a word field of which the search word is part, it features neither explicit nor implicit cross-references to synonyms or antonyms. Only some of CIDE's articles, those which do not give an explanation but forward the learner to another article, include cross-references to antonyms. *Unable*, for instance, forwards the user to *not able (CAN DO)*. Strangely enough, the article for *able* does not feature a link to the opposite *unable*. Apart from this, cross-references to related words, namely *see also* and *compare*, can also be found from time to time. They usually lead to somewhat similar words or expressions, such as *à la carte* and *table d'hôte*. Articles containing both, such a cross-reference to related words and the usual *Related Words* link are bound to lead to confusion. There is no explanation provided for the question in what respect the two categories differ from each other or why, for instance, the article for *tablespoon* includes cross-references to *dessertspoon* and *teaspoon*, even though these are also part of the article's *Related Words* category *Cutlery*.

In addition to these cross-references, CIDE and OALD furthermore contain links to illustrations, if they are not attached to the article in OALD or because they are stored in a special directory in CIDE. LDOCE and MED do not feature such cross-

references. They automatically display illustrations in all articles for which they are important and not just in one of them. This is undoubtedly a more user-friendly approach than CIDE's and OALD's (cf. chapter 4.3.2). COBUILD does not contain illustrations at all and consequently does no need to employ such cross-references.

Implicit cross-references to other entries, such as links to words outside the defining vocabulary and links to explanations of grammar codes or other frequently used abbreviations, are also of a major importance to learners. LDOCE, MED and OALD highlight words outside the defining vocabulary and offer short definitions upon a double click. Needless to say that this allows more precise definitions of the headwords without running the risk that learners might not fully comprehend them.

CIDE, LDOCE and MED open pop-up windows with short explanations of grammar codes when the user double clicks on them. This function is not available in COBUILD and OALD, although COBUILD in particular employs a fairly complex system of grammar codes (cf. chapter 4.2.2). If the user double clicks on an abbreviation in OALD, the dictionary opens the closest matching dictionary entry, if there exists one, which does not necessarily have to have any connection to the grammar code. Should the learner click, for instance, on *[u]* for *uncountable*, the entry for *U* opens: *noun […] the 21st letter of the English alphabet* and *abbreviation (BrE) universal (the label of a film / movie that is suitable for anyone including children)*. Even though advanced learners can be expected to be familiar with most of the grammar codes, the dictionary should provide at least a short definition of each of them in order to avoid confusion.

Only COBUILD, LDOCE and MED feature cross-references to particular parts of other entries, with LDOCE being the only dictionary to include implicit links of this type. These links are seldom employed, though. It is nevertheless a good start and, hopefully, the other two dictionaries will soon also offer such cross-references. It certainly means much work for their compilers to change cross-references to other articles into links to specific parts of these articles but this would undoubtedly constitute a tremendous improvement of the user-friendliness of the dictionaries, especially with regard to long, complex articles. Learners would not be forced to read through the whole article in order to find the information they are looking for. Instead they could go directly to the right part of the article, which is important for the comprehension of the search word.

Cross-references to other parts of the same article could also be expected to be employed frequently in electronic dictionaries. Yet, up to now, only LDOCE, MED and OALD's Wordfinder offer this function. As electronic dictionaries are not restricted by space limitations, the same information can and should be presented in various entries if necessary or helpful. This often leads to longer and more complex articles than in print dictionaries. Overviews over such complex articles containing cross-references to their various parts would markably facilitate and shorten the search for the right meaning or use of the search term. Thus, the compilers of MED should further adapt it to the medium and transform the overviews given at the beginning of complex articles into hyperlinks. In this respect, COBUILD with its rather user-unfriendly article structure (cf. chapter 4.1.1) as well as CIDE and OALD's Dictionary, cannot keep up with the previously discussed dictionaries.

The opportunities to link various reference works, as well as primary and secondary resources, i.e. corpus and dictionary, distinguishe electronic from print dictionaries and should be realized whenever possible. Leech and Nesi go as far as to ask for a "single lexical database with links between the different categories of information associated with the same headword entries" (1999: 303). Out of the tested dictionary CD-ROMs, COBUILD, LDOCE and OALD include more than one reference work. COBUILD is the only dictionary CD-ROM that contains and cross-references primary and secondary resources. LDOCE and OALD feature only a limited number of examples from their corpora.

As described in chapter 3.1, LDOCE and OALD's dictionary windows feature extra information windows displaying the corresponding articles in the productive dictionaries, the Activator and the Wordfinder. It is not possible for the users to simply click on one of the headwords displayed in these windows in order to switch to the main Activator or Wordfinder window. Instead they have to find a tiny sign in the top right corner of the small extra information windows. It would undoubtedly be more user-friendly if the users could access the productive dictionaries by simply clicking on the headword, especially because links within the article work in the main and in the extra information windows. OALD does not feature a similar window for its Cultural Guide but provides its users with links to related Cultural Guide articles at the end of the dictionary articles.

COBUILD’s reference works are not linked in a similar way. Whenever users double click on a word, the dictionary performs a full text search in all reference works. Even though these are not the type of cross-references described before, the effect is the same: users can easily and quickly access related articles in various reference works.

All in all, LDOCE features the best system of cross-references, with important cross-reference types being specially marked and various reference works being linked. MED and OALD also employ cross-references well but still have to improve on minor shortcomings. Only CIDE and COBUILD do not make sufficient use of cross-references which affects their user-friendliness and makes them markably less useful for productive purposes than their competitors.

4 Microstructure

While the macrostructures of electronic and print dictionaries differ markably, their microstructures seem to be arranged more similarly. The microstructure describes "the structure of the individual dictionary entries: their various parts and the mutual relationship of these" (Svensén 1993: 210).

According to Zgusta, dictionary articles consist of two parts, the lemma, which indicates the lexical unit in question and "the second part [that: K. M.] contains all the other information" (1971: 249). Herbst and Klotz similarly divide the entry into two parts, "Lemma und Explikationsteil […], wobei der Explikationsteil aus einer Reihe von Artikelkonstituenten besteht"[29] (2003: 168).

Hartmann further specifies "all the other information" (Zgusta 1971: 249) by distinguishing alltogether three major parts of dictionary entries: "a headword or 'lemma' in bold print, which is followed by an explanation of its meaning in the form of a conventional definition and then elaborated on by examples and other relevant information" (2001: 59).

Based on a combination of both, Zgusta's and Hartmann's distinctions, the articles for five test words will be examined subsequently. The evaluation will focus on the representation, the explanation and the exemplification of the test words within the article. While *representation* concentrates on lemmata in Zgusta's sense, i.e. headwords, morphological and syntactic information as well as information on pronunciation, *explanation* subsumes definitions as well as grammatical and usage information, and *exemplification* comprises examples, illustrations and sound files.

The five test words on whose articles the evaluation is based were found with the help of MED's *SmartSearch*. The dictionary was searched for nouns and verbs, adjectives and adverbs with a very high frequency. The search was limited to these parts of speech because they are probably looked up more often than any other part of speech. The restriction to high frequent headwords ensures that only those headwords became potential test words that many learners are likely to come across and to look up. As the search brought up close to 2.200 entries, the scope of the search was narrowed further to include only those articles containing an illustration. One might assume that headwords whose articles contain an illustration in one dictionary might also have an illustration in the other dictionaries, which would make

[29] Lemma and explanation part, with the explanation part consisting of a number of article constituents

it possible to compare not only definitions and examples but also illustrations. Furthermore, the search was restricted to headwords having five senses in MED because it is very likely that learners have more difficulties with words having multiple meanings than with words having only one or two. The entire search brought up nineteen articles of which the third, the sixth, the tenth, the fourteenth and the seventeenth were chosen. They were the articles for *board*, *court*, *foundation*, *leg* and *screen* (Fig. art. 1 to 25). Whenever possible, examples in this chapter will be taken from these articles in order to avoid the impression that certain characteristics that will be discussed afterwards only appear in a few specific articles. Should this actually be the case, it will be stated explicitly.

4.1 Representation

"The spelling of a word, its alternative spellings, and its pronunciation(s), including its stress patterns, are normally the first kinds of information that a dictionary user will see, as most learners' dictionaries include such information at the beginning of the entries" (Chan/Taylor 2001: 261). The difficulties that many users have with interpreting the information given in lemmata reveal, however, that an easily comprehensible presentation of the lemma is of a vital importance to the user-friendliness of a dictionary.

While Hartmann (2001) uses the terms *headword* and *lemma* interchangeably, Zgusta clearly distinguishes them. According to Zgusta (1971: 249), the lemma consists of several parts of which the headword is the most important one. "The other indications of the lemma inform the user about the (usually morphological but – above all in the case of uninflected words – also the syntactic or combinatorial) […] class of which the entry word […] is a member" (Zgusta 1971: 250). Often, the lemma also provides the learner with information about the pronunciation or etymology of the lexical unit in question (cf. ibid.: 251/2) or about its frequency.

4.1.1 Headwords

Hartmann defines *headword* as "the typographically marked **canonical** form of a word or phrase which is chosen for the position in the dictionary entry where the entry starts" (2001: 174). Accordingly, it functions as "key to the information

sought" (Svensén 1993: 64), which is even more the case in electronic dictionaries than in printed ones. The different ways of accessing the information in the dictionary influence the presentation of the lemmata. While in print dictionaries they should be particularly prominent in order to help users locate articles on a page, they do not have to fulfill this function in electronic dictionaries, which directly present the learners with the desired articles. This is particularly the case for COBUILD and LDOCE but also partly for the remaining three dictionaries, which lead their users directly to the articles sought as well but at the same time offer the opportunity to skim through the dictionary. They should, therefore, mark headwords as obviously visible as print dictionaries.

CIDE, COBUILD, MED and OALD indent the second part of the articles so that the lemmata catch the users' eye. In addition to this, headwords in CIDE, COBUILD and OALD are displayed in bold blue font, which makes them stand out from the other text.[30] Should the dictionaries contain more than one entry for polyseme headwords, COBUILD, LDOCE and MED distinguish them with the help of numbers after the headwords, which LDOCE and MED display as superscripts. This ensures that "*(a)* they do not look as if they were part of the spelling of the word, and *(b)* they could not be confused with the section marks" (Svensén 1993: 64). CIDE uses guidewords to differentiate between the various meanings of headwords. It does not include section marks, though, but rather presents the sections that would normally belong to one dictionary entry as individual articles. This facilitates the search for particular meanings of query terms, since headwords and guidewords are displayed together in the results list. Nonetheless, it can also mislead the learner because there is no apparent differentiation between polyseme headwords, homonyms or section marks.

One of CIDE's drawback is that subheadwords are marked in exactly the same way as headwords, and that they are only distinguished from headwords by being indented like definitions. Undoubtedly, this makes it harder for the users to differentiate between them and thus to quickly find the beginning of an article when skimming through the dictionary. OALD clearly distinguishes headwords from subheadwords by marking subheadwords in light blue font, so that they do not distract the user's attention from the headwords (cf. chapter 3.1.1). Nevertheless, they are sufficiently marked to be noticed by OALD's users when they scan articles.

[30] For information on drawbacks of the color blue as a means of highlighting words, see chapter 3.1.1.

Subheadwords in COBUILD are displayed in gray font, similarly to grammar labels. Despite being displayed in bold, they are even less discernible than definitions and thus do not facilitate the navigation within the articles.

MED does not include subheadwords but accords headword status also to those lexical units that are treated as subheadwords in CIDE or OALD. While, for instance, CIDE and OALD subsume *-legged* under *leg*, they constitute two separate entries in MED. As electronic dictionaries generally do not suffer from space restrictions, MED's policy to convert subheadwords into headwords is certainly preferable. Not only does this facilitate the location of the lexical units in question within the dictionary but it also spares the users the search for the subheadword within the article.

LDOCE's presentation of lemmata is certainly the best out of all dictionaries evaluated. All information belonging to the lemma, with the exception of the phonologic transcription, is grouped together in a thick blue bar that automatically attracts the user's attention. Headwords and part of speech information are displayed in negative text, in bold white font, which makes them nicely stand out from the other information presented in the lemma bar.

Lemmata in COBUILD, LDOCE, MED and OALD indicate the frequency of the headwords. The systems their compilers chose differ considerably and are not equally practicable for learners. Apart from indicating which words should be included in the dictionaries and "which words they[31] cannot do without at a certain stage of learning" (Heuberger 2000: 89), word frequencies are also the basis for the choice of the defining vocabulary and are "often used to determine the ordering of meanings in dictionaries" (Svartvik 1999: 292). One can only assume that this has also been the case in the dictionaries evaluated, as none of them offers detailed information on the methods used for structuring their articles.

OALD's compilers indicate the 3000 most frequent headwords. Their approach of marking these headwords, which also constitute the defining vocabulary, with a preceding key symbol, is certainly the least favorable. A more detailed classification, as in the other three dictionaries, and possibly even a distinction between spoken and written discourse would have been more desirable. In addition to this, the use of the key symbol is rather confusing as the symbol presented in the introductory text, i.e. a

[31] The learners

blue horizontal key, differs greatly from the symbol used in the dictionary, a red vertical key. It could easily make learners wonder if the different symbol might have a special function.

According to OALD's blurb (OALD: *The Oxford 3000^{TM}*), these 3000 "keywords are both frequent and used in a variety of contexts" and comprise British as well as American English terms. They are taken from the BNC and the Oxford Corpus Collection. However, "since spoken language is underrepresented in standard corpora (such as the BNC and the Bank of English) a fact like the high-frequency use of *well* in spoken discourse […] may well 'disappear' in a megacorpus dominated by written texts" (Svartvik 1999: 292). OALD's compilers have tried to keep such inconsistencies to a minimum, though. The lack of a detailed stratification of frequency indications also has advantages. In a more comprehensive system, minor inconsistencies, which could be due the composition of the corpus, would probably have been more apparent.

In addition to these very frequent words, regularly used words such as those denoting the parts of the human body or "words which are useful for explaining what you mean when you do not know the exact word for something" (OALD: *The Oxford 3000^{TM}*) were added to the list. "These words were identified by consulting a panel of over seventy experts in the fields of teaching and language study" (ibid.).

The compilers of OALD list all 3000 words in an extra section, namely *The Oxford 3000^{TM}*, which also includes lists of frequently employed language study terms, "words which are important for language study, but less important in everyday life" (ibid.), as well as short lists of arts, science, business and finance terms. OALD is the only dictionary to present such a compact listing of frequently used English words and words that could be important for learners of English. Despite their apparent use for language study purposes, such as the systematic expansion of vocabulary, it remains doubtful whether or not students will actually invest the time necessary to effectively work with these lists. It seems to be aimed more at EFL and ESL teachers than at students, indeed.

LDOCE also indicates the 3,000 most frequent English words. It is the sole dictionary to explicitly point out in the blurb that it "is organized on the basis of frequency. The most frequent meanings of a word are shown first, and homographs are shown in frequency order" (LDOCE: help file). Its compilers are highly innovative in that they distinguish between spoken and written discourse. W1 and S1

indicate the 1,000 most frequent written and 1,000 the most frequent spoken words. W2 and S2 denote those words that are between the 1,001 and 2,000 most frequently written and spoken words. W3 and S3 similarly refer to the words that belong to the 2,001 to 3,000 most frequently written and spoken ones (cf. LDOCE help file). "Keeping in mind that the reference book is intended for more advanced learners, one cannot help but argue that this figure is clearly insufficient" (Heuberger 2000: 91).

This distinction between written and spoken language reveals, for instance, that *foundation* is among the W2, the 2000 most frequent written words, but that it is used rather infrequently in spoken discourse. It does not contain a label for frequently spoken words, which means that it is not among the 3,000 most frequent spoken words. *Foundation* is included in OALD's defining vocabulary and consequently considered as a high frequent term. In MED, it is marked as *highly frequent* and in COBUILD with three black diamonds, which can also be interpreted as quite frequent. None of these dictionaries informs their users about the fact that *foundation* is used more often in written language than in spoken discourse, which clearly underscores the importance of a differentiation between frequency information for spoken and written words. Such a distinction should consequently also be introduced in the other dictionaries evaluated. Apart from the differentiation between spoken and written English, a distinction "between British and American English within the frequency markers" (Heuberger 2000: 90) would also be desirable as it would reveal differences between British and American English usage.

It is very likely that these 3,000 high frequent words also constitute the defining vocabulary used in LDOCE. The CD-ROM's help file does, however, not offer any information on this topic nor does it include a list of the words constituting the defining vocabulary, so that this is just an assumption. Words outside the defining vocabulary are displayed in blue font and thus easily distinguishable.

MED and COBUILD distinguish several groups of frequently used words. MED's classification ranges from *low frequency*, over *quite high* (*) and *high frequency* (**) to *very high frequency* (***). Unfortunately, neither user guide nor study sections inform the learner about the numbers that these categories represent or on which corpus or corpora the classification based. A quick test with MED's *SmartSearch* reveals that 2,294 headwords are classified as having a *very high frequency*, 2,359 headwords as being *high frequent* and 2,635 as being *quite high*

frequent. The search for words with a *low frequency* brought up the remaining 36,912 headwords. *The Oxford 3000*^{TM} comprises the same headwords that are marked *very high frequent* in MED and also some of those marked *quite high frequent*.

The very high frequent words and some of the high frequent words also constitute, in all probability, the basis for the choice of the defining vocabulary, roughly 2,500 words comprising "the most common and basic words in English" (MED: Study Section *Defining vocabulary*). According to MED's introduction to the defining vocabulary, these words are only used in their "most basic and central meanings" (ibid.). They are listed together with a short introductory text in a special study section, called *Defining vocabulary*. All words and all forms used in the dictionary are indicated and "there are no prefixes or suffices that can make additional words". Words outside the defining vocabulary are displayed in small caps, just like in OALD and LDOCE.

COBUILD indicates frequency information with the help of black and white diamonds. The more black diamonds are displayed, the more frequent the word is. The most frequent words are marked with five black diamonds. To the detriment of the learners, no information on the number and kinds of words included in these five frequency bands are given in the help file.

Svartvik lists the numbers of words contained in the frequency bands of Collins COBUILD2 (1999: 292): frequency band 1 contains the most frequent words, approximately 700, which are mainly grammar words; frequency band 2 includes about very frequent 1,200 words. The words represented in these two bands "account for approximately 75 per cent of all English usage" (Svartvik 1999: 292). Band 3 comprises roughly 1,500, band 4 circa 3,200 and frequency band 5 about 8,100 words. All in all, COBUILD marks more words than the previous two dictionaries, namely just under 15,000. Svartvik quotes COBUILD2's help file that "the words in the five frequency bands are of immense importance to learners because they make up 95 % of all spoken and written English" (ibid.). It is not very likely that these figures have changed considerably over the past years and that they are also applicable to the edition of COBUILD evaluated here.

Svartvik states that "the 95% figure is interesting in that it is the level that has been found to be critical for second language learners' comprehension of unsimplified texts" (ibid.). This entails that the words for which frequency

information is given in the other dictionaries, are not numerous enough to enable learners to comprehend authentic English texts. They should therefore be provided with more and more detailed frequency information, particularly in LDOCE and OALD, which are far from labeling a satisfactorily number of headwords. Not to speak of CIDE, whose compilers do not indicate frequency at all nor restrict themselves to a defining vocabulary.

There is a common sense among many authors that etymological information "should in principle occur only in monolingual dictionaries in the user's native language" (Svensén 1993: 189). According to Jackson "there is little evidence […] that users routinely resort to a dictionary for this information" (2002: 126) and Battenburg similarly maintains that students and scholars in search for diachronic information on a word usually turn to specialized reference works (cf. 1991: 60). Jackson further claims that etymological information is the type of information in a dictionary article that is the hardest to decode, "needing as it does some background knowledge in history, and specifically in the history of languages. Otherwise, what sense can anyone make of terms like 'Old High German'?" (Jackson 2002: 126). It is thus not likely that the users of CIDE, COBUILD and MED, which do not feature etymological information, will greatly miss this type of information.

In keeping with Hausmann (1977: 20), Svensén adds that the inclusion of etymological information in learners' dictionaries might even be to the learners' detriment because they could get an incorrect idea of the present meaning of the word in question (cf. 1993: 189). It is therefore necessary to present the information about original word(s) in a way that their relation to the present-day meaning of the respective word becomes apparent. Svensén furthermore suggests that the information should be presented in the opposite of chronological order, from the present-day meaning to earlier stages in the word's history, which is done in OALD.

court	Date: 1200-1300 Language: Old French Origin: Latin cohors; COHORT (LDOCE)
court	Middle English: from Old French cort, from Latin cohors, cohort- yard or retinue. The verb is influenced by Old Italian corteare, Old French courtoyer. Compare with COHORT. (OALD)

LDOCE specifies the time when a given headword has entered the English language, the language from which it came as well as the earliest distinguishable

original word and the language in which it first occurred. OALD, in contrast, offers its users more detailed etymological information, stating important stages in the headwords' development. It furthermore lists influences on the development and, similarly to LDOCE, cross-references the learners to etymologically related words. Although both dictionaries display these cross-references in small caps, those in OALD, are presented more clearly with the help of the the indication *Compare with*.

While the information given in LDOCE could be more precise from an etymological point of view, the information presented in OALD seems to be too difficult for most learners. Whether the majority of learners are familiar with the development of the English language is questionable, not to speak of stages in the development of other languages, such as French or Italian. LDOCE's policy of vaguely indicating the time when words entered the English language is therefore certainly more helpful than OALD's precise indications, in particular when it comes to words that do not stem from Indo-European languages. Battenburg criticizes that "etymological coverage of lexical items has been uneven. Lexicographers are much more apt to deal with Indo-European borrowings rather than those representing other language families" (1991: 60). This is only partly true for the two dictionaries in question. Both list, for example, when and from which language the word *raccoon* was borrowed into English. Their transcriptions of the original word differ greatly, though. Although speakers of English will most likely be puzzled by either transcription, LDOCE's transcription is certainly more confusing than OALD's because it employs the letter *ä*, which is not part of the English alphabet. LDOCE's compilers have not given any indication as to what this letter represents or how it could possibly be pronounced.

raccoon	Date: 1600-1700 Language: Virginia Algonquian Origin: äräkhun (LDOCE)
raccoon	early 17th cent.: from Virginia Algonquian aroughcun. (OALD)

Both dictionaries also provide the learners with etymological information on lexicalized names and offer "morphological analyses of lexical units in terms of processes of word formation" as demanded by Svensén (1993: 62). Both of them indicate, for instance, the origins of *boycott* and *smog* and give detailed information on the historical background of the former. Yet, they do not offer information about the etymology of compounds.

Etymologic information is, in conclusion, in most cases presented in user-friendly ways, either in an extra information window to the right of OALD's main articles or in a pop-up window that can be accessed over a link in LDOCE's lemma bar. The inclusion of such information can be considered an extra asset of both dictionaries. The majority of dictionary users, however, do certainly not perceive the exclusion of etymologic information from the remaining three dictionaries as a major drawback.

4.1.2 Part of Speech and Morphological Information

In 1971, Rey-Debove stated that "on est frappe, lorsqu'on ouvre un dictionnaire *quelconque*, par l'absence d'information explicite sur la catégorie. L'absence de catégorie entraîne l'absence de genre (et de nombre, si le nombre est lexical)"[32] (1971:156). It can safely be said that, over the past decades, dictionary making has undergone considerable changes and that Rey-Debove's statement about the absence of grammatical information in lemmata does not apply to the majority of contemporary dictionaries anymore. All five tested dictionaries indicate the headword's word class and provide the learner with more or less detailed additional information on their grammatical properties.

Lemmata in CIDE, MED and OALD are structured similarly. The headword is displayed first, then information on the headword's pronunciation(s) and finally its word class. OALD, which groups the sub-entries for a word's various word classes in one article, indicates all possible word classes together in the lemma and then again at the beginning of the individual sub-entries. In CIDE, MED and OALD, the headword of the currently consulted article is displayed in the lemma and in a top bar above the dictionary window so that the learners always know which article is presently shown. In contrast to CIDE and OALD, whose top bars just include the headword, MED also indicates the headword's word class in the top bar, which remarkably facilitates the navigation between several articles having homograph headwords. The same is true for LDOCE in which the headwords are directly followed by an indication of their word class in both the results list and the individual

[32] It is stunning to note the absence of explicit word class information when one opens a dictionary. The absence of word class information entails the absence of genre (and nunber, if the number is lexical).

lemmata. In CIDE, LDOCE and OALD, the part of speech information is typographically marked in order for it to be more easily recognized. In CIDE and OALD it is displayed in italics and in LDOCE, in bold print and italics. In MED it is not highlighted particularly but still easily identifiable due to its prominent positions in the lemmata and in the top bar.

COBUILD constitutes the only exception with regard to the presentation of part of speech information. An explicit indication of the headword's word class is not given in the lemma, as in the other dictionaries, but only after definition and example(s). COBUILD's users might determine a headword's word class with the help of the its plural, past or superlative forms given before the definition. If, however, several word classes are subsumed under one sub-entry, all inflectional forms are be given together in the lemma, making it impossible to quickly deduce the word class. Yet, it remains questionable how much attention learners generally pay to such information unless they are looking for the correct formation or spelling of a particular form. Furthermore, these inflecctional forms are likely to be overlooked since they, as well as all other grammatical information given in COBUILD, are displayed in gray print and are therefore less prominent than all other information given in the article. Needless to say, COBUILD's policy of abbreviating the part-of-speech codes is neither necessary in an electronic dictionaries nor particularly user-friendly. *N* for noun or *DET* for determiner could as well be spelled out.

Another drawback of COBUILD and LDOCE is that "for a very few words, such as abbreviations, contractions and some words of foreign origin, no grammar is given, because the words do not belong to any word class, or are used so freely that every example could be given a different word class, e.g. AD, ditto, mpg, must've" (COBUILD help file).

"In the past the commonest way was to list [abbreviations: K. M.] separately in an appendix. Nowadays there is an increasing tendency to include them in their alphabetical places in the main list" (Svensén 1993: 67/68). In none of the dictionaries evaluated abbreviations are registered separately; they all list abbreviations and contractions in the A-Z parts of the dictionary CD-ROMs. In CIDE, abbreviations are not labeled with a special code either. Rather, word classes of foreign words and contractions are specified. MED and OALD are the only

dictionaries evaluated which provide their users with information on the word classes of foreign headwords, contractions and abbreviations.

The fact that the codes in the tested dictionaries used to indicate the part of speech are mostly quite similar does not automatically mean that the headwords are also coded identically. As can be seen in the articles for the five test words, it is rather unlikely that there are great differences between the codes for headwords belonging to word classes such as noun, verb or adjective. There are, however, frequent discrepancies and "terminological confusion regarding other parts of speech" (Svensén 1993: 85).

The, for example, is marked as *determiner* in CIDE, COBUILD and MED while in OALD it is coded as *definite article*. The question here is not whether one of them is incorrect, but rather which of them is more helpful to the learners. On the one hand, *determiner* comprises several word classes and thus reduces the number of part-of-speech codes. Using more general codes seems to be advisable as learners will probably familiarize faster with a few codes than with a complex coding system. *Definite article*, on the other hand, is considerably more precise. It informs the users about the grammatical properties of *the* and helps them distinguish *the* from other determiners. OALD's policy, therefore, seems to be preferable for productive uses of the dictionary, as they usually require such precise indications. A more general code is certainly sufficient for receptive uses, though.

In summation, each way of coding can facilitate the work with the dictionary in particular situations but can also make it more challenging in others. This is probably why LDOCE combines both approaches and markes *the* as *definite article, determiner* or why MED and COBUILD label it as *determiner* but also inform the learners about its function as definite article.

Headwords that are parts of words, such as affixes, are even more challenging for the dictionary compilers than the previous examples. They cannot be labeled as 'easily' as word classes. Nevertheless, they should also be clearly marked and distinguished since "they equip the user with a key to the systematics of word-formation and provide a means of working out by analogy the meaning of words which are not included in their complete form" (Svensén 1993: 67).

In CIDE, *–legged* is coded as *suffix,* in COBUILD as *COMB in ADJs* and *COMB in ADJ-GRADED*[33], and similarly in OALD as *in adjectives*. While the codes used in

[33] Combining form in ungraded adjectives and in graded adjectives respectively

CIDE and COBUILD are doubtless more precise than OALD's, they are also more difficult to comprehend. All in all, *suffix* is probably the best choice in this case as it is the only code stating explicitly the place of *–legged* within potential combinations. Even though the place of the hyphen before *legged* should convey the same information, it is bound to be overlooked by the learners and is, in consequence, less user-friendly. It can be expected that the majority of potential users of advanced learners' dictionaries are fairly familiar with the concept of pre- and suffixation and should therefore be able to not only comprehend the code *suffix* (which is rather unlikely in the case of COBUILD's codes) but also to interpret the information given and to successfully form new words with it.

The differences in the coding of headwords partly reflect the diverging opinions on the purposes of such part-of-speech information in lemmata. According to Zgusta, "the purpose of the lemma is to identify the lexical unit, to locate it in the (formal, frequently specifically morphological) system, and to describe its form" (1971: 250). Svensén, in contrast, argues that

> the main function of the part-of-speech information is not to locate the headword in a theoretical system of classification. Instead, it describes the grammatical properties of the headword, calling on the user's knowledge of regularities in the grammar of the language (1993: 82).

The previous examples have shown that it mainly depends on the user situation of the dictionary whether it is more helpful to simply "locate the headword in a theoretical system of classification" (ibid.) or whether a code indicating of some of the headword's grammatical properties is preferable. Even though the user situations are not equally frequent their significance for the everyday use of the dictionaries should not be underestimated. Codes combining both approaches and that are adapted to both situations, as for example in LDOCE, are consequently advisable and most user-friendly.

Apart from informing learners about derivational affixes, the dictionaries evaluated also provide their users with information on varieties of headwords and inflectional morphology.

In LDOCE, MED and OALD, varieties of headwords are mostly listed in a separate article containing a short cross-reference to the main entry. In CIDE and COBUILD, learners are directed right to the main entry, which includes both varieties (cf. chapter 3.2.1). In contrast to LDOCE and OALD, in which both varieties are listed in the lemma of the main entry, the main entries in MED only

indicate one variety, namely the British English one. The article for *theater*, for example, refers the learner to the main entry for *theatre*, in which, strangely enough, the alternate spelling is not even mentioned. Even though the edition of MED evaluated is clearly marked as "British English version" (MED help file), it can be expected that the two major varieties of English, British and American English, are treated equally well. Merely containing American varieties of British English headwords, but not relating the varieties to each other, is therefore not sufficient.

In some cases, such as *theater*, LDOCE directly presents ist users with the main entry, whereas in other cases like *color* the learners are still shown an entry with a cross-reference to the main entry. It can be assumed that such inconsistencies are due to the process of adapting the dictionary to the CD-ROM medium and should be gradually eliminated. In LDOCE, British and American varieties are nicely distinguished with the help of different colors and labels. The British English variety is displayed in a yellow-orange print and the American one in light blue. In OALD, they are similarly marked in dark and light blue and labeled as well. CIDE and COBUILD, in contrast, do not distinguish the varieties satisfactorily. Both are displayed in the same print and the same color and are only differentiated with a short label, which in COBUILD can hardly be perceived because of its light blue print. "In the case of electronic reference works, the use of colours or a different print as a means of highlighting the labels [is desirable and: K. M.] would not entail extra costs" (Heuberger 2000: 73).

The dictionaries' ways of dealing with irregular inflections resemble their approaches to varieties of headwords. "As a general rule, such [irregular inflectional: K. M.] forms are allotted to entries which consist solely, or largely, of morphological information and which at the same time explicitly refer the user back to the main entry for the lexeme in question" (Cowie 1983: 101). This is the case in CIDE, LDOCE, MED and OALD, whose search facilities lead the users either directly to the main entry or present them with a short article containing nothing but a cross-reference. In all dictionaries evaluated, irregular inflections are "indicated [in the main entry: K. M.], even if they have no observable effect on the meaning", as demanded by Zgusta (1971: 250).

"In *COBUILD* […], the compilers have gone a step further and additionally included all present participles, third person singular forms and plural forms, even if they are perfectly regular" (Heuberger 2000: 71). Although Heuberger considers this

a waste of space and Rey-Debove finds that "informer sur tous les types du système […] alourdirait [le: K. M.] texte d'informations inutiles"[34] (1971: 159), COBUILD's policy is not necessarily as superfluous as the critics claim. COBUILD's presentation of the most important forms enables learners to quickly check a spelling or eliminate uncertainties. Nonetheless, as has been shown in chapter 3.2.1, there are still minor shortcomings and inconsistencies in the treatment and the retrievability of irregular forms in all of the five dictionaries evaluated.

If the dictionary is used for receptive purposes, COBUILD's morphologic search, in which learners can type in any form of a given word, is certainly of great help. In the case of productive uses of the dictionary, LDOCE's so called *verb form* tables showing "the inflections of all regular and irregular verbs in the dictionary" (LDOCE: help file) prove to be helpful, "as learners concentrating on one text often tend to search only for the specific form they are dealing with" (Heuberger 2000: 72). LDOCE furthermore offers the opportunity to display headwords twice, once in the lemma bar and once again underneath the lemma bar with syllable dots indicating possible ways of dividing them. According to Svensén, this type of information can be of some help for the active use of the dictionary (cf.: 1993: 65/66). It is certainly a nice gadget but not necessarily required in advanced learners' dictionaries, whose users can be expected to correctly divide words.

4.1.3 Pronunciation

"La nécessité de préciser quelques prononciations « difficiles » […] c'est toujours fait sentir en lexicographie"[35] (Rey-Debove 1971: 160). This is particularly the case if more than just the "position of the stress and the length of the stressed vowel" (Svensén 1993: 71) has to be specified. As the pronunciation of English can usually not be inferred from its spelling, "it comes as no surprise that phonetic transcriptions are among the information categories that learners of English most often check" (Heuberger 2000: 108). A phonetic transcription should therefore "in principle be given in full for each headword" (Svensén 1993: 71) in a dictionary.

All dictionaries evaluated inform their users about the pronunciations of the headwords they contain. Lemmata in CIDE, MED and OALD always present

[34] Informing about all types of the systems loads the text with useless information
[35] The necessity to indicate certain difficult pronunciations has always been felt in lexicography.

learners with the phonetic transcription of the headworda. In LDOCE, users can choose whether or not it should be displayed. COBUILD is the only dictionary that, unfortunately, does not offer phonetic transcriptions but entirely relies on recorded pronunciations. The remaining four dictionaries also feature such sound files. "Thus the audio material has not been used to supplement but rather to replace the transcriptions" (Heuberger 2000: 110). However, "Transkription bietet dem Benutzer die Möglichkeit, sich die Aussprache eines Wortes auch visuell vor Augen zu führen und so vielleicht genauer zu durchdenken und zu erfassen"[36] (Herbst/Klotz 2003: 253) and should therefore always be given.

The system used in CIDE, LDOCE, MED and OALD to transcribe pronunciations is the IPA, the International Phonetic Alphabet, which is usually employed for the transcription of the main Western languages. It "represents each human speech sound with a unique symbol" (Heuberger 2000: 108) and has become an important "aid in learning the pronunciation of a foreign language" (Jackson 2002: 102). Even though Herbst and Klotz (2003: 68) argue that learners might reject the IPA because of its technical character, Landau finds that most learners "as a rule have acquired some familiarity with the principles of phonetics in the course of their language study" (Landau 1989: 94). They should consequently not find it very challenging to interpret the signs. Yet, there is one sign, the tilde over the nasalized vowel, that is not part of the IPA but that is used in CIDE, MED and OALD for the transcription of nasals. Only LDOCE uses the IPA sign /N/ for nasals instead, as for instance in *denouement*. Since nasals are rather infrequent in English, though, neither of the two symbols should cause too many difficulties, in particular because the users always have the recorded pronunciations at hand as well, to which they can compare the transcriptions.

COBUILD's scope with regard to pronunciation is restricted to British English RP, Received Pronunciation, although Landau demanded already in the mid-90s that "there is no question that widespread varieties such as the alternative ways of saying *either* with initial /aI/ or /i/, must be represented" (1989: 95). Needless to say, the high importance of American English worldwide should also be reflected in the dictionaries, which is why CIDE, LDOCE, MED and OALD also include GA, General American, variant pronunciations. While in LDOCE both varieties of a headword's pronunciation are fully transcribed, CIDE, MED and OALD in most

[36] Transcriptions offer the user the opportunity to visualize a word's pronunciation and thus to maybe reflect about it and to grasp it better.

cases only indicate those parts of the American pronunciation that differ from the British English one. They show "alternative pronunciations for entries only when the second pronunciation is so different from the main one that it might not be understood easily, for example: **cervical** /ˈsɜːvɪkl, sɚˈvaɪkl/" (MED: help file). Unfortunately, MED does not indicate minor but nonetheless important differences between British and American English pronunciations, as for instance in *board* or *court*, /kɔːt/ and /kɔːrt/. Although this small difference certainly does not hinder learners from understanding the American pronunciation of *court*, which is, according to MED's help file, the reason why the second transcription has been left out, it might indeed hinder them from correctly pronouncing the American variety.

This policy entails that many lemmata, as for instance *foundation*, contain only one transcription, which usually is completely sufficient. CIDE typographically marks the different varieties most visibly: British English pronunciations are displayed in red, American onrd in blue and those that apply to both British and American English in black. This choice of colors is also reflected in the design of the speaker signs (🔊), on which the learner has to click in order to hear the pronunciation of the headwords. They are, similarly to MED, red for British and blue for American English. LDOCE and OALD label American English varieties with a '$' sign or *NAmE*, respectively. The speaker signs in OALD do not reflect varieties of English and in LDOCE, there is only one speaker sign for both varieties, which leads its users to a special pop-up window where they can manually choose which pronunciation should be played.

The double representation of the pronunciation in a transcription with the IPA and as a recorded pronunciation of a native speaker of English, markably improves the user-friendliness of the tested dictionaries and makes the pronunciation information more accessible to the learners.

> Not even a mature transcription system like the IPA can never convey such an authentic image of the correct pronunciation of word like a recorded sample, and especially learners who otherwise have little exposure to the English language can profit greatly from this tool. (Heuberger 2000: 109/110)

All dictionaries evaluated feature speech recordings of the headwords, which are especially helpful in the case of compounds whose lemmata usually do not include phonetic transcriptions. COBUILD, LDOCE and MED additionally offer the option to play the pronunciation automatically whenever the user opens a dictionary entry.

In LDOCE and MED, users can furthermore decide whether this should be the British or the American English pronunciation. This can be a useful feature if learners mainly use the dictionary for (oral) productive purposes. Should they, however, consult the dictionary more often for receptive purposes or should they, when composing a text, frequently switch between articles in search for particular expressions, it might become rather disturbing. MED's Quick Find, which automatically plays the recorded pronunciation for each word over which the pointer is briefly positioned, can easily become very irritating when working with texts.

"In normal cases, it is sufficient to indicate the pronunciation of the entryword in its canonical form, but further indications are necessary if there is some unpredictable variation within the paradigm" (Zgusta 1971: 251), which is often the case for irregular inflected or derivational forms. In this respect, COBUILD greatly surpasses its competitors. It includes not only the recorded pronunciation of each headword, but also the pronunciations of all inflected forms presented at the beginning of each definition. COBUILD, MED and OALD also contain recorded pronunciations and the transcriptions of derived (sub-)headwords, such as *–legged*, whose pronunciation with numbers, /legId/, differs considerably from one of the two possible pronunciations in adjectives /legd/. It goes without saying that such important differences in pronunciation should be noted somewhere, either in the main entry, as in COBUILD and in OALD, or in a separate short article as in MED, since the average learner cannot be expected to be aware of them.

"With longer headwords, the inflected form has to be abbreviated, and the pronunciation information must then be abbreviated in exactly the same way" (Svensén 1993: 79/80). This is done in OALD, in which the plural of *workman* is abbreviated to *–men* and /-m´n/. Yet, OALD, CIDE and LDOCE, also indicate alternative pronunciations for *work-*, which further complicates the presentation of the pronunciation information. In OALD, the pronunciation is presented as follows: /◄ »wɛ:km´n; *NAmE* ◄ »wɛ:rk- *noun* (*pl*. -men/ ◄ -m´n; *NAmE* ◄ /). The multitude of abbreviations could become rather confusing for some learners, particularly since the label for North American English, *NAmE*, precedes the transcription of the pronunciation of *workman* and is then followed by the label for the plural form.

In LDOCE, only transcriptions are abbreviated and inflectional forms fully displayed, whereas in CIDE there are not even transcription given for plural forms. In this respect, CIDE is consequently not of much help to learners as it leaves them wondering whether or not the plural forms are pronounced differently. Apart from COBUILD, which fully displays a number of inflectional forms, MED is the only dictionary that presents its users with unabbreviated inflectional forms as well as unabbreviated transcriptions: *workmen* /wɛ:kmˊn/. Svensén's demand for abbreviated inflectional forms is definitely of a vital importance for the design of print dictionaries, in which space is a critical factor, but can certainly be considered outdated in the case of electronic dictionaries. Not only does the presentation of unabbreviated inflectional forms and transcriptions help learners cope with such forms more quickly but it also offers them the opportunity to compare both forms more easily.

Apart from pronunciations of inflected and derived forms, weak and strong forms of one an the same headword can challenge learners. "Particularly, function words such as articles, pronouns, and prepositions often have a 'weaker' pronunciation in connected speech, and this must be taken into account" (Svensén 1993: 70). For that reason, all five dictionaries present their users with the pronunciation of weak and the strong forms of, for example, *the*. While COBUILD contains British English sound files for both forms and for the pronunciation in front of a vowel but no transcriptions, LDOCE comprises transcriptions for all three forms but features only the recorded British and American English pronunciations of the strong form. MED includes the transcriptions and recorded pronunciations of all three forms in British English but only one, namely the strong form, in American English. OALD seems to comprise all three forms as well, or at least their transcriptions. The presentation of the pronunciation in the lemma, however, is so bewildering that it is rather unlikely that learners will find out within a reasonable amout of time which pronunciation and which speaker sign correspond to which form and which variety: /◂ Dˊ; *NAmE* ◂; ◂ Di; *NAmE*; *strong form* ◂ Di:; *NAmE*/. There is no indication whether the second *NAmE* refers to /Di:/ or to *strong form*, which are theoretically both possible since, as has been shown before, the label can be placed before or after the pronunciation to which it refers. Even though it includes the British and the American English recorded pronunciation of one form and the transcription of the weak and the strong form, CIDE cannot keep up with its competitors because it does

neither distinguish strong and weak forms nor does it indicate which transcription is pronounced.

"The information about pronunciation may need to be of several kinds: (a) which sounds occur (qualitative facts); (b) what is the length of the sounds (quantitative facts); (c) the position of the stress" (Svensén 1993: 69). While the transcriptions of the five test words are identical with regard to quality and quantity of the sounds represented, differences in the position of the stress in polysyllabic words can occasionally be found.

The previously discussed case of *denouement* makes such differences visible. This is, of course, a very special case, as *denouement*, is of French origin and can, therefore, also be pronounced the French way with the stress on the last syllable: /«deInu:»mA:N/. Only LDOCE and OALD indicate this pronunciation. The recorded pronunciation given in COBUILD also corresponds to the French original. MED and CIDE indicate only the second possible pronunciation: /«deI»nu:mAN/, which LDOCE and OALD also contain. It is interesting to note that the slight stress on the first syllable is only reflected in the transcription in OALD. All other dictionaries only indicate the main stress on the second syllable: /deI»nu:mAN/. CIDE's transcription, /deI»nu:.mA:/, stands out from the other ones. Not only is the last vowel longer than in the other transcriptions, but there is also a dot between the second and the third syllable, indicating a syllable division (cf. CIDE: study section *Phonetic Symbols*). This is rather strange, particularly since there is no such division in the French original. CIDE is the only dictionary to include such dots indicating syllable divisions. It remains questionable whether this is of great help to the learner.

As compound words are generally not transcribed, their stress is usually indicated within the headword. *Black box*, for instance, is displayed as « *black* » *box* in LDOCE, MED and OALD. CIDE and COBUILD do not indicate stresses in such a way. In CIDE, learners usually have to guess which part of the compound is stressed as headwords consisting of two or more words often have neither a transcription nor a recorded pronunciation. In COBUILD, learners can determine stresses by attentively listening to the recorded pronunciations, which is, of course, not ideal either. In CIDE, LDOCE, MED and OALD, compounds that are usually spelled in one word are transcribed like any other regular headword. In this case, the stress is

indicated in the transcription, as for example in *blackboard*: /ˈblQkbç:d/ or /ˈblQkbç:rd/.

Unfortunately, the recorded pronunciations in all dictionaries evaluated are still spoken in isolation. The latest edition of LDOCE, which was published too late to be still included in this evaluation, features recorded pronunciations of all example sentences shown in the articles. “The opportunity to listen to complete sentences is undeniably most valuable […]. Users are thus not only presented with words in isolation but learn about the correct intonation of natural English utterances” (Heuberger 2000: 110). This can be particularly helpful in the previously discussed case of weak and strong forms of words. It is understandable that the dictionaries do not yet include recorded pronunciations of all examples comprised on the CD-ROM, as there are, especially in the case of COBUILD, LDOCE and OALD, simply too many. Nonetheless, the new LDOCE’s method of recording the pronunciations of the examples given in the definitions is a good starting point and should preferably be taken over by the makers of the other dictionaries evaluated.

4.2 Explanation

As has been found in chapter 2.2, monolingual learners’ dictionaries are used mainly for receptive purposes. Thorough explanations of the headwords’ meanings are therefore crucial to this type of dictionary. The target users’ limited competence in the L2 entails, however, that it is not sufficient for these explanations to merely provide them with information on the headwords’ meanings and their grammatical and syntactic properties. The latter are particularly important for the productive use of the dictionary and should therefore be treated accordingly. The presentation of this information in an easily comprehensible style is consequently as important for this type of dictionary as the information itself.

4.2.1 Definitions

Definitions, the information category describing meanings of headwords, are undoubtedly the most frequently consulted part of the dictionary article (cf. chapter 2.2). Despite the high importance that the majority of language learners presumably accord to definitions, they often fall short of the users’ (and critics’) expectations.

Heuberger even claims that “from the various information categories presented in a learners’ dictionary, definitions are certainly among the most unsatisfactory and disputable ones” (2000: 16). This is mainly due to the fact that a standardized defining policy for learners’ dictionaries has not been established yet. “Although no concrete theory for writing definitions exists, certain methods are employed” (Battenburg 1991: 46) but none of these is suitable for all word classes or for all words belonging to one word class. Lexicographers have to decide for each individual headword which type of definition suits the lemma best and which information about the lemma the definition should include. As a result, definitions of one and the same headword can vary considerably in quantity and in quality.

The lack of standardization becomes obvious when one takes a look at classification systems of definition types and methods of defining. Already with regard to terminology, there does not seem to be much common ground among the various classifications. What is called a method of defining in one categorization, is considered a type of definition in another one.

Rey-Debove (1971: 211-229) categorizes definitions of nouns and verbs as follows: 1) *inclusion*, 2) *analyse*, 3) *mot synonyme*, 4) *opposition* and 5) *definition en métalangue de signe*. Moreover, adjectives can, in addition to the previously discussed types, be defined with the help of relative clauses, participle constructions and prepositional phrases. Taking over Rey-Debove’s classification, Rothe (2001: 88/89) includes *opposition* into *analyse* in the classification of noun definitions, but leaves them as individual groups in the categorization of adjective definitions. She furthermore adds a new category, viz. *multiple-bite definition*, which comprises definitions consisting of several parts and various definition types. Similarly to Rey-Debove, Battenburg (1991: 46/47) discusses four methods of defining: 1) *synonym*, 2) *analytical*, 3) *synthetic* and 4) *rule-giving method*. Jackson (1994: 131-6 and 2002: 95) and Heuberger (2000: 15-17) add a fifth category to Battenburg’s classification, namely *typifying definitions*. They differentiate between 1) *analytical*, 2) *synonym*, 3) *typifying*, 4) *synthetic* and 5) *rule-based definitions*.

Hanks (1987: 117-131) discusses the explanatory strategies used in COBUILD dictionaries. Dividing definitions into two parts, he presents four “explanatory strategies” (ibid.: 117) for the first part of definitions, which is supposed to show the use of the headword: 1) *A x is* …, respectively 2) *X is* … for uncountable nouns, and 3) *To x means* … as well as 4) *If you x*, … for verbs. He does not classify general

explanatory strategies for the second part of definitions, which identifies the meanings of the headwords, but mainly concentrates on special cases such as metaphors, figurative meanings and idiomatic expressions.

Harras presents various classifications for methods of defining. She introduces three general methods, namely 1) *description with defining characteristics*, 2) *description with stereotypes* and 3) *categorization* (1991: 13-78). Based on Hanks' findings, she distinguishes five explanatory strategies (ibid.: 85/6), viz. 1) for nouns *(A) X is* …, 2) for adjectives and adverbs *A x activity is* … or *Someone who is x is* …, 3) for giving usage information *X refers to* … and explanations of the form 4) *X (…) means* … and 5) *If p, q*. She furthermore gives a short overview of the set of methods that she established together with Strauß and Haß (ibid.: 89/90 and cf. Strauß/Haß/Harras 1989). According to this set of methods, nouns and adjectives are to be defined as *X characterizes Y as Z*. Such definitions are supposed to include typical as well as distinctive features of the concept. Verbs can be defined in the same way or, similarly to Hanks' proposal, as *If you x (…) then you y* and usage information should be introduced by phrases such as "*im Kontext C bezeichnet man mit **X** auch Y*"[37] (ibid.: 90).

In contrast to the previously discussed categorizations, Svensén (1993: 116/7) distinguishes four types of definitions: paraphrases and synonyms or near-synonyms, true definitions, hybrid forms and descriptions of the headword's function and use. True definitions can be divided into intensional and extensional definitions and hybrid forms comprise all combinations, "consisting of a true definition or a paraphrase, followed by one or more synonyms or near-synonyms" (ibid.: 117). Similarly to Svensén's classification, Herbst and Klotz (2003: 33-37) differentiate five methods of defining: 1) *paraphrase*, 2) *synonyms or near-synonyms*, 3) *combinations of paraphrase and synonym*, 4) *pragmatic information* about the context in which a word is used, and 5) *encyclopedic information*. They furthermore distinguish three types of definitions: *intensional*, *extensional* and *prototypical* or structural-semantic definitions.

On first sight, the differences between the classification systems seem to outweigh the similarities. Nevertheless, certain categories resemble one another and others are even identical (cf. Table 8). Seven out of eight classification systems include at least one category for analytical definitions. Hanks, whose categorization

[37] In context C, X is also used to denote Y.

stands out from the other classification systems, places more emphasis on typical characteristics of the definiendum than on its distinctive features. Harras, Jackobsen and Heuberger also distinguish such typifying definitions from analytical ones. Half of the categorizations incorporate a group for synthetic or extensional definitions, which are not regarded separately in the remaining classifications. While Svensén subsumes paraphrases and synonyms under one category, they form separate groups in three classifications and only of them is considered in the remaining four. Three classification systems furthermore contain a category for rule-based definitions.

The following types of definitions, namely analytical, typifying, synthetic, paraphrase, synonym and rule-based definitions, definitions containing usage information and those giving encyclopedic information, will form the classification system for the subsequent evaluation. From hereon definining methods will be referred to as "a set of rules to be applied in an orderly way, which lay down in a more or less strict fashion […] in which way a lemma sign of a specific class is to be described within the framework of the dictionary article" (Wiegand 1999: 179). Definition types will be considered as kinds of definitions which are formed according to one of the previously specified set of rules. In the following, a closer look will be taken at their characteristics and their implementation in the dictionaries evaluated.

Analytical or intensional definitions, which are based on Aristotle's analysis, express "a generic conceptual relationship whereby concepts are arranged in classes according to similarities and differences noted between them" (Svensén 1993: 122). They are composed of a genus term, *genus proximum*, indicating the superordinate class to which the definiendum belongs and one or more *differentiae specificae*, typical features of the definiendum, which distinguish it from other concepts belonging to the same superordinate class.

court	an area of ground, such as a short road or a square, which is not covered by a roof and is mostly or completely surrounded by buildings (CIDE)
screen door	A **screen door** is a door consisting of a wire net with very small holes stretched over a frame which allows air but not insects to move through it. (CIDE)

The second example illustrates that at first a more general term, *door*, is introduced, which is then followed by an enumeration of distinctive elements, which demarcate the definiendum, *screen door*, from other types of doors. The use of the

indefinite article at the beginning of the definition "is necessary to prevent the definition from being taken as a paraphrase" (Svensén 1993: 123). The following example nice illustrates that indefinite articles are particularly important if definitions are kept rather general in order to avoid the inclusion of excessive encyclopedic information.

marrow	a large vegetable that grows on the ground. Marrows are long and thick with dark green skin and white flesh (OALD)

Without the indefinite article at the beginning of the definition the impression could arise that all large green vegetables that grow on the ground, for instance zucchini or cucumbers, could be referred to as *marrow*.

This "basically contrastive" (Ayto 1983: 90) approach is particularly helpful for learners "because the semantic field is clearly indicated" (Battenburg 1991: 47). CIDE's definition of *court* provides learners not only with an explanation of the headword but also with vocabulary that they might need to describe similar concepts, such as roads or squares, their structures (with or without a roof) or their surroundings. Even more important, "the definition is suited to substitute for the referent" (Heuberger 2000: 15). Heuberger (ibid.) and Svensén (1993: 122) therefore consider analytical definitions as the basic or classical type of definition and find them especially useful in learners' dictionaries.

Accordingly, one could expect analytical definitions to be the most frequently used type of definition. "Many dictionary entries are not defined this way, however, and even those that are do not exclude all other things within the class" (Landau 1989: 120). In LDOCE, barely 13.5 percent of the tested noun definitions are analytical ones and even COBUILD, which has the highest percentage of analytical definitions, includes merely 26 percent (cf. Tables 9a to 9c). One reason for the surprisingly low percentages could be that analytical definitions are not suitable for "a number of words, e.g. many adjectives and uncountable nouns" (Heuberger 2000: 15). The verb *board up*, for example, can be explained analytically with a definition such as: *to cover*[38] *a window or door with wooden boards*[39] (MED). More abstract verbs, such as *hold court*, which is described with a paraphrase in all five dictionaries, are more challenging. The frequent use of typifying instead of analytical definitions also diminishes the percentages of analytical definitions.For nouns,

[38] *Genus proximum*
[39] *Differentiae specificae*

LDOCE's compilers employ typifying definitions four times as often as analytical ones. The average percentage in the tested entries in all dictionaries is 50 percent, with MED being the only exception with 40 percent of typifying definitions.

Typifying definitions are structured similarly to analytical ones. They contain a *genus proximum* and one or more characteristic features. Nonetheless, "instead of focusing on additional inherent facts, the definition gives more information on what is typical of the referent" (Heuberger 2000: 16). Concepts whose shape or nature distinguish them well from others close in meaning can best be defined with analytical definitions. Those, however, whose function or use is more distinguishing than their nature or physical appearance can be better explained with the help of typifying definitions.

screen saver	A **screen saver** is a program which protects the screen by automatically covering a still image with a moving image if the computer has not been used for a few minutes. (CIDE)
foundation	an organization that is established to provide money for a particular purpose, for example for scientific research or charity (OALD)

Again, the definitions present the learner with a genus term, *program* and *organization*, and characteristic features of the *definienda*, but focus on their function and purpose rather than their physical appearance. If a screen saver had to be defined analytically, the definition would most likely include references to other programs and would explain in what way screen savers differ from these other programs. This would inevitably lead to a definition that could also be taken from an IT handbook.

Often, analytical and typifying definitions are combined in order to give learners an understanding of both the physical characteristics of a concept and its use or function.

board	a long thin flat piece of wood, used especially for making floors and other parts of buildings: PLANK: (MED)
foundation	**Foundation** is a skin-coloured cream that you put on your face before putting on the rest of you make-up. (COBUILD)

The first example begins with an analysis of a *board* as being *a long thin flat piece of wood* and continues with an explanation of its function as a building material. In the second definition, the *skin-coloured foundation* is first distinguished from other creams and then further explained with a description of its use.

Despite their usefulness for the explanation of rather abstract concepts, Heuberger claimes that typifying definitions have "clearly been overused" (2000: 16) in the learners' dictionaries he examined. Jackson also prefers analytical definitions since they give the learner "a more accurate and detailed picture" (1994: 135) of the *definiendum*. The fact that roughly half of the examined noun definitions are typifying definitions indicates that the compilers of the dictionaries in question possibly overuse this method of defining. The typifying parts of COBUILD's and OALD's definitions of *board* could very well be omitted, or at least enhanced by an example of this *particular purpose* as it is done in LDOCE and MED (see above).

board	A **board** is a flat, thin, rectangular piece of wood or plastic which is used for a particular purpose. (COBUILD)
board	a piece of wood, or other strong material, that is used for a special purpose (OALD)
board	a flat piece of wood, plastic, card etc that you use for a particular purpose such as cutting things on, or for playing indoor games (LDOCE)

Synthetic or extensional definitions are less frequent than analytical or typifying ones. In the dictionary articles examined, they account for only 1.2 in CIDE to 5.7 percent in OALD of all noun definitions and are, thus, the group with the lowest percentage in CIDE and COBUILD. Extensional definitions differ from intensional ones in that they do not represent the content of the concept but specify its range. The range of a concept "can be defined as the combination of all the separate elements or classes which the concept comprises" (Svensén 1993: 121).

court	the king, queen, their family, and their friends, advisers etc (LDOCE)
court	the people in a court, especially the judge and JURY (MED)

All dictionaries, except COBUILD that does not include a definition of this sense of *court*, define *court* in the sense of *a king's or queen's entourage* synthetically. Even though Svensén states that "the definiens consits of a listing of all concepts that are included in the definiendum" (ibid.: 124), it is not always possible or advisable to specify all of them. The enumeration of members of the court is not exhaustive but fully sufficient to give learners an idea of the concept. Itemizing for example

ministers or servants as well would presumably not help learners comprehend the definition any faster or any better.

In the second example, naming all people present in a court would most likely even hinder learners from quickly grasping the concept since already *jury* is not part of LDOCE's, MED's and OALD's defining vocabularies. In addition to this, judicial terms such as *magistrate, attorney* or *solicitor* would most likely further complicate the definition. This is presumably why the compilers of the tested dictionaries restrict the list to two in LDOCE, MED and OALD, or three terms in COBUILD. What is more, each definition is introduced by a paraphrase similar to *the people in a court*, which helps learners who are not familiar with legal terms comprehend the definition better. CIDE does not include such terms at all and gives only a general description of the concept. Certainly, the exclusion of special terminology does not greatly influence the receptive use of the dictionary. It is, however, of no help for the productive use.

Paraphrases are a common means of representing lemmata, as in the above example, or phrases containing the headword. In the entries examined, paraphrases constitute the most frequently used type of definition of verbs and phrases. In COBUILD, LDOCE and OALD, they are employed rather seldom for definitions of nouns, whereas in CIDE and MED, they account for 10.7 and 17.6 percent of the noun definitions. Overall, paraphrases constitute half of COBUILD's and close to half of LDOCE's, MED's and OALD's definitions. Only CIDE has a lower percentage of roughly 35 percent. It is the sole dictionary examined which, overall, has with 53.4 percent more "true definitions"[40] (Svensén 1993: 120) than paraphrases.

The process of paraphrasing "is to be regarded as moving from the expressional aspect to the content aspect" (ibid.: 117), which is then represented by a different expression.

-legged	having the number and type of legs mentioned (OALD)
on board	involved with something or working for an organization (LDOCE)

[40] I.e. analytical and synthetic definitions

Both definitions can substitute for the referent and are, therefore, useful for the productive use of the dictionary[41]. Apart from regular paraphrases, two special types will be regarded separately in the following: *To x means …* and *If p, q*. They are used particularly often for the definition of verbs, which could be due to the fact that "if one tries as far as possible to maintain interchangeability of the headword and the definition, the syntactic properties of the verb will need to be reflected as far as possible in the syntax of the definition" (Svensén 1993: 129). *Screen* in the following example consequently has to be defined with a transitive verb. *Check* can be both transitive and intransitive, though. In contrast to synonym definitions, definition with a paraphrase of the type *To x means …* clearly indicate that *check* can only replace *screen* if it is used transitively. *To x means …* and *If p, q* can be used interchangeably because they both indicate the syntactic properties of the headword.

screen	To **screen** people or luggage means to check them using special equipment to make sure that they are not carrying a weapon or a bomb. (COBUILD)
leg	If someone **pulls** your **leg** they try to persuade you to believe something which is not true as a joke. (CIDE)

These two types of paraphrases are markably prominent in COBUILD, which is due to COBUILD's full-sentence policy. Nevertheless, they can also be found in the other four dictionaries, in which they are employed mainly in definitions of idioms. "Ein Vorteil dieser Vorgehensweise ist sicherlich, daß so Kollokationen […] und Konstruktionen integriert werden können"[42] (Schwalm 1998: 25). Grammatical and usage information about the headword is not only given in the form of labels and definitions, but is also demonstrated in a fairly authentic context. This way, "erreichen die Definitionen sprachlich einen hohen Natürlichkeitsgrad. Sie ähneln stark Erklärungen, die man auch in der mündlichen Kommunikation geben würde"[43] (Herbst/Klotz 2003: 54). While this is of no importance to monolingual dictionaries for native speakers, it is particularly helpful in learners' dictionaries. This is especially true in cases when COBUILD's full-sentence definitions "avoid the technical character and syntactic clumsiness of more complex alternatives" (Herbst

[41] In OALD's example *a long-legged insect*, *–legged* can easily be replaced by the paraphrase given in the definition: *an insect having long legs*.
[42] One advantage of this approach is certainly that collocations and constructions can be integrated
[43] This way, definitions achieve a high degree of linguistic authenticity. They strongly resemble explanations that one might give in an oral conversation.

1996: 326, in Heuberger 2000: 27), as for example the definition of *shake/rock the foundations of something* or *shake/rock something to its foundations*.

paraphrase	to bring major changes or cause serious damage to an institution, set of beliefs etc, especially by making people question their basic ideas (MED)
full sentence	If an event **shakes the foundations** of a society or a system of beliefs, it causes great uncertainty and makes people question their most deeply held beliefs. (COBUILD)

Although both definitions contain enumerations, the second one is considerably less complicated and thus more easily comprehensible. In the first definition, the list of potential effects is followed by examples of what could possibly be affected. In the second definition, however, they are arranged in the opposite way and separated from each other. This ensures a more natural and logical construction of the sentence and additionally demonstrates how to correctly use *shake the foundations* in a sentence.

Nonetheless, full-sentence definitions are not automatically the best choice for learners' dictionaries. They also bear the risk of being repetitive, confusing or simply too long. Furthermore, "[wirkt sich der merkliche: K. M.] Leseaufwand sich wieder negativ auf die Benutzerfreundlichkeit aus"[44] (Herbst/Klotz 2003: 55). Learners might also find it difficult to locate the important pieces of information in the sentence.

screen	If you **screen** your telephone calls, calls made to you are connected to an answering machine or are answered by someone else, so that you can choose whether or not to speak to the people phoning you. (COBUILD)

Yet, in the articles examined there is only a limited number definitions that are exceptionally complicated and that should be made more user friendly.

All in all, the mixed approach that is taken in CIDE, LDOCE, MED and OALD is most beneficial since it allows compilers to choose the best solution, full-sentence or phrase, for each headword individually.

Synonym definitions constitute another common type of definition. In a synonym definition the *definiendum* is "defined by another word which the user is more apt to know" (Battenburg 1991: 46).

[44] The increased time and effort entailed by the reading affects the user-friendliness.

board	An arrangement or deal that is **above board** is legal and is being carried out honestly and openly. = honest ≠ shady (COBUILD)
court	a courtyard (LDOCE)

According to Zgusta (1971: 27), absolute synonymy exists only if the main components of lexical meaning, viz. the denotative meaning, the connotative meaning and the range of application, are equal for both words. "*Designatum* refers to the essential properties of the thing or concept that define it; *connotation* refers to associated features; and *range of application* refers to the variety of context in which the word may be used" (Landau 1989: 105). While complete synonymy is fairly frequent in technical terminology, it is rare outside technical language "as there is hardly ever a correspondence in all three of the above-mentioned aspects" (Heuberger 2000: 16).

Near-synonyms, terms which correspond in one or two aspects, are more common. "Using synonyms and near-synonyms as definitions saves spaces, and the method is entirely valid when the need for semantic precision is not too great" (Svensén 1993: 119). Yet, since near-synonyms do not correspond in all three aspects, "synonyms offered without meaning discrimination are of little value to language learners. Guidance is needed to illustrate how semantically related words differ in meaning and usage" (Battenburg 1991: 47). LDOCE's definition of *court* could leave the learners wondering in what way *courts* might differ from *courtyards* and is consequently not sufficient. COBUILD's definition of *above board*, in contrast, presents the learners not only with the synonym *honest* but also with a paraphrase indicating the legal aspect of *above board*, which is not necessarily contained in *honest*. Additionaly, COBUILD's definition also includes an antonym, *shady*, which COBUILD defines as *dishonest or illegal*. Listing both synonyms and antonyms is particularly helpful for productive uses of the dictionary and can help increase the learners' vocabulary.

LDOCE and MED contrast with COBUILD and OALD by marking synonyms with equal signs. Even though words introduced by an equal sign could be mistaken as absolute synonyms, this policy is still better than no indication at all. In LDOCE and MED, *courtyard* is furthermore preceded by an indefinite article, which could confuse learners since it could lead to the assumption that courts are a special type of courtyards. Neither of the two dictionaries explains in which way courts and courtyards differ, though.

Occasionally, information about the context in which a word or expression is used is more helpful to learners than bare definitions. Rothe states that "was die *definition en métalangue de signe* angeht, so richtet sie sich nicht auf den Inhalt des definierten Zeichens, […] sondern auf das sprachliche Zeichen selbst, und wird üblicherweise mit Formulierungen wie *se dit de, indique, a word for* … eingeleitet"[45] (2001: 87).

break a leg!	(informal) used to wish sb good luck (OALD)
court	**Court** used in the names of large houses or blocks of flats (MED)

The definition in first example comprises an explanation of the expression and information about it's purpose, and is therefore easily comprehensible for the users. The one in the second example, however, contains only information about the use but not about the content of the headword. This makes it markably less effective for translations. An explanation of the meaning of *court* in the names of buildings would undoubtedly enhance the definition.

Function words and interjections are examples of cases in which none of the previously described methods are suitable for the definition of the headword. "Especially in a dictionary intended as a practical aid rather than a systematic account of the sign content of a language, definitions of such words are more likely to confuse than to enlighten" (Svensén 1993: 132). Therefore, they are frequently "explained by means of *rule-based* definitions, which describe the meanings and uses of the lexeme in the form of rules and principles" (Heuberger 2000: 16).

the	You use 'the' before noun phrases in which the range of meaning of the noun is limited in some way. *I really enjoyed the book I've just finished reading.* (CIDE)
at	You use **at** to indicate the place or event where something happens or is situated. *We had dinner at a restaurant in Attleborough.* (COBUILD)

Most of these definitions do not fulfill the demand for syntactic interchangeability. Nevertheless, in combination with illustrative examples, they are preferable in these special cases.

[45] Definitions in the target language are not aimed at the content of the linguistic sign but at the sign itself and are usually introduced by phrases, such as used for, means, indicates, a word for ... .

Based on this classification system of methods of defining, a closer look will now be taken on the articles for one of the test words, whose definitions have hitherto been partially discussed. Special emphasis willll be placed on the strengths and weaknesses of the dictionaries' article structures.

It is not surprising that there are several ways to structure articles and that the compilers of different dictionaries opt for different structures. Despite minor differences, the articles for the test words *court*, *foundation*, *leg* and *screen* are structured similarly in all dictionaries examined. The exception is CIDE, whose articles differ greatly, on the whole, from those in the other dictionaries due to its rather exceptional entry structure. The articles for *board*, however, are structured astonishingly differently (cf. Table 10). Furthermore, some of them contain information that is not represented at all in the other dictionaries.

While COBUILD and OALD include only one article for *board*, LDOCE and MED contain two, and CIDE even four articles. *Board* is not a homonym, which is why it does not necessarily have to be represented in various articles. In the case of homonyms a clear distinction is desirable, though. COBUILD generally does not treat homonyms and polysemes differently. In a few cases, it presents its users with two articles for homonyms. The choice, which homonyms are displayed in two articles seems rather random, though. The other four dictionaries present homonyms in a more user-friendly way in separate articles.

CIDE's way of dividing polyseme headwords into a number of articles might proof to be helpful for productive uses of the dictionary, should the learner search for a specific meaning of a headword. Yet, CIDE's groupings of the meanings do not always support an easy retrieval of the information. It remains questionable whether learners would check *board (WOOD)* for *board shorts*. In the worst case, they might even misunderstand the word if they only look at the guideword *wood* and not at the individual definition of *board shorts*. This approach also renders the distinction between polysemes and homonyms practically impossible.

Whether the information about the different word classes of *board* should be given in one or two (sub-)articles, is mainly a question of the compilers' and the users' preferences. Nonetheless, COBUILD's policy of subsuming all word classes under one entry word, "is likely to cause many learners a lot of unneccessary problems" (Heuberger 2000: 125). In order to investigate the meanings of, for instance, the noun *board*, they first have to locate all occurrences of the noun in the

article. The sub-article for *board* in the sense of *food provided when you stay somewhere*, for example, is not grouped together with the sub-entries for the other senses of *board* as a noun. As a result, learners could easily overlook it.

CIDE's approach of listing phrases containing the headword in a specific sense in the corresponding sub-entry is clearly one of the dictionary's assets. Listing *on board* under *board (GET ON)* not only makes it easier to comprehend but also to memorize it. From a pedagogical point of view, COBUILD's structure is of not very helpful for the systematic expansion of the vocabulary. It could even evoke the impression that there is no connection between *board* (sub-entry # 7) in this sense and *above board* (sub-entry # 12). Although LDOCE contains two articles, their structures do not enhance the fast comprehension of *board*'s meanings either. This is due to LDOCE's policy of differentiating between sub-entries for the headword and those for phrases. Sub-entries 1 to 5, 7, 9 and sub-articles 12 to 15 focus on the noun *board*. The remaining sub-entries introduce the learners to phrases containing *board*. It would undoubtedly be more user-friendly if such valuable information were grouped together, as for instance in MED and OALD, and displayed after the presentation of *board*'s various meanings.

MED and OALD list collocations, phrases and idioms at the end of each article. OALD furthermore clearly differentiates and names the three groups, which facilitates the search for an information sought even more.

4.2.2 Grammar, Usage and Relations to Other Words

"Since we start to build sentences with words rather than abstract grammatical structures, it is natural to give grammatical information in the dictionary" (Svartvik 1999: 290). "Grammar can be regarded as a set of rules. The grammatical information given in a dictionary can be taken as a description of how the headword functions in relation to these rules" (Svensén 1993: 88). Yet, it is not possible and it would not make sense from a didactic point of view to explain the entire set of rules in a dictionary. The compilers of learners' dictionaries usually presuppose that their target audience is already familiar with a general set of rules and, as a consequence, focus on irregularities, exceptions or potential difficulties. Accordingly, Lemmens and Wekker state that "every good learners' dictionary should […] to some extent also be a good pedagogical grammar, giving information with examples on how to

form sentences and phrases in the foreign language by analogy" (1986: 9). And indeed, as chapter 2.2 has shown, there seems to be a high demand for grammatical information in advanced learners' dictionaries. At the same time, only a small fraction of the users actually know how to extract all this information. Svensén observes that "the design of dictionaries and the grammatical knowledge of their users are thus to some extent evolving in opposite directions" (Svensén 1993: 88). Similar considerations led Lemmens and Wekker to the conclusion that it is crucial to keep "grammatical codes as transparent and self-explanatory as possible, so that frequent reference to introductions or tables will become unnecessary" (1986: 11).

There are various ways in which grammar can be encoded in dictionary entries. "The level of abstraction can vary from a formalized and coded notation through uncoded metalanguage to authentic examples" (Svensén 1993: 88). From a didactic standpoint, one of the most favorable approaches is the inclusion of grammatical information into the definition as it often can be better retained this way. "Definitions […] give information about the grammatical structures that a word is used with, by explaining the word as it occurs in its typical grammatical structure or structures" (COBUILD: help file). As can be seen in the following examples, full sentence definitions are suited better to accommodate such information than short phrases.

board	**The boards** are the stage in a theatre. (CIDE)
board	**Board and lodging** is the meals and room that are provided when someone pays to stay somewhere, for example when working or studying away from home. (CIDE)
board	To **take on board** a job or responsibility or to **take** a job or a responsibility **on board** is to agree to do it. (CIDE)
board	if a plane or a ship is boarding, passengers are being allowed to get on it (MED)

In the case of *board*, merly two dictionaries, namely CIDE and COBUILD, systematically encode grammatical information in the definition. LDOCE, MED and OALD feature only one definition containing the headword and, thus, showing its grammatical characteristics. The definition in the first sample sentence taken from CIDE exemplifies the grammatical codes given in the lemma of the sub-entry and clearly indicates that *board* in the sense of *stage in a theatre* has to be used in the plural. The second example shows that *board and lodging* is uncount, which is certainly surprising for students when they first come across this expression, as they might expect that two nouns would require the plural. The sub-entry to which the

third sample definition belongs, does not even contain a code indicating where in the sentence *on board* should be placed. The demonstration of both possibilities in the definition is probably not only more easily comprehensible but can also be memorized better than more abstract codes. The last example, which, in similar versions, can also be found in LDOCE and OALD, entails that *be boarding* is intransitive, which is again most likely more elucidating and easier to memorize than the corresponding code.

Similarly to the demonstration of a headword's grammatical properties in its definition(s), their presentation in examples can help elucidate grammar codes. Svensén distinguishes dead and live examples. In dead examples, which "contain only the elements indispensable for conveying the grammatical information […], noun phrases are often neutralized into anonymous 'markers' or indefinite pronouns (pro-forms) and finite verb forms become infinitives" (ibid.: 90). Such examples can frequently be found in LDOCE, MED and OALD, in which they are either listed at the end of the entry or serve as headwords for sub-articles. In the dictionaries evaluated, they are mainly used to illustrate phrasal verbs, collocations and idiomatic expressions.

court	**pay court to somebody** (LDOCE)
court	**take someone to court** (MED)
court	**hold court (with sb)** (OALD)

Live examples, on the contrary, are not abstracted in such a way. "Illustrative phrases serve to show the usual collocations or contexts in which each sense is used, thus providing a variety of grammatical information, such as whether a word takes an indirect object or whether it is usually used in the passive voice" (Landau 1989: 89). Accordingly, every example containing the headword also informs the learners about its grammatical properties. They can provide "a pattern for parallel formations, both grammatically and lexically" (Svensén 1993: 92).

board	*I boarded the plane bound for England*. (COBUILD)
board	*The board is / are unhappy about falling sales*. (OALD)

Learners can deduce from these examples that the verb *board* in the former example has to be combined with a direct object, while *board* in the latter is a collective noun, which can alternatively be used with a verb in the singular or the plural. The latter example is particularly helpful for learners as the corresponding

grammar code in OALD, *[c + sing./pl. v.]*, is probably not as easy to memorize as the short example sentence.

When referring to grammar in dictionaries, most learners probably think of grammar codes since they are the most apparent indication of the headwords' grammatical properties. "Ideally, all grammar labels should have a mnemonic value enabling the learners to remember them more easily, thus sparing the dictionary user the trouble of constantly checking the explanatory chart" (Heuberger 2000: 61). Furthermore, as there are hardly any space restrictions in electronic dictionaries, the codes should not be abbreviated but spelled out in order to be more easily comprehensible. The systems of grammar codes used in the dictionaries evaluated differ considerably.

MED seems to have the most basic and also most easily comprehensible system. This is due partly to the fact that all grammar codes are spelled out and partly to MED's restricted number of grammar codes. The information about a word's grammatical properties in MED is held rather general. Verbs are, for instance, just classified into *transitive*, *intransitive*, *linking*, *auxiliary* and *modal* verbs. MED does not provide its users with more detailed information on, for example, "what type of Object (e.g. noun phrase, nominal clause)" (Jackson 2002: 19) a verb may take. "All symbols denote grammatical categories, rather than grammatical functions: they refer to word classes, verb forms or clause types" (Aarts 1999: 24). MED's compilers consequently presume that their target users are familiar with the grammatical properties of the individual word classes and are able to deduce a headword's grammatical characteristics from the indication of its word class.

LDOCE and OALD feature more complex systems of grammar codes. While LDOCE's grammar codes are spelled out to ensure a fast comprehension, OALD's are usually abbreviated. Although advanced learners can be expected to be familiar with codes, such as *[c]* for countable and *[u]* for uncountable nouns, LDOCE's codes *[countable]* and *[uncountable]* are undoubtedly more user-friendly. This becomes particularly obvious if one compares more complex codes, such as the previously mentioned code *[c + sing./pl. v.]*. LDOCE counterpart *[countable also + plural verb]* conveys the same information but is considerably less complicated.

CIDE's and COBUILD's compilers work with the most complex coding systems. Although CIDE features more codes than the aforementioned dictionaries, learners should not find it challenging to work with them as they are, in most cases, easily

comprehensible. CIDE's code are mostly spelled out or combined with abbreviations, which ensures their comprehensibility, as for instance *boarding, djective [before noun, not gradable]*. COBUILD, however, almost exclusively contains abbreviations, which often unnecessarily complicate the grammatical information. The code *PHR: PHR after v, v-link PHR, oft PHR n,* for example, gives detailed information on *board*. Whether the average user actually comprehends this code right away or looks it up in the help file if necessary remains questionable, though. In this case it is more likely that users will try to extract the grammatical information from the examples that accompany the definition.

All dictionaries employ a range of labels giving information on the contexts in which words are used. Yet, "labelling practices currently used in MLDs are far from optimal because, as with general monolingual dictionaries, there is no standardization of terms nor agreement as to how they should be applied" (Battenburg 1991: 74). While LDOCE and OALD mark *boards* in the sense of *a wall around the ice* as *American English* or *NAmE*, CIDE does not label it. CIDE and LDOCE similarly mark *(college/medical) boards*, whereas MED and OALD do not label the term.

The compilers of all dictionaries agree on the labeling of *leg it* and classify it as *informal*. LDOCE and OALD furthermore mark it as *British English* or *BrE*. With regard to frequency and style information other than *formal* and *informal* the labels differ more, though. The labels for *get your leg over* range from *informal* in OALD, to *very informal* in MED, to *informal not polite* in LDOCE on to *slightly taboo slang* in CIDE. From OALD's label, learners could get the impression that there is no difference in the degree of formality between *get your leg over* and *break a leg*, which is also marked *informal*, and might use it in the wrong context.

To sum up, all dictionaries examined thoroughly inform their users about how and in which contexts words should be used. Nonetheless, a few improvements are desirable. While MED should to present its users with more detailed grammatical information, COBUILD should not overtax them with too complicated codes. With regard to labels, it can be stated that after all, the labeling systems should be reconsidered in all dictionaries evaluated. In addition to this, the introduction of a general labeling system for all dictionaries would be desirable in order to avoid such discrepancies.

According to Jackson, "the second main way in which MLDs provide encoding information for learners is in respect of lexical patterning, specifically collocations, idioms, and other types of phraseology" (Jackson 2002: 137). In keeping with Hausmann (1985: 118), Mittmann defines collocations as "typical, specific and characteristic combinations of two words" (Mittmann 1999: 102). "Collocations differ from free combinations, in which the components are usually freely interchangeable" (Svensén 1993: 99). The focus will here be on semantic and lexical collocations as they are rather fixed and cannot be as easily replaced by alternative solutions as grammatical collocations about which Svensén states that they are "often an alternative to other constructions, for instance with a case and no preposition, and [are: K. M.] treated together with these in dictionaries" (ibid.: 100).

Collocations are composed of a base, which can be explained independently, and its collocators, which occur along with the base and which cannot be defined individually. Even though the individual parts of semantic and lexical collocations are not easily interchangeable, especially not if they have transferred meaning, combining bases with wrong collocators "does not necessarily produce false or contradictory utterances (ibid.: 98). Dictionary makers should nevertheless attempt to draw the users' attention to them. Accordingly, Mittmann argues that

> the quality of a learners' dictionary as an aid to understand texts can at least partly be measured by the number of collocations that it lists at the entries for the collocators, whereas the quality of a dictionary as a means for text production can be gauged by the number of collocations given at the entries for the bases (1999: 103).

In most cases, the dictionaries evaluated mark collocations in bold print to render them more easily recognizable. "However, […] there seems to be little consensus between the dictionaries on which combinations of words to highlight in this way" (ibid.: 106). For *court*, LDOCE and OALD include by far the most, namely 21, collocations. Often, they are highlighted in the examples but they also constitute individual sub-entries. CIDE and MED follow with 14 and 11 collocations respectively. COBUILD, which lists only 6 collocations, cannot keep up with its competitors.

Surprisingly enough, only one collocation is included in all five dictionaries, viz. *take somebody to court*. Four other collocations are contained in four of the five dictionaries, which is, if one considers the list of alltogether 48 collocations, rather astonishing. This result may lead to the assumption that other constructions are falsely classified as collocations as well or that there is no common ground among the compilers about the exact characteristics of collocations.

OALD, for instance, clearly identifies *hold court (with sb)* and *rule / throw sth out of court* as idiomatic expressions and therefore highlights them in blue in order to distinguish them from collocations. OALD's policy of marking abbreviations, such as *Ct* for *court*, in the same way is, however, rather confusing; in particular since, once again, there is no explanation of the labeling to be found anywhere in OALD's blurb. Similarly to OALD, LDOCE accords sub-entry status to a number of constructions that are marked as collocations in other dictionaries. By adding *etc* to the list, LDOCE's compilers furthermore indicate that other collocators than *squash/tennis/basketball* can be combined with *court*. LDOCE is the sole dictionary to point this out. While LDOCE and OALD employ various means of drawing the users' attention to collocations and other constructions, CIDE, COBUILD and MED simply display all of them in bold print, which is rather user-unfriendly. Svensén is, thus, certainly right to claim that "one can even go so far as to say that in many dictionaries it may often be difficult to know whether an example is intended to illustrate construction or collocation" (Svensén 1993: 102) as often compounds are also highlighted in the same way.

In all five dictionaries, collocations are mostly presented in the form of examples. The examples in CIDE, LDOCE, MED and OALD occasionally include paraphrased explanations whenever their users might find it challenging to deduce the collocations' meaning from the example. "The main function of the examples is therefore grammatical rather than semantic or lexical" (ibid.: 106). Therefore, in contrast to LDOCE, CIDE, MED and OALD paraphrase *settle (the case) out of court* to make it more easily comprehensible.

court	(= without taking legal action) (CIDE)
court	(= agree to pay someone in order to avoid a court case) (MED)
court	(= a decision was reached without a trial) (OALD)

It is interesting to note that CIDE and OALD focus on a different aspect of *settling a decision out of court* than MED, namely the fact that no legal action is taken. MED's explanation centers on the circumstances of reaching a decision without going to court. As can be seen from these examples, paraphrases are always displayed in round brackets and introduced by an equal sign, making it easier for learners to identify them as explanations and as not being part of the example.

COBUILD's compilers frequently combine definitions with demonstrations of collocations. "Using full sentences makes it easier to include both parts of the collocation in the definition. This means that no example is needed to illustrate that particular combination" (Mittmann 1999: 108). In CIDE, mainly compounds are presented in definitions while collocations are more frequently demonstrated in explanations. MED lists collocations under the definitions of sub-entries, which is a very convenient arrangement as it makes it easy for learners to relate a given meaning of a headword to a number of collocates that are related to this particular meaning. These collocations are usually displayed at the beginning of the line, then explained with the help of a paraphrase and finally exemplified, which "underlines the importance and typicality of the combination in question" (ibid.: 108). This arrangement also fulfils Hausmann's demand that "dictionaries should place the definition *after* the context and not *before*. There should be right-side definition and not left-side definition" (1999: 207). The same is by the way true for COBUILD's explanations of collocations in definitions. These are usually arranged according to the scheme *If you … then you mean …* . Hence, the collocation comes first and its explanation afterwards.

Hausmann also demands that "senses of dependent words should be defined nearest to the autonomous words they depend on. […] Only autonomous words and senses should be defined in their alphabetical place" (ibid.: 206). He concludes that for dependend words it is sufficient to have a cross-reference to the autonomous partner in their article. Whether or not such restrictions should still be made in electronic reference works is debatable. On the one hand, it reduces the length of the article and thus saves learners' time and effort. On the other hand, it also demands time and effort as they have to locate the collocation in the article, might then be cross-referenced to another article and will finally have to find the same collocation again in the second article. Even though finding a definite answer to this question requires further studies, it can safely be assumed that the inclusion of collocations in the articles of both base and collocators should be most user-friendly as long as the article structure permits easy navigation within the information categories presented in the article.

OALD's search engine, which allows users to type in several words and then tries to find articles in which they occur together, is definitely a good starting point. This feature should also be taken over by the other dictionaries evaluated. It often

solves the difficulty that "there is a large amount of collocation information in the dictionaries, though it is sometimes difficult to find" (Mittmann 1999: 110).

4.3 Exemplification

There are various types of examples, of which verbal illustrations are probably the most widely spread. With the rise of computer based dictionaries, formerly rare types, such as graphical illustrations, but also new types like audio and video sequences, have gradually gained importance. Although on first sight they do not seem to have much in common, they fulfill similar purposes in the dictionary. Contrary to popular belief, they do not only illustrate what is explained in the definition but greatly complement the information given there.

4.3.1 Verbal Illustrations

Zöfgen points out that one should only refer to parts of a dictionary entry as example "wenn es sich um […] eindeutig auf der *parole*-Ebene angesiedelte Äußerungen handelt, bei denen das […]Lemma-Zeichen in einem semantisch relevanten Kontext gezeigt wird"[46] (1994: 184). Generally spoken, "the purpose of the examples is to show how the entry-word functions in combination with other lexical units" (Zgusta 1971: 263). Nonetheless, the former definition clearly excludes information on collocations, which Zöfgen prefers to be listed separately (cf. 1994: 184).

Landau (cf. 1989: 165/166), Heuberger and Zgusta (cf. 1971: 263/264) underscore the, according to Heuberger, often underestimated importance of "verbal illustrations [that: K. M.] are not only used to supplement definitions, but are also employed to put the abstract information provided by grammar codes in concrete form" (Heuberger 2000: 52). "So gibt es durchaus Anhaltspunkte dafür, dass Benutzer von Lernerwörterbüchern häufig versuchen, die gesuchte Informations aus den Beispielen zu entnehmen und systematisch Angaben […] als weit weniger hilfreich empfinden"[47] (Herbst/Klotz 2003: 55). Obviously, it is not possible to provide examples for all potential uses of a headword. Therefore, the lexicographer

[46] When the expressions are clearly taken from the parole and when they show the lemma in a semantically relevant context.
[47] There are reasons to think that users of learners' dictionaries often try to deduce the information sought from the examples and that they consider systematic indications markedly less helpful.

rather “indicates only some examples which he considers typical and leaves it to the abstractive power of the user of the dictionary to form other combinations by analogy” (Zgusta 1971: 264). Apart from showing headwords in typical contexts, examples can also “indicate its range of application and show whether it is used metaphorically as well as literally” (Landau 1989: 166).

Examples can consequently have very different functions, which Drysdale (1987: 215) summarizes and classifies as follows:

(1) To supplement the information in a definition.
(2) To show the entry word in context.
(3) To distinguish one meaning from another.
(4) To illustrate grammatical patterns.
(5) To show other typical collocations.
(6) To indicate appropriate registers or stylistic levels.

He further concludes that examples usually fulfill several functions at a time and that grammatical information is often indicated incidentally in addition to the information that the examples are actually supposed to convey (ibid.: 217). Boogards remarks, however, that due to examples serving several functions at a time “it is not impossible that this accumulation of functions is damaging for each” (Boogards 1996, p. 310). Yet, the focus will not be on functions of the various examples here but rather on their suitability for learners’ dictionaries and their interaction with the corresponding definitions.

There are several types of examples, which Herbst and Klotz group into four categories ranging from 1) entirely fictitious examples to 2) examples made up on the basis of a corpus analysis to 3) (slightly modified) examples taken directly from a corpus to 4) examples taken from various sources (cf. 2003: 58). Categories three and four, which both comprise authentic examples, seem to be rather similar and only distinguished by the fact that the examples belonging to category three might be slightly adapted to better match the users’ needs. The question of which type of examples suits the learners best will only be investigated briefly in the following, as the dictionaries evaluated contain all of previously discussed types. Foremore, it is hardly possible to distinguish quotes from invented examples in the dictionaries evaluated. In contrast to their French counterparts, quotes in the tested dictionaries are neither specially labeled nor do they contain a reference to the source although Zgusta argues that already “the mere indication of the author is very valuable, because it gives at least basic orientation about the time when and the type of text

where the word occurs" (1971: 266). CIDE's, COBUILD's and LDOCE's compilers vaguely indicate at least which types of texts their corpus comprises and that in COBUILD all examples used in the dictionary are taken from this corpus.

In her comparison of English and French monolingual learners' dictionaries, Rothe (2001: 182) recapitulates that the corpora of English dictionaries, out of which examples are generally taken, usually embody relatively new, spoken and written, and mainly non-fiction texts. The structures of the corpora on which the dictionaries evaluated are based confirm this theory. The Cambridge International Corpus, CIC, from which many of CIDE's examples are chosen, comprised more than 300 million words at the time that the dictionary was published. About 25 million of these are spoken British and American English, which are partly taken from the Cambridge and Nottingham Corpus of Discourse in English. CANCODE is "a large collection of spoken English that has been built up by Cambridge University Press and the University of Nottingham" (CIDE study section 'Cambridge International Corpus'). CIC also includes the 8 million word Camebridge Learners' Corpus, CLC, which is composed of "examples of English writing from learners all over the world" (ibid.).

COBUILD, the only dictionary CD-ROM offering detailed information about its corpus. The Bank of English consists of over 400 million words and contains a wide range of texts, with written ones coming "from newspapers, magazines, fiction and non-fiction books, brochures, leaflets, reports, letters, and so on. The spoken word is represented by transcriptions of everyday casual conversation, radio broadcasts, meetings, interviews and discussions, etc." (COBUILD: help file). According to COBUILD, the material is quite recent, "with the majority of texts originating after 1990" (ibid.). Roughly 70 percent of the sources are British and 25 percent American English. The remaining 5 percent represent other varieties of English, such as Australian or Singapore English (cf. ibid.).

The CD-ROM contains a sample of the Bank of English, the Wordbank, incorporating 5 million words. When in doubt about a word, users can look it up not only in the dictionary but also in the Wordbank and can compare definitions, examples and grammatical explanations in the dictionary article with further examples in the Wordbank. The examples in the Wordbank are classified and labeled as *UK* and *US written*, about 3 million and 1 million words respectively, and *UK* and *US spoken*, approximately half a million words each. According to COBUILD's help file, the majority of the 105,000 examples contained in the dictionary were taken

over word for word from the Bank of English to show "typical grammatical patterns, typical vocabulary, and typical contexts" (ibid.). Examples were occasionally altered in order to better match the learners' needs. COBUILD's compilers try to provide the learners with at least one example for each word and meaning, with the exception of "concrete nouns such as bathmat, seahorse, and trombone, and a few other words where an example would add nothing to the information given in the definition" (ibid.). This restriction seems rather random, though. Articles for instruments generally do not include examples while those for *piano* and *violin* contain even several. In addition to this, in contrast to the entry for *seahorse*, definitions are complemented by at least one example in the articles for most animals.

In LDOCE, "thousands of word combinations and over a million sentence examples" (LDOCE help file) help elucidate meanings and uses of the headwords. 80,000 are taken from other Longman dictionaries. The origins of the examples given in the articles are not indicated, those in the Examples bank window are classified into *Extra dictionary examples* and *Sentences from books, newspapers, etc.* The dictionary's help file does not provide any further information on the number or the origin of the texts comprised in the corpus or which varieties of English they represent.

Unfortunately, MED and OALD do not inform the learners at all about the corpora on which they are based. According to Rundell, MED is "based on a 'World English Corpus' of 200,000,000 words, which consists of the *Bloomsbury Corpus of English*, with additional material developed especially for the dictionary (including a learner error corpus" (2002: 422). In OALD's help file, the British National Corpus and the Oxford Corpus Collection are briefly refered to without any mention of further details.

On the one hand, Heuberger argues that quotes show "how a word is *actually* used" (2000: 52), to which Herbst and Klotz agree that "authentischen Beispielen, die aus schriftlichen Quellen […] zitiert werden, Belegcharakter zu [kommt: K. M.]"[48] (Herbst/Klotz 2003: 58). In order for quotes to confirm the information given in the definition or with grammar codes, they need to be labeled properly. COBUILD's Wordbank and LDOCE's Examples bank window are a first step in this direction. Even though the sources are not indicated individually for each example, it is obvious that the examples presented are taken from authentic texts.

[48] Authentic examples taken from written sources serve as confirmation

Kirkpatrick, on the other hand, points out that "writers and journalists[49] like to play around with the language in a way that would sound not quite right from a non-native speaker" (1985: 12). In the following a few examples taken from LDOCE's and OALD extra examples windows illustrate Kirkpatrick's point.

court	*Now the company was in the soup, and its attorneys promptly removed the cases to the federal court.* (LDOCE)
court	*They've offered me the job, so the ball's in my court now.* (OALD)
court	*This **court** case could open a Pandora's box of similar claims.* (OALD)
foundation	*They clearly adore the multi-layered **foundations** of instrumental funk, and profoundly project this soulful hipster-cool attitude on All Night Burner.* (LDOCE)

Landau criticizes that "in dealing with actual quotations, one is constantly frustrated by their inclusion of words that are needlessly difficult or irrelevant to the usage being illustrated but that are integral to the quotation" (1989: 166). As neither in CIDE nor in COBUILD quotes are specially marked, it can only be assumed from their challenging vocabulary that the following examples are cited from the corpora. The example taken from MED illustrates that challenging vocabulary does not only occur in quotations, though.

court	*Dr Porter told **the court** that the post-mortem revealed signs of strangulation.* (LDOCE)
foundation	*According to Wegener, the sial masses of the continents shifted on the earth's actual mantle, the sima **foundation**.* (LDOCE)
leg	*The teak table has fluted legs.* (COBUILD)
screen	*Many of these cancer deaths could be avoided by regular **cervical** screening.* (CIDE)
	a computer/radar/TV/VDU screen (MED)

"If learners read these examples in order to obtain more information on the *syntax* of the headwords, they will probably not be too much disturbed by the inclusion of such (comparatively) infrequent terms" (Heuberger 2000: 54). If they, however, try to find out more about the headword's meaning, they will most likely find it challenging to look up all the terms outside the defining vocabulary. Certainly learners cannot be expected to be familiar with technical terms, such as *VDU*, or *VDT* in American English, or medical terms like *post-mortem*. Should they have to deal with visual display units or terminals in a different context, it should be fairly

[49] Whose texts often constitute important parts of corpora

easy to find their meanings with the help of a dictionary. Nonetheless, such special terminology is not appropriate for the exemplification of the meaning and the use of a headword since one cannot expect learners to first look up the words used in an example in order to comprehend it. The fact that often there are no contexts given that might help elucidate the words' meanings further complicates the learners' situation. Zöfgen therefore demands that "Beispiele […] keine unüberwindbaren Verstehensbarrieren aufbauen [dürfen: K. M.]. Deshalb muß der im Beispielsatz verwendete Wortschatz […] die Fähigkeiten des L2-Benutzers realistisch einschätzen"[50] (1994: 194).

Heuberger goes as far as to demand that a dictionary's defining vocabulary should also be respected in the choice of the examples as "clearly, the functions of definitions and verbal illustrations are basically identical in this respect[51], and different policies for these two explanatory techniques are hardly plausible" (Heuberger 2000: 58). In keeping with Heuberger, the examples employed directly in the articles should be as clear as the definitions. Those in the extra information windows, which are assumed word for word from a corpus, undoubtedly cannot fulfill this demand. However, since their purpose is the confirmation of the information given in definitions and examples, instead of the clarification of the headwords' meanings, the use of more challenging vocabulary or sentence structures should not hinder learners from working with these extra examples. This is most likely one of the reasons why the compilers of LDOCE mainly use invented or adapted examples in the articles and leave most of the authentic citations in the Examples bank window.

Herbst and Klotz list further drawbacks of authentic quotes, namely "dass unter Umständen stark kontextuell gebundene Sätze ebengenau ohne diesen Kontext präsentiert werden, wiederum zu unvermeidlichen Authentizitätseinbußen führt"[52] (2003: 59), as for instance in the following examples taken from LDOCE.

court	*Of how he had met, **courted**, wed Constance.* (LDOCE)
foundation	*Usually two main types are used – strip **foundations** and raft foundations.* (LDOCE)

[50] Examples must not build up insurmountable barriers to comprehension. Therefore, the vocabulary used in the example sentence has to realistically assess the competences of the L2 user.
[51] I.e. the elucidation of a headword's meaning and usage
[52] Under certain conditions, presenting strongly context related sentences without the context, leads to a loss of authenticity.

In addition to this, “das häufige Vorkommen von Namen in authentischen Beispielen” can lead to “Verständnis- oder Zuordnungsproblemen bei den Benutzern, was auch für nichtspezifizierte historische Ereignisse gelten kann”[53] (ibid.).

court	*Graf watched a few of the games while waiting to go on court against Tauziat.* (COBUILD)
leg	*They will televise both legs of Leeds’ European Cup clash with Rangers.* (COBUILD)
leg	*Leeds will have to win the second **leg** if they are to go forward to the finals.* (LDOCE)

The makers of both dictionaries assume that their users are familiar with the names of soccer teams. Yet, it remains questionable if the majority of users associates *Leeds* or *Rangers* with soccer or if they know that *Graf* and *Tauziat* were going to go on court to play tennis. The following examples illustrate that names and other references can easily be replaced by more general terms without taking away the example’s reliability.

court	*Both Democratic and Republican parties are courting former supporters of Ross Perot.* (COBUILD)
court	*politicians courting middle-class voters* (MED)

Even though Landau demands that “whenever actual citations can be used, especially in larger dictionaries, they should” (1989: 166), the pedagogical value of fabricated examples is irrefutable. “These examples can be constructed in such a way that they invite analogical applications by the user of the dictionary, if adroitly prepared, and consequently, they often have a great generative power” (Zgusta 1971: 267). They nevertheless also entail the risk of being “forced and artificial, whether awkwardly stilted or inappropriately colloquial” (Drysdale 1987: 213). Were the following example sentences not structured identically they would certainly appear to be less artificial.

court	*Tennis players hit the ball over the net which divides the court in two. Squash players hit the ball against the walls of the court.* (CIDE)

Herbst and Klotz’s concern that “Korpusbelege nicht selten Meinungen über Personen oder Sachverhalte zum Ausdruck bringen, die ungerechtfertigt sein mögen und im Extremfall von bestimmten Benutzergruppen als verletzend oder unkorrekt

[53] The frequent occurrence of names in authentic examples can lead to difficulties in comprehension or association on the part of the users, which is also true for unspecified historical events.

empfunden werden können”[54] (2003: 59) is certainly justified and can be extended to also include invented examples. “Dies betrifft unter anderem auch das Problem sexistischen Sprachgebrauchs und der Darstellung der gesellschaftlichen Rollen von Frauen und Männern in Wörterbuchbeispielen”[55] (ibid.: 60). In the articles evaluated, masculine and feminine names and pronouns are distributed fairly equally only in OALD (cf. Table 11). Table 11 lists only those names and pronouns that explicitly denote men or women. Although nouns, such as *the builders* (LDOCE: *foundation*) quite obviously refer to men, they have not been counted, as there could, in theory, be women among them.

The examples in COBUILD, LDOCE and MED consist of more masculine pronouns and names whereas those in CIDE more often refer to women. It is interesting to note that in the tested examples the traditional roles of men and women are still reflected to a certain extent. The compilers of all dictionaries evaluated employ feminine pronouns or names in the examples for *board*, in the sense of *to provide meals and a place to stay for somebody*. The exception is COBUILD which does not include an example for this meaning. Examples referring to acting are also mainly formed with feminine pronouns, CIDE being the only exception with one example containing a masculine pronoun.

screen	*She was a star of **stage and screen*** (OALD and MED)
screen	*She was the ideal American teenager, both on and off screen.* (COBUILD)
screen	*Her new movie opens in London tomorrow and will be screened nationwide next month.* (CIDE)
board	*He’s been on/treading the boards […] for nearly 50 years now.* (CIDE).

Examples of business situations, in contrast, are frequently formed with masculine pronouns and names despite the compilers’ apparent attempt to equally refer to men and women. Once again, CIDE contains more references to women than to men. The impression might arise that its compilers try so hard not to appear to be sexist, that they almost invert the traditional roles of men and women. This is, however, just an assumption which requires further investigation in order to be confirmed or disconfirmed.

[54] Examples taken from a corpus often reflect views about people or facts that might be unjustified and that might be perceived as offending or incorrect in extreme cases.
[55] This concerns, among others, the problem of sexist language use in dictionary articles and their presentation of the roles of men and women in society.

Closely related to the debate over authentic and invented examples is the question of whether full-sentence examples or short phrases are preferable for learners' dictionaries. The compilers of MED and OALD frequently employ "uncommonly short illustrations which nonetheless fulfill their purpose; it seems that the lexicographers have made it a rule to remove unnecessary words from the authentic samples" (Heuberger 2000: 57).

screen *a computer screen · a monitor with a 21 inch screen · They were staring at the television screen. · Move your cursor to the top of the screen · the screen display* […] (OALD)

screen *a computer/radar/TV/VDU screen*
A new icon will appear on your screen.
Suddenly the screen went blank. (MED)

The makers of COBUILD, in contrast, usually prefer longer sentences, which do not necessarily provide the learners with more detailed information on the headword. Hence, "for reasons of space, shorter phrases seem at first preferable to long sentences, especially if the latter do not provide more information than could also be conveyed by a succinct phrase" (ibid.: 55).

board *Arthur has made a recommendation, which he wants her to put before the board at a special meeting scheduled for tomorrow afternoon.* (COBUILD)

foundation *The foundation of the children's home was made possible by a generous donation from an anonymous benefactor.* (CIDE)

These two examples illustrate well the use of the headword in a sentence but do not enable learners to deduce their meanings. Full-sentence examples are consequently well suited to illustrate the information given in grammar codes and "to give collocations or to show the immediate 'semantic context' of a headword" (ibid.).

board [c + sing./pl. v.]
The board is / are unhappy about falling sales. (OALD)

Evoking a typical usage context, can help elucidate a headword's meaning and its stylistic level (cf. Herbst/Klotz 2003: 57). This is particularly important in CIDE, which often does not include definitions of sub-headwords. The aforementioned example for *foundation* also serves as explanation of this meaning of the headword as there is no definition given for it. Evidently, examples should offer some extra information to the definition but should not replace it completely. It also goes

without saying that (sub-) lemmata, definitions and examples should focus on the same piece of information and not on different ones as in the following examples.

on screen	*a well known screen-actor* (OALD)
screen	A screen is a vertical panel which can be moved around. It is used to keep cold air away from part of a room, or to create a smaller area within a room. *They put a screen in front of me so I couldn't see what was going on.* (COBUILD)
screen	a flat surface in a cinema or on a television or a computer system on which pictures or words are shown *Coming to your screens (= cinemas) shortly, the amazing adventures of "Robin Hood"*. (CIDE)

COBUILD's example would better match the definition of *screen* as *something that hides* and the compilers of CIDE should have added the example to the next definition *sometimes […] cinema is called* ***the big*** *screen*. Of course there are also other minor inconsistencies of which only a few will be mentioned in the following.

screen	*the beautiful altar screen in our local church* (MED)
foundation	<h> THE ALAN T BROWN FOUNDATION TO CURE PARALYSIS </h> <!--logo--> (COBUILD)

MED's example for *screen* "has no intrinsic informative value whatsoever, it does not clarify the meaning of the headword, nor is it a collocation but rather an ordinary syntactic group" (Heuberger 2000: 54). COBUILD's example, which can be found over the Full Text Search, still includes tags that learners might find confusing.

Summing up, Heuberger is definitely right to conclude that "verbal illustrations have generally been employed quite effectively in these CD-ROM reference works, inappropriate examples certainly being the exception rather than the rule" (2000: 57). Nonetheless, their compilers should reconsider a few issues, such as the respectation of the defining vocabulary or at least vague indications of the examples' origins.

4.3.2 Graphical Illustrations, Sound Files, Multimedia

The use of multimedia and hypermedia as a means of exemplification, such as illustrations, sound files or videos, indubtiably and clearly distinguish electronic from print dictionaries. They constitute an "Aspekt, der Hypermedia-Wörterbücher auch für Menschen attraktiv macht, die sonst nur selten ein gedrucktes Wörterbuch

aufschlagen würden"[56] (Storrer 1998: 108). As multimedia, hypertext and hypermedia are not clearly distinguished in the literature, they will briefly be discussed here in order to avoid confusion. Storrer defines multimedia as "die Integration statischer Medien wie Text, Graphik, und dynamischer Medien wie Animation, gesprochene Sprache, Musik und Video in eine Softwareanwendung"[57] (ibid.). Accordingly, multimedia is the integration of static and dynamic media into any kind of software, whereas hypermedia, a contraction of "*Hyper*text" and "Multi*media*" (ibid.: 107), denotes their integration into hypertexts. It consequently seems that hypermedia is a further development of hypertext.

Yet, Storrer's definition of hypertext in a later article (2001: 53) disconfirms this theses: "in Hypertexten können Text-, Bild-, Ton- und Videodateien zur anschaulichen Vermittlung lexikalischen Wissens genutzt und die Wörterbuchartikel durch computerisierte Verweise, sog. 'Links', verknüpft werden"[58]. Is hypermedia then just a part of hypertext? After a thorough literature study Eibel comes to the following conclusion:

> Verfolgt man die Ausführungen in der Literatur zum Begriffspaar Hypertext – Hypermedia, so wird schnell deutlich, dass die grundsätzlichen Fragestellungen zur delinearisierten Informationsdarstellung und der Verknüpfung von Informationseinheiten unter dem Schlagwort Hypertext bearbeitet werden, während der Begriff Hypermedia meist im technologischen Kontext der Kodierung und Speicherrepräsentation benutzt wird. Die Textform bleibt, gerade in Systemen zur Wissensvermittlung dominant.[59] (2004: 147)

He furthermore concludes that it remains a rhetorical question whether hypertext is part of hypermedia or whether hypermedia is a further development of hypertext (cf. ibid.). Eibel suggests that they should not be used to denote different concepts, as, due to the technological progress, their distinction is increasingly blurred. "Die Nutzung multimedialer Elemente ist als Anreicherung und Unterstützung der Texte zu deuten"[60] (ibid.), which is why both terms are used interchangeably from hereon.

Surprisingly enough, the makers of the evaluated dictionaries limit their use of multimedia elements to illustrations and sound files. COBUILD's compilers,

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[56] An aspect that makes hypermedia dictionaries interesting also for those people who would otherwise only rather seldom open a dictionary.
[57] The integration of static media, such as text, graphic, and dynamic media, for example animation, spoken language, music and video, into a software application.
[58] In hypertexts, text, image, sound and video files can be used to illustrate lexical knowledge and dictionary articles can be cross-referenced through so-called 'links'.
[59] If one observes the discussion in the literature about the terms hypertext – hypermedia, it soon becomes obvious that the term hypertext refers to the basic questions of non-linear presentation of information and of linking pieces of information, while the term hypermedia is mostly used in a technological context of codification and representation of memory. The text form remains dominant, particularly in systems aimed at conveying knowledge.
[60] The use of multimedia elements should be seen as supplement and support for the texts.

however, did not include illustrations nor sound files or videos. “It is not comprehensible why [COBUILD: K. M.] has afforded the luxury to do without the advantages which this explanatory technique offers, but it is very clear that this omission is to the detriment of the learners” (Heuberger 2000: 41).

Earlier versions of LDOCE, for example LIED, also feature video sequences showing “bestimmte kommunikative Funktionen in prototypischen Situationsabläufen”[61] (Storrer 1998: 111), such as ordering a meal in a restaurant. It is debatable whether or not dictionaries should include such stereotyped communication situations. While it is true that learners might generally find them informative and entertaining, such video sequences certainly do not correspond to the needs of the target group of advanced learners’ dictionaries but rather to those of beginners and maybe intermediate learners’ dictionaries. This does not mean, however, that videos cannot also support the information presented in advanced learners’ dictionaries.

Herbst and Klotz (2003: 254) argue that in the case of certain movements or actions “Grafiken […] ohne Kenntnisse dessen, was eigentlich gemeint ist, manchmal nur schwer zu interpretieren [sind: K. M.]”[62]. Leech and Nesi (1999: 297) state that “many expressions […] are difficult to explain in simple language, and the restrictions of the defining vocabulary may result in some verbose and clumsy definitions”. Definitions or illustrations of movements or actions should therefore be complemented with a short video showing them. This would be helpful since “the depiction of action in real time will enable any physical action, process, or change of state to be directly portrayed to the learner” (ibid.). If one compares Leech and Nesi’s findings in 1999 to the multimedia components of the dictionaries evaluated in here, it becomes obvious that there has not been much progress with regard to video sequences and that this “potential has [still: K. M.] not yet been fully exploited” (ibid.).

With the exception of COBUILD, all dictionaries evaluated feature illustrations to support their definitions. One of the criteria for the choice of test words from MED was that their entries have to contain illustrations. Yet, the fact that MED’s entries for the test words feature illustrations does not entail that the entries in the other three dictionaries also include graphics. Only one of CIDE’s entries, the one for

[61] Particular communicative functions in prototypical situations.
[62] Graphics are sometimes hard to interpret without knowing what is actually meant.

leg, contains an illustration. LDOCE features illustrations for *board* and *leg*; OALD for *court*, *leg* and *screen* (Fig. 23 – 36). As these illustrations do not always reveal the strengths and weaknesses of the majority of illustrations used in the four dictionaries, illustrations from other articles will also be referred to in this sub-chapter. In order to underline advantages and disadvantages, those illustrations were chosen for the evaluation that most clearly present them.

Even though it is desirable for dictionaries to include many illustrations, the number of graphics contained in a dictionary is not as important for its quality as the choice of illustrations and their integration into the dictionary according to semantic-functional principles (cf. Storrer 1998: 112). According to Storrer, empirical research has shown that "die schlecht koordinierte Verknüpfung von Multimedia-Objekten die Informationsaufnahme verschlechtert statt sie zu verbessern"[63] (ibid.).

Illustrations in LDOCE and MED are always presented right next to the definitions. "Thus, it is virtually impossible that the users will fail to recognize the availability of visual material when reading the entries" (Heuberger 2000: 47). Should an illustration relate to several articles it is depicted in each of them. "This achieves the interaction between the verbal and visual definitions which is the real purpose of illustrations in dictionaries" (Svensén 1993: 170). Doubtless, this policy is considerably more user-friendly than OALD's or CIDE's. OALD presents illustrations only with the main entry and, in contrast to LDOCE and MED, features cross-references to the illustration should articles other than the main entry refer to the picture. LDOCE and OALD surpass MED, however, when it comes to the exact location of the illustration within the article. While illustrations in MED are always presented in the same spot of the screen, LDOCE and OALD locate them right beside the sub-article to which they refer (Fig. art. 3, 4 and 25). This way, users do not run the risk of relating an illlustration to another, maybe similar meaning of the headword.

CIDE's A-Z part does not contain illustrations at all. They are grouped together in a special part only for illustrations. On the one hand, this approach has the advantage that learners can easily browse through the pictures, on the other hand it hinders them from directly comparing definition and illustration. In this respect, MED clearly outstrips its competitors as it presents every illustration at least twice, once in the A-Z part and once in a special part together with MED's other

[63] A badly coordinated linking of multimedia objects affects the reception of information instead of enhancing it.

illustrations. In all three dictionaries, the pictures incorporated in the articles are reduced in size and are enlarged in a pop-up window upon a double click in LDOCE and OALD or upon a click on the enlarge button in the top right corner of MED's illustrations.

It is important to note that illustrations exemplify rather than that they define as "il semble que le langage seul ait le pouvoir d'abstration généralisante nécessaire à la definition"[64] (Rey-Debove 1971: 36). In contrast to definitions or verbal examples, they do not describe the headword, but its meaning content, or as Rey-Debove puts it "l'illustration concerne la chose-nommée, jamais le signe-nommant"[65] (Rey-Debove 1971: 35). Hence, they can only complement but not replace definitions as "der Text das Verstehen des Bildes lenkt und es festlegt, das Bild seinerseits den abstrakteren Text veranschaulicht, so daß sich hierbei die zwei verfügbaren Möglichkeiten des Zugangs zur Welt ergänzen"[66] (Hupka 1989: 235).

According to Svensén and Hupka the "main purpose [of illustrations: K. M.] is to provide visual support for the description of the meaning content of linguistic units" (Svensén 1993: 167) and, thus, to supplement the information given in definitions, examples or other parts of the dictionary entry (Hupka 1989: 197). Rey-Debove concludes "si la définition linguistique est suffisante, l'illustration […] est une information d'appoint […], si la définition linguistique est insuffisante […], l'illustration apporte une information complémentaire"[67] (1971: 35). There is no doubt about the fact that it is difficult to describe certain headwords, such as those for animals, plants or culture specific concepts, in a comprehensible way or distinguish them from other similar concepts without long, complex definitions. Illustration often prove to be more helpful for learners in such cases. Accordingly, Landau (1991: 112) and Zgusta (1971: 256) demand that illustrations should mainly depict "unusual or unfamiliar things" (Landau 1991: 112) and Herbst and Klotz ask for illustrations whenever it is difficult to verbally explain a meaning (2003: 161).

A closer look at the tested illustrations reveals that the compilers of the dictionaries evaluated apparently ignore such advice. Strangely, in some cases, more importance seems to be placed on the meanings of test words that advanced learners

[64] It seems that only language has the power to abstract, which is necessary for a definition.
[65] Illustrations refer to the concept denoted, never to the denoting sign.
[66] The text leads and determines the comprehension of the illustration, while the graphic illustrates the abstract text so that the two possible approaches complement each other.
[67] If the linguistic definition is sufficient, the illustration is a supporting information; if the linguistic definition is insufficient, the illustration offers complementary information.

should already be familiar with, than on those that could be new to them. The makers of LDOCE apparently consider *cutting board* as the meaning of *board* that is the hardest to explain verbally or to comprehend, and therefore enclose a photograph of a cutting board (Fig. 24). MED's illustration also includes a drawing of a cutting board. It is, however, only one of several types of boards depicted in the illustration (Fig. 26). MED and OALD feature illustrations for *leg* (Fig. 29 and 32). It is very unlikely that advanced learners of English are unfamiliar with this term for a body part.

One could argue, though, that there are never too many illustrations in a dictionary. There is no logical reason why an advanced learners' dictionary should not contain the previously discussed illustrations. One could, nevertheless, expect its compilers to focus more on those terms that actually pose difficulties for the target audience. Apart from the fact that only two dictionaries, viz. LDOCE and OALD, include a definition of *screen* in the meaning of *a decorative wall in some churches* (LDOCE), none of them features an illustration to support their very vague definitions. MED is the sole dictionary to incorporate a drawing for the make-up *foundation*. CIDE also includes an illustration named *Cosmetics*, which, however, does not depict *foundation.* Even though the meaning seems to be fairly obvious on first sight, distinguishing and naming various types of make-up is certainly not an easy task, particularly in the productive use of the dictionary.

If one compares the illustrations of the sample articles, it becomes apparent that there are two major tendencies that distinguish the dictionaries evaluated. Firstly, CIDE exclusively utilizes drawings, whereas LDOCE, MED and OALD feature both drawings and photographs. LDOCE and OALD seem to include even more photographs than drawings. Secondly, and this only becomes obvious if one considers more illustrations than those in the test articles, CIDE and MED include black and white as well as color illustrations. Conversely, LDOCE and OALD contain mainly color illustrations. As a consequence, the question arises which approach suits the learners' needs best, drawing or photograph, black and white or color illustration.

Due to their use of photographs, LDOCE and OALD seem to be more state-of-the-art than the other two dictionaries. Although MED also includes a few photographs, they are not as prominent as in the two previously discussed

dictionaries. It is interesting to note that in MED only clothes are depicted in photographs, while all other illustrations are drawings. The reason for this policy has nowhere been specified in MED's blurb.

OALD's illustration for *Sports* (Fig. 31) demonstrates that photographs are obviously more realistic than drawings. Similar photographs can easily be found in daily newspapers. This seeming advantage is at the same time also one of their major drawbacks, though, as photographs suffer the disadvantage of being "häufig wesentlich stärker zeitgebunden […] als Zeichnungen"[68] (Herbst/Klotz 2003: 163). The photographs used in LDOCE and OALD presently appear to be well chosen, yet in a few years from now, or maybe even sooner, they will most certainly be perceived as being rather old-fashioned. In particular photographs depicting quickly developing objects, such as electronic equipment or fashion, run the risk of soon being considered out-of-date. Thus, while the sports shown in OALD's illustration will most likely remain the same, the players' jerseys, as well as the clothes depicted in MED's photographs, and possibly even the racing cycles in OALD, might soon create an odd impression. The same is true for OALD's illustration of computer equipment (Fig. 35), which already at present seems rather obsolete; scanner, PDA and monitor are neither up-to-date nor very fashionable.

Apart from being less characteristic of a certain time, drawings are usually more prototypical than photographs. "Drawings may combine features of many individuals and thus represent a composite distillation of elements regarded as typical" (Landau 1991: 112). LDOCE's photograph of an armchair (Fig. 25), however, depicts only one type of *furniture having legs*, which cannot even be considered a prototypical representative of this group.

In contrast to drawings, items depicted in photographs are often disturbed by visual noise. A photograph of something "in authentic surroundings is naturally more realistic than one in which the surroundings have been erased, but the latter procedure often increases the ability of the picture to convey an explanation, by removing the visual 'noise'" (Svensén 1993: 169). The photograph showing *cricket* in OALD's *sport*'s illustration (Fig. 31) is a good example for visual noise. There are so many things in the picture's background that it is not obvious on first sight what part of the photograph is supposed to be the center of attention. "Of course, photographs can be doctored as well, with details brushed out, but the results often

[68] Photographs are often more restricted to a particular time than drawings.

look doctored and unsatisfactory, and touching up photographs is expensive" (Landau 1991: 112). Svensén similarly states that "in many cases it may be important to show the relationship of an object to certain aspects of its environment. One would then prefer to retain only certain of these aspects and exclude others, so that a drawing, being easier to adjust, is the more flexible approach" (Svensén 1993: 169).

According to Heuberger, "the most significant reason why drawings ought to be rated higher than photographs (from a didactic point of view) is that they are usually understood more quickly and easily according to several studies" (2000: 36 and cf. Hupka 1989: 708). This is probably due partly to the fact that drawings are usually more abstract than photographs and partly to the lower visual noise in drawings.

The previously mentioned studies described by Hupka (1989: 708/9) have yielded furthermore, that there is no considerable discrepancy between the informative value of black and white and color illustrations. It can safely be assumed, nevertheless, that learners generally prefer color illustrations and consider them to be more appealing than their black and white counterparts. The makers of LDOCE and OALD have largely relied on color photographs and drawings whereas CIDE and MED feature both color illustrations and black and white drawings.

CIDE's differentiation of lexical items into black and white and color illustrations appears to be rather arbitrary. It seems that "lexicographic or didactic considerations have not been in the foreground" (Heuberger 2000: 43). Although "die Zahl der Gegenstandsbereiche, zu deren wesentlichen Charakteristika eine oder mehrere bestimmte Farben gehören, […] nicht gerade umfangreich [ist: K. M.]"[69] (ibid.: 708), it is desirable that headwords belonging to these categories, such as plants, animals, minerals or colors themselves, should if possible, be displayed in color (cf. Svensén 1993: 170). While for example vegetables and fruits are presented in color in CIDE, trees are depicted as black silhouettes (Fig. 37 and 38). These inconsistencies are perhaps due to the process of adapting the dictionary to the CD-ROM medium and will hopefully be eliminated in the next edition. "Whether one likes the silhouettes or not is a matter of taste, but it cannot be denied that they generally serve their purpose" (Heuberger 2000: 40). There are nevertheless a number of cases, as for instance "walking single file" (Fig. 40), in which the silhouettes hinder the comprehension of the pictures or at least do not support it.

[69] The number of classes of objects, which have particular colors as a crucial characteristic, is limited.

This illustration also reveals another particularity of CIDE, namely that human beings are frequently displayed simply as outlines or silhouettes without any typically human characteristics (Fig. 39 and 40). Heuberger assumes that this might have been done "to ensure that the user is not distracted from the essential information that the illustration is supposed to convey" (2000: 46). Whether or not it really facilitates the comprehension or whether it simply renders illustrations unattractive remains questionable.

CIDE's illustration of shapes, in contrast, is more colorful than necessary (Fig. 41). The use of colors in this illustration is particularly confusing as one might assume that 2D and 3D objects belonging together are depicted in the same color. *Circle* and *cylinder*, which are related, are both green. The *sphere*, which can also be related to a circle, is colored burgundy, though. It is even worse in the case of *square*, which is blue, *cube*, yellow, and the orange *pyramid*. Here, the use of colors conveys no relationship whatsoever.

In MED, only few exclusively black and white drawings can be found. Its compilers chose to use various shades of gray and red as a second "(nonblack) color [...]to highlight the aspect of the picture relating specifically to the term and to add a decorative element" (Landau 1991: 113/4). As can be seen in the illustration of *burn* (Fig. 42), this policy is often not only more appealing to the eye but also more helpful than pure black and white illustrations from a didactic point of view. Learners know right away which part of the illustration they should focus on and are probably not as much distracted by visual noise. Yet, "if the second color is used invariably to highlight the particular part of the illustration corresponding to the entry word, any particular color will sometimes be inappropriate" (Landau 1991: 260). In MED's illustration of *wash* (Fig. 43), the color red does not help clarify the drawing, but instead conveys a wrong impression, namely that the water in the bucket and the car are dirty. Water depicted in any color other than blue, or a light shade of gray in black and white illustrations, creates the impression of being dirty.

CIDE and MED also feature fully colored atlas sections. MED's section includes maps of the world, the continents and individual countries. CIDE contains only maps of the British Isles. While MED's maps are fully colored, CIDE's are held in blue and white. As MED's maps depict a number of countries at a time, the use of various colors to distinguish them is really welcome. CIDE only displays two countries, viz. the United Kingdom and the Irish Republic, and thus does not need to employ

several colors to distinguish them. The question of whether or not such maps should be colored is, according to Heuberger, of a minor importance as "from a linguistic point of view, these sections are only of minor significance, as they are concerned with peripheral (encyclopaedic) subjects" (2000: 37). From a didactic standpoint, however, such encyclopedic facts can be very helpful for the learners, which Heuberger also confirms. He states that "it is questionable whether they can do more than motivate the learners to use their reference work – which would, however, be an important achievement indeed" (ibid.). Apart from this, every illustration is encyclopedic to a certain extent (cf. Rey-Debove 1971: 35) anyway. Furthermore, "illustrations which also specify the parts of the object (if these do not need to be mentioned in the definition) are at the borderline of encyclopedic redundancy" (Svensén 1993: 172).

With regard to the types of illustrations used in the dictionaries, four major tendencies can be made out in the dictionaries evaluated (cf. Svensén 1993: 171-177). The most obvious ones are certainly pictures of single items, as for example LDOCE's illustrations for *board* and *leg* (Fig. 24 and 25). LDOCE, MED and OALD frequently employ this type of illustration. LDOCE and OALD also feature illustrations of single objects in which their individual parts are specified (Fig. 25 and 32). The labels for these parts are displayed permanently. Labels in CIDE and MED, in contrast, are only displayed if the learner moves the pointer over the respective part of the illustration. Although Heuberger appreciates this pop-up function finds that it "ensures that the screen is not loaded with captions and makes for a much clearer presentation" (2000: 47), it can also become cumbersome, as has been pointed out in chapter 3.1 already, if the compilers of the dictionary have not included a list of the labels as well.

Two other types of illustrations comprise groupings of various items. "Der entscheidende Vorzug, der den Illustrationen zugeschrieben wird, besteht in der Möglichkeit, anhand der Gruppenabbildungen […] oder der Abbildung von ganzen Komplexen […] den Wortschatz zu erweitern"[70] (Jehle 1990: 125). One possibility is that objects belonging to one class be grouped together in one illustration. "If the headword denotes a superordinate concept with a finite (and not very large) number of subordinate concepts, it is again reasonable to deal with them all together"

[70] The decisive advantage of illustrations is the opportunity to enlarge the vocabulary with the help of illustrations of groups of items or of whole complexes.

(Svensén 1993: 172). As can be seen in OALD's illustration of computer equipment (Fig. 35), the headword does not necessarily have to denote a superordinate concept. Learners are also presented with this illustration if they search for a subordinate concept, such as *mouse*. The compilers of CIDE obviously prefer this approach, as CIDE includes hardly any illustrations of single objects but many groupings of related items, such as the illustrations of chairs, vegetables or trees mentioned earlier on. OALD's makers found a very creative way of combining single object illustrations with those of several related objects. If the learner searches, for instance, for *computer*, he/she will be presented with a photograph of a computer included in the dictionary article (Fig. 34). If the learner then double clicks on the picture in order to enlarge it, not only the photograph of the computer will be shown but also illustrations of various electronic appliances related to computing (Fig. 35). This policy ensures that learners initially focus on the part of the illustration that depicts the headword but are also offered the opportunity to enlarge their vocabulary with the help of overviews displaying related concepts.

The third type of illustrations employed in the dictionaries evaluated are illustrations of objects in their surroundings. "L'objet à montrer est parfois une partie d'un tout qui ne peut être évoquée qu'à l'intérieur du tout"[71] (Rey-Debove 1971: 36). This type of illustration is "very useful in dictionaries designed for learning […]. There is general agreement that the learning of a group of words is assisted if they represent related concepts" (Svensén 1993: 175). This is probably why the compilers of CIDE, MED and OALD chose to represent sports, at least partly, in their characteristic environments. While LDOCE's illustration of baseball depicts only one player with a bat, MED's and OALD's pictures show the field, several players and typical actions. MED displays various sports in this way, such as baseball, basketball and tennis. One could argue, though, that its compilers overemphasize the category of sports. Yet, as has been stated above, the inclusion of such extra material can only be useful for learners as long as it does not hinder them from accessing the information that they were actually looking for. The problem of visual noise is particularly prominent in this type of illustration.

The fourth type of illustrations, illustrations of the various senses of a word or of homonyms, is used mainly in two dictionaries, CIDE and MED (Fig. 44). Such illustrations are not likely to be of a great help for the receptive or the productive use

[71] The object that is depicted is sometimes part of a whole concept that can only be evoked if the entire concept is shown.

of the dictionary. They are, however, ideal for language learning purposes and can, thus, also be included in advanced learners' dictionaries.

It can safely be said that there has been considerable progress in the use of illustrations in electronic dictionaries. Yet, "dictionary makers are only beginning to comprehend and actually use the vast opportunities of the medium CD-ROM" (Heuberger 2000: 50). There are still many options, such as short video clips showing actions that are otherwise hard to explain that could also be incorporated in the dictionaries. LDOCE and MED have already managed to nicely illustrate not only nouns and adjectives but also verbs (Fig. 46). CIDE's illustration of prepositions expressing movement (Fig. 47) shows that even function words can be explained with the help of a picture. Nevertheless, video sequences are desirable, especially because they feature sound, which often helps elucidate the headword's meaning. LDOCE's sound files illustrating sounds that can hardly be described verbally, such as a buzz or the sound of a didgeridoo, clearly make LDOCE stand out from its competitors. Such features are desirable also for the other dictionaries, not to speak of the fact that the compilers of COBUILD should at least start including illustrations.

5. The Dictionary as Study Aid

Most learners consider their monolingual dictionaries to be valuable study aids (cf. chapter 2.2). Since learners mainly consult monolingual dictionaries for receptive purposes, it is very likely that they base this evaluation on the dictionaries' usefulness for decoding. Zöfgen, however, claims that "dieser Wörterbuchtyp seine Stärken eigentlich in Situationen der Textproduktion unter Beweis stellen müßte"[72] (1994: 19). Accordingly, the tested dictionaries will also be assessed briefly for their usefulness for encoding and "im Hinblick auf ihren Beitrag zur systematischen Kompetenzerweiterung"[73] (ibid.).

5.1 Productive Use

One of the major challenges that learners face when composing a text is to find words in the foreign language to express their ideas appropriately. Monolingual learners' dictionaries can be particularly useful in situations, "lorsqu'on ne connaît pas, ou lorsqu'on a oublié, le mot ou l'expression qui conviendrait le mieux à l'idée que l'on veut exprimer" and "lorsque le mot ou l'expression qui vient à l'idée paraît inadequate et que l'on souhaite en trouver un mieux adapté à la nuance de sens que l'on souhaite rendre"[74] (Püschel 1986: 238, cited in: Zöfgen 1994: 246). According to Bogaards dictionaries should include visual and textual aids illustrating meronyms, hyponyms and/or hyperonyms of the headwords, as well as words or phrases related to the headwords , in order to help users find the right words (cf. 1999: 118-123).

All dictionaries, except COBUILD, contain illustrations, which facilitate the comprehension of the corresponding headwords. Conversely, they might not be equally helpful for the productive use. LDOCE's illustration for *house* (Fig. 45), for instance, is quite ineffectual for the productive use. Instead of providing the user with names for the various parts of a house, as it is done in OALD's illustration (Fig. 36), it simply displays a house, which cannot even be considered stereotypical for Britain

[72] This dictionary type should actually proof its worth in situations of text production.
[73] With regard to their contribution to the systematic development of competences
[74] Monolingual learners' dictionaries can be particularly useful in situations, when one does not know or forgot the word or expression that would suit best the idea one would like to express, and when the word or expression that came to one's mind seems inadequate and one wants to find another one that is better adapted to the shade of meaning one would like to express.

or the US. In this case, LDOCE clearly fails to “conserve a flavour of authenticity and ‘couleur locale’” (Bogaards 1999: 122). If LDOCE’s illustrations are labeled, learners can easily access the labels’ definitions by clicking on them. According LDOCE’s help file “this makes it easy to learn the names for parts of things”. Unfortunately, many of its illustrations are not labeled, as for example its illustration for *house*, or labeled insufficiently. The illustration for *car* (Fig. 48), for instance, has only four labels: *mirror*, *headlight*, *fog lamp* and *indicator/turn signal*, which many advanced learners probably know. Other parts of the car, which have more difficult names, such as *fuel gauge* or *gear lever/shift*, are not indicated in the illustration. Even though LDOCE does not have a separate list of illustrations, learners can easily access them by restricting the *Multimedia Search* to *pictures*.

CIDE and MED, in contrast, list their illustrations separately from the A-Z index of the dictionary. These separate lists offer their user the opportunity to browse through the pictures when trying to find a word, which is sometimes helpful for discovering additional information about complex concepts. CIDE’s entry for *house*, say, contains just a reference to the illustration *house*, which only depicts a house’s exterior. By browsing through the list, users can discover illustrations for *bedroom*, *bathroom* and *kitchen*, which display details of a house’s interior. CIDE’s illustrations usually contain more labels than LDOCE’s, which are, however, not visible on first sight. The user has to move the pointer over the various parts of the illustration in order to discover if they are labeled. This can be particularly frustrating if illustrations are fairly complex. An instance is CIDE’s illustration for *house*. It would be better and less time-consuming if all labels were displayed directly. CIDE also provides its users with short explanations of the labels when they click on them.

As does CIDE, MED contains black and white as well as color illustrations. There are two ways of accessing a picture’s labels in MED: either by moving the pointer over the illustration to discover which parts are labeled or by clicking on one of the labels in the *Objects* list, which enumerates all labels of an illustration. This approach has two advantages, namely that users can directly select and look up unknown words from the list and that they can be certain to discover all of a picture’s labels. LDOCE and MED feature illustrations of verbs and MED occasionally differentiates between near synonymous verbs (Fig. 46), which can be of great help for the production of texts. In all probability, the differentiation between *draw*, *copy*, *sketch* and *trace*, for instance, facilitates the choice of the right term more than a

verbal description could. The terms *draw* and *sketch*, in particular, require fairly long explanations in order to achieve a clear distinction. Again, learners can open additional explanations by clicking on the labels. Similarly, CIDE provides the learners with an elaborate illustration of prepositions expressing movements (Fig. 47). The learners have a collection of the most important prepositions at hand, which facilitates their differentiation and the choice of the appropriate preposition.

OALD's illustrations contain by far the most labels and in this respect, are suited best for the productive use (Fig. 36). Then again, OALD has one major drawback. Users first have to find the headword for the article containing the illustration they want to observe. There is neither a separate list nor a special search function for illustrations provided. Just as in CIDE, the articles for all terms displayed in OALD's illustrations have cross-references to the corresponding pictures. This can be helpful if learners already know a word that could possibly be a label of an illustration but do not know under which headword the illustration could is subsumed. LDOCE's approach is similar but slightly better since its articles are not linked to the illustrations but directly have the corresponding illustrations attached.

Textual aids seem "to be useful for more abstract words and can be taken to be more or less complementary to […] illustrations" (Bogaards 1999: 122). While illustrations help learners find the right words, textual aids show them how to employ the word well grammatically speaking. Cowie points out that "examples can be used to flesh out a range of sentence patterns or to point up stylistic contrasts" but that special attention has to be paid to collocations since there is only a limited variety of possible combinations and learners mistakes can be made easily (1983a: 140).

Despite its shortcomings concerning illustrations, COBUILD is definitely a good source to utilize to when composing texts. None of the five dictionaries can keep up with COBUILD when it comes to the clear presentation of synonyms and antonyms. COBUILD's combination of dictionary and thesaurus leads to a straightforward arrangement, which facilitates the comparison of similar words and facilitates the choice of the best suitable words. The combination with the Wordbank is particularly helpful in the few cases, when the dictionary does not offer explanations of word or does not list enough example sentences.

While the synonyms listed under *Entries* are synonyms of the search word, those presented under *Full Text* are linked to entries from the thesaurus in which the search

word is presented as a synonym. This way it is possible to go from *eat* to *eat sparingly* to *diet*, which can be very useful if one has only a vague idea of a similar word or of a word that is somehow related to the concept in question. In addition to this, usage notes help clarify grammatical difficulties and assist learners in choosing the right word when several are possible. Should they still be uncertain about how to correctly construct a sentence with the newly found word, they can compare their sentence to the sample sentences in the Wordbank.

Only LDOCE features a similar presentation of examples, if users change the settings accordingly. In addition to this, it also includes a *Phrase Bank*, which lists words frequently used with the search word. These words range from prepositions to nouns and verbs on to fixed *dictionary phrases*. LDOCE's *Usage Notes* helps users decide between confusing words (*Word Choice*) and provides them with helpful hints on collocates or words which are often used in context with the search word (*Word Focus*). *Word Set* shows subject areas to which the search word belongs and thus might help find the word sought.

CIDE offers related words for each article. If the user clicks on *Related Words* in the article for, for instance, *house*, CIDE switches automatically to a list displaying names and types of *houses and homes*. Each sub-entry is linked to a group of words which, similarly to COBUILD, do not necessarily have something to do with the other meanings of the headword. The explanation *You can also use house to mean all the people living in a house*, for example, is linked to the categories *Social Relationships and Roles* and *Groups of People*. CIDE distinguishes between headwords, phrasal verbs and idiomatic expressions with similar meanings; a feature that the other programs do not offer. MED, in particular, cannot keep up with its competitors. It rarely presents its users with information on synonyms or collocations. The only opportunity that users have to systematically search for synonyms seems to be the *SmartSearch*, in which they can search for definitions. Yet, such a search also brings up many words which are not connected to the search word. Funnily enough, one of the results of the search for *eat*, for instance, is *artichoke* because its article contains a description of how to eat artichoke. All things considered, MED is still more reception than production oriented.

OALD's compilers managed to find a balance between reception and production orientation. Even though the dictionary part is more reception oriented, it often contains references to synonyms, antonyms or words expressing similar concepts,

which are marked with *compare + word*. Similarly to LDOCE, OALD's dictionary window includes a small window in which the matching entry from the Wordfinder (respectively Longman Language Activator) is displayed (cf. chapter 3.1). Users can easily switch between the reference works and, thus, can compare meanings and uses of seemingly similar or opposite words. If users have the Wordfinder window opend, a small window with the respective dictionary entry and another one with extra example sentences are also displayed. Both Wordfinder and Activator are arranged according to onomasiologic principles and group words according to themes. They suggest "more precise words for common meaning areas" (LDOCE: help file). This approach enables their users to depart from a concept and to search for corresponding expressions.

When looking up the word *house*, for instance, learners can find information on various types of houses, on their interior, exterior and surroundings, words related to buying, selling and renting houses, etc. The Wordfinder is slightly more user-oriented than the Activator because it seems to contain more words and more exhaustive explanations. While the Activator offers three categories for *house*, which are all related to different types of houses, apartments and homes, the Wordfinder groups its suggestions under seven categories ranging from types of houses to individual parts of houses to activities connected with houses.

Should learners still be uncertain about which words to combine, they could refer to the *Oxford Know-How*. While they type a word, phrase or sentence into the text editor window the program will check for words that frequently occur together with the last words that have been typed in.

> A student could type something completely ungrammatical, like *me wanting bought present* … an the program would look for examples that contain the following words: *me/I; want/wants/wanted/wanting; buy/bought/buying/buys*. It would then show this example:
> I want to buy a present for my mother and my father. (OALD help file)

Even though the *Know-How* includes a spell checker, it does not feature a grammar checker. As a result, users are forced to check themselves which suggestions are suitable and grammatically correct. OALD's Know-How ignores word endings and distinguishes between frequently confused words, such as *for* and *since*. It is consequently a perfect supplement to word processors featuring spelling and grammar checkers, on the one hand, and monolingual learners' dictionaries, on the other. Yet, it cannot "replace the default spell-checker or dictionary in a word processor" (Arkoff 2002: 107), which are still preferable for the treatment of longer texts. The combination of a mostly reception-oriented dictionary, the production-

oriented Wordfinder and the Oxford Know-How as instant support for students composing texts, Oxford has managed to create an exceptional study aid.

All things considered, one can conclude that the tested dictionaries are far from being as good for productive purposes as they are for receptive uses. All of them could still include more illustrations, add more labels and improve their accessibility. With regard to textual aids, all of them, except MED, have individual special features, which are very helpful for encoding. Nevertheless, they should aim at establishing separate parts for decoding and encoding, as is done in LDOCE and OALD. This way, learners can directly refer to the source they need without having to read through extra material, such as dictionary information, which is certainly important but not necessarily helpful for encoding. Needless to say, the Oxford Know-How is an application many learners undoubtedly value tremendously.

5.2 Studying with the Dictionary

According to Atkins, a dictionary "is not a front-line pedagogical instrument in the same way as a course book, language-lab tape or even a grammar book is" (1985: 23). It is certainly true that learners do not "open [the A-Z part of: K. M.] a dictionary and proceed to learn the language from cold" (ibid.). Neither will "even the most skilful dictionary use alone […] by itself increase pupils' vocabulary" (Berwick/Horsfall 1996: 25). Yet, with the help of specially adapted study activities, the value of monolingual learners' dictionaries for vocabulary building can be increased considerably. Furthermore, if one takes into account the copious language study sections in the back matter of contemporary monolingual learners' dictionaries, their value for language learning is undeniable and their label as *secondary study aids* has to be reconsidered.

The materials provided in the language study sections of the five dictionaries in question differ considerably in size, scope and accessibility. In the back matter, print dictionaries usually display information on language awareness and usage, and occasionally encyclopedic information. Due to the lack of physicality of electronic reference works, such information cannot be presented in their *back matter* but has to be categorized and located differently. As a result, the dictionaries evaluated usually contain either study pages comprising grammatical and lexical information as well as

‘front matter’ information on the dictionaries themselves, or exercise sections, in which learners can practice vocabulary, grammar or both.

In contrast to OALD and LDOCE, which do not contain study sections, CIDE and MED include both study and exercise sections. The study sections are split into two parts in CIDE, viz. *Study sections* and *About this dictionary*, and three parts in MED, namely *About the dictionary*, *Language Awareness Pages* and an *Atlas*. CIDE’s main focus is on grammatical and lexical difficulties, which are grouped into five major categories ranging from *Punctuation* to *Word building*. The articles in each category present the learners with a short synopsis of important rules illustrated by an example for each rule. Should the article contain various aspects of a topic, it is devided into several parts and presented on a number of pages displayed in the form of a hypertext.

Alternately, MED’s *Language Awareness Pages* do not aim at expanding the learners’ grammar knowledge but are rather “designed to give up-to-date information on topics that are relevant to everyone who has any interest in the way the English language is being used at the beginning of the 21st century” (MED: Study Section *Language Awareness*). Topics range from *Academic writing* to *Sensitivity: avoiding offence* on to *Business English*. MED’s articles, which are longer than CIDE’s, are also displayed in a hypertext format. Among them are seven essays, which were either especially written for MED or which are abbreviated versions of more detailed works. Five of them even contain suggestions for *further reading*, which makes them particularly advantageous for learners, not to mention teachers.

Alan Kirkness’ claim that “this material is undoubtedly useful, but it is unlikely that learners will consult it, let alone use it systematically, unless teachers explicitly refer to it” (2004: 300) is certainly true for ‘traditional’ topics, such as punctuation or metaphors, but does probably not apply to study pages focusing on ‘real life’ situations. Both dictionaries aim at enabling their users to not only enlarge their vocabulary but also to successfully employ it to produce texts in an academic context, as well as in formal and informal everyday situations. They therefore concentrate on standard topics, such as writing a curriculum vitae, but also include more current challenges, such as computer words or netiquette. The lists of netcronyms and emoticons as well as sample e-mails and letters provided by CIDE are likely to be among the most frequently consulted study pages. Such lists are

noticeably more exhaustive in CIDE than in MED. Frequently used netcronyms such as *FIY* (for your information), *HTH* (hope this helps) or *AFAIK* (as far as I know) are fairly hard to decode, especially when they are used in subject lines. Moreover, they are usually not included in dictionaries (cf. Table 12), which considerably limits the likelihood of locating their meaning efficiently, without having to search the Internet for similar study pages. Additional information on when and how to employ such computer words enables CIDE's users to choose the appropriate style when using e-mail or Internet.

Ease of access to these pages is as important for the program's user-friendliness as it is for the dictionary itself. Even though COBUILD features exhaustive *language awareness and usage pages*, *grammar pages* and *sample lists*, it is not very likely that its users consult them on a regular basis. There is neither a table of contents available indicating the topics covered in these pages nor is there an opportunity to access them directly. User first have to enter a search word which they assume to be somehow connected to the grammatical difficulty they are encountering. Afterwards, they can look up the categories *Sample Lists* and *Remarks* in the full text search results and check if COBUILD features study pages for the topic in question. This access structure makes the program absolutely unsuitable for a systematic approach to grammatical or lexical challenges. Yet, at the same time, it is one of COBUILD's assets, as it directly presents its users with a list of study pages in which search terms appear and thus informs them about possible difficulties of which they might not even be aware when they type in the word. As a result, COBUILD is very helpful for the productive use but not for systematic language learning in general.

With regard to encyclopedic information, COBUILD is of hardly any help to learners. It neither features study pages on encyclopedic topics nor does it give explanations of terms and abbreviations, which could be classified *encyclopedic data*, as for example *AAA*[75]. When typing in *AAA*, the program barely offers a list of examples from the Wordbank, which are not necessarily helpful and sometimes even misleading; as for instance *The AAA/Visa comes with a low, introductory Annual Percentage Rate*. From the examples, it is virtually impossible for user´s to conclude that *AAA* can stand for two different associations. COBUILD does not inform its users about the question, which organizations precisely the abbreviation denotes,

[75] I.e. Amateur Athletic Association or American Automobile Association

either. The above example points more towards a bank than towards an automobile club. Even though the lack of definitions of proper nouns could be considered a drawback of the dictionary, it is not surprising since COBUILD represents a rather traditional view of lexicography. For the most part, then, it excludes proper nouns and encyclopedic information and does not feature exercise sections either.

Despite the fact that the remaining four dictionaries feature and advertise exercise sections, the number, quality and usefulness of these sections differ considerably. MED's exercise 'section' is by far the smallest and chiefly offers the opportunity to systematically expand the leaners' knowledge of vocabulary. *Wordlists* contains two sample lists, *dated phrases* and *sports*, whose only purpose probably is to show learners how to create their own lists and how to work with them. It is not very likely that they will use the sample lists provided as study aids because they focus on topics whose usefulness for learners in workaday life is limited and because they contain merley thirty and six items respectively. As a consequence, they are most likely just of a minor interests to the majority of learners.

New wordlists can easily be created by clicking on *create new wordlist*. Adding words to the list, however, is not that simple and requires the lecture of the help file. It is not possible to type in words; they have to be marked in the A-Z part of the dictionary and then added manually to the desired wordlist. Once learners have created their own wordlists, they can choose between the options *show headword*, *show entry (without headword)*, *show note*, and *show note and entry (without headword)*. Apart from the first mode, in which MED's users are only asked if they remember the test word, learners have to type in the headword belonging to the article or note presented. Although writing, and maybe also typing in, words enhances their memorization, the exercise can readily become boring, especially when lists are fairly long because the program does not exclude correctly solved test words from the list but always presents the users with all words in the lists. The program is not properly adapted to the medium and, as a result, is even inferior to the traditional paper card box, in which learners can handily in- and exclude unfamiliar and known words. Were the exercises more user-friendly and offered the option to automatically exclude known words from the lists, they would perhaps be more appealing and more useful for systematic language learning.

OALD's exercise section comprises nine major groups of exercises ranging from error recognition to matching synonyms. Two groups, *error recognition* and

incomplete sentences, are structured similarly to tasks in the *Test of English for International Communication* (TOEIC), making them very helpful for learners planning to take the TOEIC or similar tests. The remaining exercises, however, are less pedagogically valuable. They are categorized according to word classes, which also include idioms and phrasal verbs, and sorted alphabetically. This leads to rahter strange combinations of tested words, such as *dignity, disarray, despair, dent, deadline, disgrace, discretion, discrimination and decency* (OALD: Exercises, Nouns *deadline-disgrace*), with which learners have to fill in gaps in test sentences. The exercises are consequently not adapted to the requirements of a systematic expansion of the vocabulary. If they were arranged according to topics or semantic fields, learners could more easily and more efficiently enlarge their vocabulary knowledge.

Only one category, *Synonyms*, offers this opportunity. Each exercise comprised in this category focuses on one word for which users have to find a number of synonyms or near-synonyms. The first, and occasionally also the last letters of the word sought are already indicated in the gap to give learners a hint, which synonym is required. Asterisks after or between the given letters indicate how many letters are still missing. A major drawback of this exercise is that the stars do not automatically disappear when learners key in new letters. Particularly, in the case of long test words, such as "te•••••ed" (terrified) (OALD: Exercises, Synonyms *afraid*) this can easily lead to confusion, especially when learners are uncertain about the correct spelling of the word and have to count the number of letters they have already typed in, in order to establish the number of letters missing. *Synonyms* is furthermore the only exercise in OALD giving learners the opportunity to key in the solution. In all other cases, they have to drag words into gaps. Undoubtedly, more research is necessary to discover whether this affects the learning process. It can safely be assumed, though, that keying in solutions leads to a better memorization of the respective words. Learners have to concentrate more on the words in question and spell them at least once themselves.

Yet, this issue concerns not only OALD but also CIDE and LDOCE. They also feature gap exercises in which learners partly have to key in solutions and partly have to drag words into gaps. CIDE employs the former method only in two exercise sections, in which the form of the word has to be changed, namely *Irregular and problem verbs* and *Suffixes*. Whenever words do not have to be altered but have to be

placed simply in the right gaps, users are forced to drag them to their places. LDOCE is the only dictionary that almost always offers both possibilities. The only exercise types that do not allow learners to type in solutions are those, in which they have to identify words in sample sentences (LDOCE: Exercises, Grammar *Intensifying adjectives 2*), have to choose between a number of possible solutions (LDOCE: Exercises, Vocabulary *Antonyms 1*), or have to categorize words (LDOCE: Exercises, Culture *Around the world 7*). In all other exercises, LDOCE's users can choose if they prefer a game-like approach and drag words into gaps, or whether they would like to practice the spelling of the respective words and therefore type them in.

In case various users should use CIDE, the dictionary assigns user accounts for its exercise section. This way, different learners can easily keep track of the number of exercises and study sections they have already completed. CIDE's *Study section exercises* cover grammatical difficulties, such as the distinction between adjectives and adverbs, morphological challenges, such as affixes and suffixes, and lexical questions, such as *verbs meaning 'perform'*. Each exercise section is linked to study pages dealing with the particular difficulty of the topic treated in the current exercise. The exercise section on *Nouns*, for instance, is linked to three study pages, viz. *Plurals*, *Countable and uncountable* nouns and *Problem words*. This arrangement allows CIDE's users to choose between a deductive and an inductive approach to grammar questions and, thus, to arrange explanations and exercises in the way that suits them best. In contrast to MED, "what seems to be missing about the exercise component […] is the lack of exercises testing the knowledge of words defined by the user, which would be extremely helpful when learning vocabulary from some coursebook" (Krajka: 2002).

In addition to eight study section exercise complexes, CIDE features *Picture exercises*, which include all pictures from the dictionary. Learner have to label the items displayed in the illustrations by dragging labels from a list to the corresponding objects. Again, the same problem arises that learners face when using CIDE for receptive or productive uses (cf. chapter 4.3.2). Since they have to move the pointer over the illustration to find out which objects or parts are supposed to be labeled, completing a picture exercise can become rather time-consuming, if the respective part of the picture is very small or hard to find. Indications of which parts exactly need to be labeled would constitute a remarkable improvement.

Doubtlessly, LDOCE features the most clearly structured exercise section of all dictionaries evaluated. It distinguishes between *Grammar*, *Vocabulary*, *Culture*, *Dictation* and *Exam Practice*. Even though *Grammar* and *Vocabulary* are quite similar to CIDE's exercise sections, they treat a greater variety of topics. Concerning the design, LDOCE outstrips CIDE again by presenting its users with an index of all exercises available. CIDE simply lists the names of the sections and thus forces its users to repetitively click *next* in order to determine how many exercises are comprised in each section.

LDOCE emphasizes both lexical and encyclopedic information in the dictionary. Additionally, it also includes this information in the exercise section. *Culture* comprises exercises on geographic topics, famous people and organizations, as well as on festivals and holidays. These exercises are certainly of a rather minor importance to the majority of LDOCE's users, though. For the most part, they are either too general[76] or too specific, as, for example, the section on *Historic events*, which ranges from the Magna Carta to the Russian Revolution and on to Neil Armstrong. It is rather unlikely that learners turn to LDOCE to memorize the years in which these events took place. Although the section is not adapted to a systematic approach to encyclopedic data, at which it does certainly not aim, it is a good supplement to LDOCE's other exercise sections because it allows learners to discover encyclopedic facts in a game-like environment and possibly sparks their interest in these events, countries or organisations.

> Engaging the students in some activity other than direct vocabulary learning may help overcome the usual boredom related to dictionary use. If the dictionary is perceived simply as a tool for the accomplishment of an interesting and relatively complex task, which requires evaluation and judgment of several factors, it becomes a necessary step in the process and the students use it consistently. (Nikolova 2002)

LDOCE further offers a special exercise section called *Dictation*, in which learners can train their comprehension of spoken discourse. They are offered the choice between *Sentence dictation* and *Word dictation*. Both of which offer the option to select between British and American English pronunciation. In order to facilitate the task, both exercises offer hints and definitions of the words or sentences in question. Although it is not necessary to understand every single word in commonplace situations, these exercises are a good practice and preparation for conversations with native speakers of English.

[76] Such as the question: *which countries are situated in Europe and which in the Americas?* (LDOCE: Exercises, Culture, Around the world 6)

Last but not least, LDOCE also includes preparatory exercises for language exams. LDOCE concentrates on the following language examinations: *Certificate of Proficiency in English* (CPE), *Certificate in Advanced English* (CAE), *First Certificate in English* (FCE) and *International English Language Testing System* (IELTS). LDOCE comprises individual exercise sections for each test, which, depending on the tasks used in the tests, present the users with a variety of exercise types ranging from multiple choice questions to C-Test on to error analysis. Due to the great diversity of exercise types it is not possible to examine them in detail here.

On the whole, they are nor specially designed for the work with the dictionary but are specifically intended for test preparation and thus significally independent from the other exercises presented in LDOCE's exercise section. Sobkowiak observes, however, that teacher apparently do not (yet) sufficiently 'which countries are situated in Europe and which in the Americas?' (LDOCE Exercises, Culture: Around the world 6) use of the opportunities offered by such exercise banks. None of the teachers in his study had "used a computer dictionary of English recently in class" (2002). Such self-study sections should consequently not replace but complement teachers' work and should preferably be employed more frequently in ESL and EFL classes.

In conclusion, there are markable differences between the dictionaries evaluated regarding the quantity and quality of their study and exercise sections. These are greatly determined by the compilers' views of dictionaries and their assessment of the value of study and exercise sections for advanced learners' dictionaries. While it is certainly true that most learners use this part of dictionary CD-ROMs probably rather infrequently in everyday situations, the value of such pages as study aid, in particular for exam preparation, has to be underscored again. In this respect, COBUILD's and CIDE's study pages, and LDOCE's exercise pages greatly surpass those of the remaining dictionaries, despite the sometimes puzzling organisation of COBUILD's pages.

6. Conclusion

In this MA dissertation, the latest available editions of five advanced monolingual English learners' dictionaries on CD-ROM, viz.

- Cambridge International Dictionary of English version 1.03 (CIDE),
- Collins COBUILD on CD-ROM version 3.1 (COBUILD),
- Longman Dictionary of Contemporary English edition 2003 (LDOCE),
- Macmillan English Dictionary version 1.4 (MED) and
- Oxford Advanced Learner's Dictionary 7 (OALD),

have been evaluated and compared with each other. The evaluation has been twofold, based, on the one hand, on standards for the design of user-friendly software and, on the other hand, on lexicographic criteria. Accordingly, it was necessary to first delimit *English monolingual advanced learners' dictionaries on CD-ROM* from other types of dictionaries and to specify their target user group, whose needs and skills were examined in the following.

It was found that, with regard to the presentation of the content on the screen, the needs of users of electronic dictionaries do not differ greatly from those of users of other programs. The evaluation of the dictionaries' layouts and access structures was therefore based on general standards of GUI design. In the assessment of the programs' layouts, COBUILD and LDOCE clearly surpass their competitors by presenting their users with only one article at a time. Concerning the arrangement of the information presented on the screen, though, LDOCE can not measure up to the other four dictionaries. COBUILD and MED visibly transcend CIDE, LDOCE and OALD regarding navigation and the placement of controls. Nonetheless, CIDE's and COBUILD's designs appear to be somewhat outdated. As a result, the majority of users would certainly opt for either LDOCE, MED or OALD when exclusively considering the programs' designs.

While the layouts of the five dictionaries in question are fairly easy to work with, despite a number of minor and a few major shortcomings on the part of individual dictionaries, their retrieval functions might challenge inexperienced computer users. The evaluation of the dictionaries' basic and advanced search functions has yielded that the CD-ROM medium still offers much unexploited potential. It has to be underscored here, that this does not refer to the contents of the dictionaries, which can easily be changed and updated, but rather to the software with which the

dictionaries work. Content and software still have to be linked better. Frequently, the dictionaries contain the information sought but their software hinders their users from accessing it. On the whole, the dictionaries evaluated accept both British and American spelling and either directly present the learners with the desired article or forward them to it. Should learners not know a query term's canonical form, they are certainly served best with CIDE, with which COBUILD, MED and OALD cannot compete. They still seem rather bookish and employ too many unnecessary cross-references, which are most likely assumed from their editions in print.

With regard to complex search functions, CIDE, LDOCE and MED are perhaps most helpful as they offer a wide range of filters and allow the use of Boolean operators. In spite of working with similar filters, OALD's *Advanced Search* is bound to overtax average users since it requires them to manually key in the codes for the filters. The same is certainly also true for LDOCE's and MED's pronunciation searches. COBUILD's advanced and pronunciation searches, in contrast, are far beyond the capabilities of those in the other programs and still need to be greatly improved. Its Morphological Search is doubtlessly very helpful for learners but it remains questionable why it has not been included into the basic search function whose efficiency it would improve considerably. Other searches, such as LDOCE's *Word Origin* and *Multimedia Search*, are instances of features that are certainly strong selling points but only of a limited use to average users.

The comparison of the dictionaries' layouts and access structures has substantiated that it is not sufficient to equip a given program with a great variety of fancy, seemingly state-of-the-art features. In fact, they frequently do not function as they are supposed to or distract the users from the important pieces of information. Programs with a limited number of self-explanatory features, which are suitable for experienced and inexperienced users alike and which actually work as the users expect them to do, are undoubtedly preferable, though. Accordingly, for common use COBUILD and MED slightly surpass their occasionally more fancy but generally more complicated and less user-friendly competitors. Yet, with regard to productive uses, OALD is at the cutting edge of search engine design and is the only dictionary evaluated that allows its users to key in several words, such as compounds or multiword expressions, in the basic search facility and automatically presents them with the closest matching entry.

The assessment of the five dictionaries based on lexicographic criteria was split up into individual evaluations of the three major parts of dictionary entries, viz. the information given in lemmata, its explanation and its exemplification.

The microstructures of the dictionaries in question differ greatly, ranging from one collective entry with a number of sub-entries for polyseme and homonym headwords in COBUILD, to separate entries with and without sub-entries for homonym headwords in LDOCE, MED and OALD, on to independent entries for a headword's individual senses in CIDE. LDOCE's, MED's and OALD's policies seem to be the most user-friendly as they, in contrast to CIDE, permit their users to rapidly locate the article sought. This they do by limiting the number of articles for one headword and, in contrast to COBUILD, facilitate the navigation within articles by not presenting their users with an excessive number of sub-articles.

It can safely be stated that LDOCE's presentation of all important information belonging to lemmata in a lemma-bar is preferable to those of the other dictionaries. All dictionaries, except CIDE, provide learners with information on the headwords' frequencies. LDOCE and OALD also offer information on their etymology. While the former is essential to learners' dictionaries, the latter can, in most cases, be considered valuable extra information for the interested learner.

With regard to part of speech and morphological information displayed in lemmata, LDOCE and MED outshine their competitors by displaying such information right after the headword, which markedly facilitates the navigation within the dictionary. COBUILD positively stands out by presenting a number of inflected forms for each headword, no matter whether they are formed regularly or irregularly. At the same time COBUILD also has a major drawback, namely that it indicates part of speech information not within the lemma but at the end of each sub-entry. A comparison of the part of speech codes used in the dictionaries revealed that there are considerable differences regarding the labeling of parts of speech other than the major word classes, which suggests that more research on this delicate topic is necessary.

Concerning information on pronunciation, COBUILD's policy of neither displaying transcriptions nor American pronunciations is absolutely unacceptable. LDOCE's option, either to display or to hide phonetic transcriptions according to the users' preferences, is very user-friendly since phonetic transcriptions in all four dictionaries are occasionally quite confusing and might overtax inexperienced

learners. The presentation of phonetic transcriptions for both major varieties of English, as it can be found in CIDE, LDOCE, OALD and partly also in MED, is desirable as it is very useful for productive purposes. Again, LDOCE is exceptionally good at presenting both possible varieties of headwords fully transcribed. It has already been mentioned earlier on that the inclusion of recorded pronunciations of headwords in context, for instance in sample phrases, is highly desirable for future editions.

For the evaluation of the definitions, a classification system of types of definitions was established in order to not only compare the definitions' contents but also their structures. The subsequent comparison of types used in the test articles has revealed that the compilers of all dictionaries in question apparently favor, and as a consequence, over-use typifying definitions, even though other types might, in some cases, have been more helpful to learners. The comparison has further determined that their opinions on what information (not) to include in dictionary entries differ considerably. This is reflected in the occasionally great discrepancies in the structures of the test articles and confirmed by the diverging numbers of collocations and idiomatic expressions included in these articles.

Similarly, the information on the headwords' grammatical particularities in the test articles vary considerably. While COBUILD offers detailed information in the form of rather complicated grammar codes, MED confines such information to a minimum. Admittedly, it is questionable whether or not average learners can make use of such complicated information as is presented in COBUILD. Slightly less detailed coding systems as those used in the remaining three dictionaries are surely favorable.

All dictionaries evaluated employ labels to provide learners with usage information on the headwords. From a didactic point of view, COBUILD's, MED's and OALD's policies of presenting usage notes for potentially difficult words are quite notable. Verbal and graphical illustrations have generally been well employed to illustrate meanings and grammatical properties of headwords. LDOCE's and MED's principles of attaching graphics to each article considered and LDOCE's outstanding sound files should preferably also be adopted by the remaining dictionaries.

Regarding their suitability for productive uses and as a study aid, COBUILD's Thesaurus, LDOCE's and OALD's active dictionaries, not to speak of OALD's

Know-How, are undoubtedly of invaluable help to learners. The dictionaries evaluated are nevertheless still quite reception-oriented and could be better adapted to the students' needs when composing texts. All dictionaries contain study and exercise sections, of which LDOCE's exercise section and COBUILD's grammar and usage pages are most helpful to learners, if they can locate COBUILD's pages.

As has already been stated in the Introduction, this comparison is not aimed at finding 'the' perfect dictionary. It is already hardly possible to tell which is the best out of the five dictionaries evaluated, since many of the criteria relating to the accessibility of the information within the dictionaries depend on the users' computer skills and their perspnal preferences regarding the arrangement of the information. What can safely be stated, though, is that COBUILD will serve those users best who have a profound knowledge of the English language and who often consult their dictionaries for productive purposes. OALD is assuredly the best choice for receptive purposes, as users can easily locate single query terms as well as multiword expressions. It furthermore provides them with detailed information on the English language and on cultural aspects, which are not included to such an extent in the other dictionaries evaluated. MED is the superior choice for those who frequently consult their dictionary while working with other applications. Providing its users with short and precise information on the headwords' meanings, MED is very well suited for quick information retrieval when, for instance, reading a text on the Internet. LDOCE is very serviceable for productive purposes as well as for the systematic expansion of the vocabulary. Activator and exercise sections serve well as bases for the preparation for language exams, such as the Cambridge Certificates. CIDE's predominant asset is that it enables incorporation of extra sources from the Internet. By using such information, CIDE has a leading edge on even the most recent words and expressions.

In conclusion, the dictionaries evaluated in this paper differ from another greatly in almost every respect. They are certainly not equally efficacious for all purposes or to all learners. Though many points can and should still be improved, these dictionaries on CD-ROM immeasurably surpass their counterparts in print currently. There is a great chance that learners will consult them more regularly than print dictionaries because of their superlative ability to access information and because of the multimedia features that make them so much more interesting and appealing. As a strikingly successful example of edutainment, English monolingual advanced

learners' dictionaries on CD-ROM will undeniably be employed even more frequently in the everyday life of future language students.

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Selbständigkeitserklärung

Hiermit versichere ich, dass ich die vorliegende Arbeit selbständig und nur unter Zuhilfenahme der angegebenen Hilfsmittel verfasst habe. Alle wörtlich übernommenen Aussagen sind eindeutig gekennzeichnet. Die Herkunft der indirekt übernommenen Formulierungen und Gedankengänge ist angegeben.

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